

**ESSAYS ON FOREIGN DIRECT INVESTMENT  
AND FIRM ECONOMIC ACTIVITIES IN  
SELECTED SUB-SAHARAN AFRICAN  
COUNTRIES**



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## **DECLARATION**

By submitting this thesis electronically, I Joseph Dery Nyeadi, declare that the entirety of the work contained therein is my own, original work, that I am the sole author thereof (save to the extent explicitly otherwise stated), that reproduction and publication thereof by Stellenbosch University will not infringe any third-party rights and that I have not previously in its entirety or in part submitted it for obtaining any qualification.

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Date: December, 2018

## **DEDICATION**

With great gratitude to the Almighty God, I dedicate this work to my lovely wife, Monica Gongoli and my precious daughter, Veronica Aagangmwin Nyeadi.

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Technology from 11-12<sup>th</sup> August, 2016 (Foreign Direct Investment and Corporate Social Responsibility in Sub-Saharan Africa: Empirical Evidence from South African Listed Firms) and (3) African Review of Economics and Finance Conference held in GIMPA, Accra, Ghana from 30-31st August, 2017 (Foreign Direct Investment and Firm Innovation in Sub-Saharan Africa: Empirical Evidence from Nigeria and South African Listed Firms).

## ABSTRACT

In recent times, the attraction of foreign direct investment (FDI) into economies has been a major task embarked upon by many nations. Though much has been documented on the impact of foreign direct investment inflow to host nations at the macro level, less is known about the impact of foreign direct investment at the firm level, especially in Africa, despite the greater efforts put in place to woo in FDI. This study investigated the link between FDI and firm economic activities in Sub-Saharan Africa (SSA). The study specifically answered the following questions: (1) to what extent does FDI inflow to firms enhance the value of the host firms? (2) Do firms with FDI spend more on CSR than non-FDI owned firms? (3) What impact has FDI got on firm innovation?

The outcome of the study has been organized into three empirical essays. The first empirical essay investigates the relationship between Foreign Direct Investment (FDI) and firm value (measured using Tobin's Q and ROA) for selected African firms from Ghana, Nigeria and South Africa for the period of 2008 to 2012. Using the System Generalized Method of Moments, we established that FDI has a positive significant impact on firm value in all the three countries (South Africa, Nigeria and Ghana). This positive relationship between FDI and firm value in the selected countries can be attributed to technological transfer, managerial transfer, innovation transfer and skills transfer in favour of the host firms through inflows of FDI.

The second essay investigates empirically the impact of inward FDI on host firm Corporate Social Responsibility (CSR) performance in South Africa. The study employs Panel Corrected Standard Errors (PCSE) and Seemingly Unrelated Regression (SUR) to estimate the effect of FDI on CSR and thus addresses contemporaneous cross-correlations across the panel cross sections as well as endogeneity between FDI and CSR. It is established from the study that FDI has a strong positive impact on firm CSR performance. When CSR is decomposed further into its major components, FDI positively impacts on social and environmental components but has no impact on governance components.

The third empirical essay investigates the impact of inward FDI on host firm innovation in Nigeria and South Africa. In examining the relationship between FDI and firm innovation, two robust Instrumental Variable estimation techniques (Two Stage Least Squares and Limited Information Maximum Likelihood) have been employed so as to account for endogeneity problems. While FDI positively influences firm innovation in Nigeria, we found no evidence of any impact of FDI on

firm innovation in South Africa. This study does not only serve as a reference work for subsequent investigations on the impact of FDI on innovation in Sub-Saharan Africa, but it also serves as a guide to policy makers on trade and investment policies.

The contribution of this thesis is in a number of ways. One, it accounts for endogeneity between FDI and firm value and FDI and innovation, an issue often neglected by most studies. It is also the first study to empirically examine the relationship between FDI and CSR in a more encompassing manner by using a unique and comprehensive measure of CSR from the Public Investment Corporation (PIC) Governance Survey in South Africa. Again, unlike previous studies where CSR is measured by using only governance, or only legal or only environmental or only philanthropic issues or the combination of them in a limited manner. In this way new evidence is presented on the FDI effect on CSR. For instance, although the effect of FDI on one dimension of CSR e.g. governance may be insignificant, it does not tell us anything about the importance of social and environmental CSR effects of FDI unless these are equally investigated. The study again presents new evidence that shows that context matters in investigating the innovation impact of FDI. Furthermore, unlike most studies which use R&D and patents to measure innovation we create an innovation index using a multiple correspondent analysis (MCA) approach which captures innovation holistically. This approach captures the time lag problems associated with previous methods.

**Key words:** Foreign direct investment, firm value, corporate social responsibility, firm innovation, Ghana, Nigeria and South Africa.

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## LIST OF ACRONYMS AND ABBREVIATIONS

CSR	Corporate Social Responsibility
FDI	Foreign Direct Investment
FE	Fixed Effects
GDP	Gross Domestic Product
GLS	Generalized Least Squares
GMM	Generalized Method of Moments
GSE	Ghana Stock Exchange
IMF	International Monetary Fund
IV	Instrumental Variable
IVLIML	Instrumental Limited Information Maximum Likelihood
IVOGMM	Instrumental Variable Optimal Generalized Method of Moments
IV2SLS	Instrumental Variable Two Stage Least Squares
JSE	Johannesburg Stock Exchange
MCA	Multiple Correspondence Analysis

MNE's	Multi-National Enterprises
NGSE	Nigerian Stock Exchange
OECD	Organization for Economic Cooperation and Development
OLS	Ordinary Least Squares
PCA	Principal Component Analysis
PCSE's	Panel Corrected Standard Errors
PIC	Public Investment Corporation
RD	Research and Development
RE	Random Effects
ROA	Return on Asset
ROE	Return on Equity
RPED	Regional Project on Enterprise Development
SME's	Small and Medium-sized Enterprises
SRI	Socially Responsible Investment
SSA	Sub-Saharan Africa
SUR	Seemingly Unrelated Regression
UN	United Nations
UNCTAD	United Nations Conference of Trade and Development
WBES	World Bank Enterprise Survey

## CHAPTER ONE

### INTRODUCTION

#### 1.1 BACKGROUND OF THE STUDY

The inflow of foreign direct investment (FDI) is noted to be a very good channel through which developing continents like Africa can bridge the developmental gap with the advanced world (Gorg and Strobl 2001). Arguably, FDI is the most dependable source of private capital flow to developing countries and the least volatile source of private capital flow to host countries (Lipsey, 1999). Notably, FDI is associated strongly with increases in productivity and growth rates in industries they enter, promoting skills upgrading, increased employment and innovation (Blomstrom and Persson, 1983; Blomstrom, 1986; Gorg and Strobl, 2001; Abor and Harvey, 2008). FDI based firms are also said to be more productive, paying higher wages, and are more export intensive than non-FDI firms (Dunning, 1993 and Markusen, 1995). It is again associated with economic growth and poverty reduction (Lall, 2000 and Borensztein *et al.*, 1998).

At the firm level, FDI firms have the advantage of being offered long term finance, new technologies, skills, management and market access (Lall, 2000). Besides these enumerated above, other firm economic activities in the form of firm value, firm innovation and firm CSR performance are expected to be enhanced positively with the inflows of FDI into target firms. Firm values and levels of innovation are expected to increase as FDI flow leads to transfer of technology, adoption of enhanced managerial practices and increases in capital flow, thus inducing efficiency, large scale productivity as well as increased expenditure on research and development (Gelubcke, 2012). This is often the case as it is proven that only the most productive firms become multi-nationals as they manage to bear the fixed cost of producing abroad. This cost is noted to be too high for mid-productivity firms which prefer to serve foreign markets through exports while low productivity firms produce for only local market or exit the market to avoid losses (Helpman *et al.*, 2004; Borin and Mancini, 2016).

Also, most reputed international companies are known to be at the edge of applied science due to great deal of investment they have injected into research and development. It is indeed expected that most research and development emanate from multi-national enterprises (MNEs) leading to higher innovations on host firms in developing countries (Boermans and Roelfsema, 2015). Such MNEs are anticipated to have intangible value added knowledge assets which give rise to their

market superiority and expansion ability (Ciabushi *et al.*, 2017). Besides, previous studies have acknowledged that emerging and developing countries' local knowledge stocks are too weak to engage in ground breaking research and development activities, thus external sources overseas are imperative to the developing of local technology for developing countries especially external knowledge sourced from advanced economies (Fu, 2008 and Xu and Sheng, 2012).

On the part of CSR performance, FDI is expected to cause target firms to institutionalise and conduct their activities in a manner that will not be injurious to any of their stakeholders, since the majority of FDI flows to Africa is from advanced countries where CSR standards are high. It is acknowledged greatly in literature that CSR is mainly undertaken by foreign firms and imitated by local firms in developing countries (Preuss *et al.*, 2006 and Kolk *et al.*, 2010). It is acknowledged also that CSR is a strategic activities used mostly by firms in developed countries (Azmat and Ha, 2013 and Kolk *et al.*, 2010) and widely by foreign firms operating in developing countries (Kuada and Hinson, 2012). Besides, literature has shown that multinational corporations tend to force their subsidiaries to incorporate CSR practices in their operations (Azmat and Ha, 2012) so as to gain legitimacy, adapt easily to local environment; compete favourably in the local market (Javorcik, 2004) and also to enable them meet some international standards and labour norms and be seen as friendly and humanly centred in their operations, in the eyes of the local people (Frost and Ho, 2005). Again, MNEs are able to improve their social legitimacy and also overcome liability of foreignness through their commitment to CSR in host countries (Campbell *et al.*, 2012). Apart from these, foreign investors are noted as diffusers of innovative practices to host firms (Bellak, 2003), thus increasing their chances of performing better in CSR than non-FDI based firms (Osabutey and Debrah, 2012, Lehnert, *et al.*, 2013).

Theoretically, however, the relationship between the inflow of FDI and host firm economic activities have generally been inconclusive. While some hold the view that FDI largely impacts positively on host firms (Vernon, 1966 and Caves, 1974), others argue that in the long run FDI has a negative impact on host firms (Fan, 2002 and Yamin and Sinlovics, 2009). For instance, on the FDI-firm value link, it is argued that where the multinational firm has specific firm advantages which are non-transferable across borders, chances are great that the specific advantages endowed with the host firm will rather be siphoned by the MNE especially if the motive of the FDI is for strategic assets seeking thus destroying the host firm's value (Verbeke, 2009). Besides, it is

believed that FDI based firms face disadvantages relative to non-FDI based firms operating in host countries. These disadvantages are noted to be in the form of all additional costs incurred by foreign firms operating in markets which costs the local firms will not incur in their operations thus leading to a liability of foreignness (Campbell, *et al.*, 2012 and Mezias, 2002). For instance, FDI based firm have a higher possibility of facing comparative disadvantages such as language barrier, cultural barrier, unfamiliar institutional regulations and political hostility thus predisposing them to a lot of costs which certainly have negative consequences on their firm values.

Again it is argued that non-FDI firms are more stable and more futuristic than FDI based firms in host countries (Aoki, 2001). FDI based firms are short-sighted and highly driven by short term profits thus will pursue less of CSR than non-FDI based firms (Ahamadjian and Robbins, 2005). Besides, CSR performance of FDI firms is determined by the sector in which FDI is attracted to in the host country. Where FDI moves into the non-extractive industry no significant improvement is noted in CSR performance of such firms (Campbell, *et al.*, 2012). On the FDI-firm innovation link, product life cycle theory argues that MNEs spend more on innovation in their activities at the introductory stage of the firm's life cycle before moving into host countries at the mature stage (Vernon, 1966). Thus less is spent on R&D in the host firm. Similarly, pull factor theory suggests that some MNEs move into host firms with the aim of learning and adopting some superior technologies that exist in the host firm but are lacking in the MNE head office (Dunning, 1995). These theories thus suggest that FDI inflows to host firms will impact negatively on the host firm's innovative activities.

In addition, a greater portion of empirical studies in the developing world have focused more on understanding the relationship between FDI and macro-economic variables to the neglect of the micro-variables (see: Asiedu, 2002, Akinlo 2004; Alfaro *et al.*, 2004; Ayanwale, 2007; Ayayi, 2006; Adjasi *et al.*, 2012 etc.). Hence the debates surrounding FDI and firm economic activities such as firm value, firm innovation and firm corporate social responsibility (CSR) performance are far from reaching a consensus.

The situation is much more disturbing in Sub-Saharan Africa (SSA) because only a handful of studies have ventured into the subject matter with very mixed findings (see: Bwalya, 2006, Abor, 2010; Waldkirch and Ofosu, 2010 and Mebratie and Bedi, 2013). Despite of this theoretical and



empirical dilemma, the attraction of FDI has been a priority in most developing regions of the world, of which Africa is of no exception.

Most African countries have opened up their economies since the 1990's through reforms, thus permitting repatriation of profits by foreign investors, granting of tax exemptions, and tax holidays to foreign investors (UNCTAD 1997). A congenial environment for FDI flows has also been created by way of trade liberalization, improvements of the legal institutions, telecommunication networks and transportation infrastructure, so as to attract FDI into the continent (World Economic Forum, 1998). The renewed confidence created by the benefits of FDI, has led many countries that were restrictive in their policies to be more open towards FDI in recent times (Safarian, 1999). The inflow of FDI is expected to boost access to capital, transfer technology, and enhance managerial skills and thus leading to economic growth for the host countries.

The adoption of these FDI friendly policies has led to an ever-increasing pace in FDI in recent times (Alfaro *et al.*, 2004). FDI inflows to developing countries have increased geometrically in recent times, though highly skewed towards Asia and Latin America (UNCTAD, 2011). Total annual FDI inflows in the developing world, for instance, rose from \$114.9 billion in 1999 to over \$625.3 billion by the year 2010. Out of these total annual inflows, Asia and the Latin America alone received over 70% while less than 10% went to Africa. Despite of the very insignificant inroads made by Africa into the percentage of the total FDI market in the developing world, FDI is gradually increasing steadily in Africa (UNCTAD, 2011). For instance, the inflows into Africa were less than \$7 billion per annum before the year 2000. This figure rose to an average of \$30.7 billion per annum from 2000 to 2009. This further increased to \$43.6 billion in 2010 and the rise continued until 2012 where a flow of \$55.2 billion was recorded. It however, dropped to \$52.2 billion in 2013 but returned to a higher figure of \$58.3 billion in 2014 (UNCTAD, 2016).

Notwithstanding the public interest and policy importance of FDI flow to firms in SSA, less is known empirically about FDI and its impact on firm value, CSR performance of firms and firm innovation. A recent survey by UNIDO on the perception of domestic firms in SSA regarding the inflow of FDI into their countries, presented mixed results. This can be seen in the table 1.1.

Table 1.1: The net effect of inward FDI on domestic firms SSA

Country	Positive	Negative	No effects	Observations
Burkina Faso	41.1	26.0	32.9	73
Burundi	35.5	27.3	37.2	121
Cameroon	37.6	27.8	34.6	133
Cape Verde	33.1	31.6	35.3	272
Ethiopia	27.4	20.2	52.4	431
Ghana	27.7	31.9	40.4	235
Kenya	25.9	19.3	54.7	316
Lesotho	<b>7.8</b>	<b>39.2</b>	52.9	102
Madagascar	50.0	20.6	29.4	102
Malawi	44.0	25.3	30.7	75
Mali	25.6	25.1	49.2	195
Mozambique	<b>82.5</b>	<b>6.3</b>	11.1	189
Niger	24.6	29.2	46.2	65
Nigeria	37.7	23.0	39.3	387
Rwanda	27.8	24.1	48.1	108
Senegal	42.8	23.0	34.2	152
Tanzania	32.4	24.7	42.8	299
Uganda	25.8	27.3	46.9	403
Zambia	47.3	33.5	19.2	203
Sub-Saharan Africa	34.4	24.9	40.7	3861

Source; Boly *et al.* (2013)

In total the domestic firms that benefit from the presence of FDI in their countries are more than those that do not benefit from the presence of FDI (34.4% against 24.9%). Despite this, some countries like Lesotho, Ghana, Niger and Uganda actually recorded more firms not benefiting from the presence of FDI than those benefiting. Though Boly *et al.* (2013) have associated these different impacts of FDI on local firms to firm specific characteristics and prevailing macro-economic environment in the various countries, an empirical study based on real firm data rather than firm perception data is seriously needed to understand the impact of FDI on firms in SSA. This study is intended to fill this literature gap by investigating empirically the link between FDI flows and the economic activities of host firms in selected countries in SSA.

## 1.2 PROBLEM STATEMENT

From a theoretical standpoint, there is a debate on the impact of FDI inflows to host firms. This debate is broken down into three strands: the link between FDI and firm value, FDI and CSR performance and FDI and firm innovation. Though the debate between FDI and firm value is tilted heavily towards the positive impact of FDI on host firms, the debate is not completely conclusive. While some studies have argued that the inflows of FDI to host firms have very positive and beneficial outcomes to the firms (Dunning and Caves 1974 and Bellak, 2004), other studies argue that FDI inflows to firms is not productive in the long run (see: Koning, 2001; Fan 2002; Yamin and Sinkovics, 2009 and Waldkirch and Oforu, 2010). The former group believes that FDI is good since it increases firm performance, transfers managerial skills, grants access to external markets, reduces unemployment and reduces capital constraints of firms. On the other hand, the latter school of thought thinks FDI is counterproductive at the firm level. They also argue that capital transfer out of the firm by foreign investors could outweigh the initial inflow of capital.

On the link between FDI and firm CSR performance, there is a theoretical dilemma. While Goyal (2007), Suzuki *et al.*, (2007) and Mehta (2003) believe that FDI leads to enhanced CSR performance on target firms, others such as Reinhardt *et al.*, (2008) and Ahamadjian and Robbins (2005) argue contrary that FDI has a negative impact on target firm's CSR performance. They believe that foreign investors are mostly institutional investors and thus are very short-sighted in their investment. They would not want to commit their investment to CSR activities, which may give returns in the long run.

Similarly, one school of thought argues that FDI leads to firm innovation in target firms. They believe that through FDI technical knowledge and high efficiency are transferred to target firms causing these firms to innovate more than non-FDI firms. They think that innovation is gained through FDI, as target firms receive more capital, which enable them to increase their expenditure on research and development activities (Caves, 1974; Rodrigue-Clare, 1995; Blomstrom and Kokko, 1998, and Garcia *et al.*, 2013). On the other hand, Dunning (1995), Vernon (1966) and Blind and Jungmittag (2004) think that some foreign firms may be attracted to host firms, as they might have a more sophisticated level of innovation which these foreign firms want to tap into. The foreign firm would rather transfer the innovative parts of the host firm to themselves. Besides, they argue that MNE's move into host countries at the time when they are in a mature stage of

development and hence only specific modifications are made to products or processes as opposed to entirely fresh innovations.

Empirical studies have also tilted towards unearthing the link between FDI and macro-economic variables. Most studies of FDI are geared towards why investors undertake FDI (Dunning, 1988; Buckley and Clegg, 1991), where FDI goes (Dunning 1998), when FDI moves (Buckley and Casson 1981), and channels through which FDI enters an economy (Gatignon and Anderson 1998). The studies that have so far ventured into the firm level debates have been very inconclusive and conflicting. For instance, while Caves, (1974), Globerman, (1979), Dimelis and Louri (2002) and Karparty and Lundberg (2004) have established that there is a positive relationship between FDI inflows and firm performance, others such as Blomstrom and Wolf (1987), Haddad and Harrison (1994), Aitken and Harrison (1999) and Girma (2002) have found no evidence of high firm performance with the inflows of FDI.

Similarly, whereas Bertchek (1995), Lin and Lin (2009), Cheung and Lin (2003) established a positive relationship between FDI and firm innovation, Maaso *et al.*, (2012), Stiebale and Reize (2010) and Garcia *et al.*, (2013) found a negative relationship. Though empirical evidence so far on the link between FDI and firm CSR performance have mainly been positive (see: Chapple and Moon, 2005, Suzuki *et al.*, 2010 and Bardy et al, 2011), Amran and Devi, (2006) and Scholtens (2007) found evidence to the contrary where FDI leads to negative CSR performance or has no impact at all.

Narrowing this analysis to Africa and SSA in particular, fewer studies exist on the subject matter. Waldkirch and Oforu (2010) carried out their study on the Ghanaian manufacturing industry and realized that FDI has a negative impact on firm performance while another study by Abor (2010) established a positive relationship between FDI and firm performance in the same economy. In Zambia, Bwalya (2006) arrived at a negative impact whereas a recent study by Mebratie and Bedi (2013) in South Africa found no relationship between FDI and labour productivity. Apart from the mixed findings arrived at by these limited studies in SSA, the findings of these studies can hardly be generalized as a case for the whole SSA region since all these studies are country specific in nature.

These unresolved debates in the literature, provide gaps and a motivation for this study. Besides, it will be the first study to explore empirically the link between FDI and CSR and FDI and firm innovation in SSA.

### **1.3 OBJECTIVES OF THE STUDY**

Generally, the main objective of the study is to empirically investigate the link between FDI and firm economic activities in some selected African countries. The specific objectives of the study are to:

1. Examine the relationship between FDI and firm performance
2. Investigate the link between FDI and firm CSR performance
3. Determine the impact of FDI on firm innovation

### **1.4 RESEARCH QUESTIONS**

Following the background of the study given above, the study is set out to address the following set of questions:

1. To what extent does FDI inflow to firms enhance the value of the firms?
2. Do firms with FDI invest more in CSR than non-FDI owned firms?
3. What impact has FDI got on firm innovation?

### **1.5 RATIONALE FOR EACH ESSAY**

The three standalone but interwoven empirical essays have been written out of the objectives and the research questions. Essay one which investigates whether or not FDI leads to high firm value is premised on the theoretical underpinning that productivity is depended on land, labour, capital and entrepreneurship. It is believed that firms that are able to raise funds from foreign sources would have less financial constrains than those that do not, and hence FDI would boost their capital flow. Besides, FDI grants part ownership or complete ownership of the firm to foreign investors who get control through voting rights or board membership. There is then the argument that foreign ownership or control of firms leads to more efficiency, which will increase productivity. Therefore, FDI is expected to induce high firm performance in firms that host them.

Essay two studies the impact of FDI on firm CSR performance. CSR is noted to project a firm's image if the firm is doing very well in its CSR. This thus creates a high reputation for such a firm

in the minds of its customers and stakeholders. It is also believed to enhance the efficiency of employees, leading to an overall better performance for the firm. Linking this to the debate that FDI enhances firm performance, one would expect that firms that receive FDI would perform better as far as CSR indicators are concerned, since such firms would want to enhance productivity. Besides, most firms in developed countries perform better in their CSR and given the fact that the majority of FDIs in Africa flow from developed countries, one would expect their inflow to local firms would yield better CSR indices. On the contrary, there are others who think that foreign investors are short sighted in their interest and hence would prefer to concentrate on realizing short time financial profit as opposed to the building of an image for the firm which is more futuristic. Thus, their decisions would not lead to better performance of CSR. These theories and arguments would need to be tested.

The last essay is built on the theory that FDI inflows to local firms lead to innovation, be it product or process innovation. Theoretically FDI is believed to transfer innovation to recipient firms. Though there are studies that have confirmed this (see: Bertscheck, 1995, Cheung and Lin, 2003, and Iacovone *et al.*, 2008), others have not been able to find any support to this (Girma *et al.*, 2005 and Kinoshita, 2000). Evidence in the context of SSA is seriously lacking to the best of our knowledge, hence the need for this study.

## **1.6 CONTRIBUTIONS OF THE STUDY**

The contributions of this thesis are in four main categories. First it provides new dimensions to the literature on FDI and firm activity by addressing the critical issue of endogeneity between FDI and firm activity an issue usually ignored in the literature. For instance, theories on the FDI-Firm value link have been very mixed and divergent. A host of scholars argue that FDI impacts positively on firm value through the infusion of superior technology, good governance, better managerial practices and capital enhancement (Gelubcke, 2012 and Yang *et al.*, 2013). On the contrary however some believe that, FDI led firms have greater tendencies of destroying firm value rather than enhancing it as FDI led firms are disadvantaged with the tag of being a foreigner and hence will have cultural and compliance problems in the host country thereby increasing their operational cost (Campbell *et al.*, 2012 and Mezas 2002). Yet other group holds the view that FDI firm value link is bi-directional in nature. Whereas FDI impacts positively on firm value, firm value on the

other hand can also have an impact on the inflows of FDI into host firms (Almeida, 1996). The argument for firm value being a signal for FDI inflow is based on the premise that firms that are performing well and have higher values are well resourced and better positioned in attracting FDI than less performing firms. High performing firms are well grounded in good corporate governance principles, research and development and have good capital base. Thus such firms are not only able to advertise their products or services globally, but they also have better structures to support the interest of every investor including foreign investors. There is therefore self-selection bias where only the high performing firms have the chance of attracting FDI. Hence high value firms have the greater tendencies of attracting more FDI than low performing firms. This means that the relationship between FDI and firm value is endogenous and hence any study that does not control for this effect will be producing spurious and bias results. The understanding of this link in FDI and firm value is further blurred with varied empirical findings in both advanced and developing economies (see: Yasar and Paul, 2007; Suyanto *et al.*, 2012; Abor, 2010 and Waldkirch and Ofofu, 2010). This mixed results could be attributed greatly to the issue of endogeneity which most of the previous studies have ignored.

Similarly, FDI-innovation link has been debated theoretically with diverse views. While some school of thought believes that inflow of FDI impacts positively on the innovative activities of host firms through enhanced capital base, superior technology and greater engagement in research and development by FDI led firms (see: Terk *et al.*, 2007 and Fombang and Adjasi, 2018), other scholars argue that FDI retards innovation in host firms as most multi-national firms move into host firms at the point that they(MNEs) no longer conduct new research and development or move into host firms that have better innovation so as to rather learn and adopt such superior innovations into their home firm (Vernon, 1996, Garcia *et al.*, 2013 and Barasa *et al.*, 2018). This affects the host firm's ability to innovate negatively. Some scholars think innovation also leads to the inflow of FDI into host firms as FDI led firms move into host firms that have superior innovations so as to learn and adopt same for their home firms (Dunning, 1995). Besides, innovative firms leverage on their innovativeness to reach out more to multi-national enterprises and foreign investors using more efficient, effective and dynamic approaches thus creating a more awareness on their existence which lead them to building great images for themselves in the sight of foreign investors. The implication here again is that, there is self-selection bias as multi-national firms consciously move into only host firms that have superior innovations. This therefore presents a clear

endogeneity issue which also must be addressed in such studies. Besides, endogeneity could arise as a result of measurement errors or omitted variables in the modelling so it is appropriate to control for it in order to produce robust and consistent results from the estimations.

In this case such endogeneity must be controlled for in order to determine clearly the theoretical link between FDI and innovation. Unfortunately, few firm level studies control for this. Our study thus departs from the previous studies by controlling for endogeneity in both FDI-firm value and FDI-innovation links using a robust system GMM and Instrumental Variable estimation techniques respectively. Our study by doing so has extended the literature in the FDI-firm value and FDI-innovation links. Thus we argue that, though FDI is found to be a value enhancer and a catalyst for innovation in firms, these relationships are endogenous and hence must always be controlled for in order to understand clearly such links.

Second, it is the first study to empirically examine the relationship between FDI and CSR in a broader way by using a unique and comprehensive measure of CSR from the Public Investment Corporation (PIC) Governance Survey in South Africa. By definition, CSR is the responsibility of satisfying both shareholders and stakeholders of a business simultaneously. Therefore, to capture the effect of FDI on CSR all issues of shareholder and stakeholders must be captured in CSR measures. Failure to do so results in possible spurious or narrow relationships. For instance, the effect of FDI on one dimension of CSR e.g. governance does not tell us anything about the importance of social and environmental CSR effects of FDI unless these are equally investigated. To examine properly the link between FDI and CSR performance in firms, proper considerations must be given to the measurement of CSR so as to ensure that all dimensions of CSR are captured fully.

Unlike previous studies (for example Goyal 2006; Frynas, 2008; Gonzale-Perez *et al.*, 2011; Margolis and Walsh, 2013 and Nyuur *et al.*, 2016), where CSR is measured by using only governance, or only legal or only environmental or only philanthropic issues or a combination of them in a limited manner, the PIC data comprehensively captured CSR under three broad areas: governance, social and environmental. Under governance, issues captured include board composition, the performance of the board of directors, the qualification and performance of executive management, remuneration of board of directors, treatment of shareholders, internal control mechanisms, disclosure and reporting, corporate culture and reports on sustainability. The



social aspects include: the firm commitment regarding the UN Global Compact, human right issues, ownership and employment equity, health and safety, corporate responsibility and percentage of disabled employees. Finally, on environment, the survey had questions on total greenhouse gas emissions, mitigating factors on environmental pollution, environmental performance of the firm's contractors and suppliers, adoption of environmental friendly technologies, and promotion of environmental responsibility amongst other issues.

Due to the comprehensive nature of our data, we have been able to examine CSR in a whole and further decomposed it into its sub-components for proper understanding of the link. For instance, we noted from our results that combining all the indicators of CSR in our estimation, FDI is found to impact positively on CSR. However, when we decomposed our CSR components into only governance, social and environmental performance, while FDI still impacts positively on social and environmental indicators, it has no impact at all on governance indicator. This implies that any study using only governance as an indicator of CSR will conclude on the theory that FDI has no significant impact on CSR performance of firms. Studies that use either social or environmental performance as indicator of CSR will conclude contrary on the theory that FDI impacts positively on CSR. This has accounted for why varied results have been found by previous studies as some have failed to capture all the dimensions of CSR in their studies. By using this comprehensive measure of CSR, we argue that the link between FDI and CSR is positive. However, this positive link is realised when all the indicators of CSR are present in the measure of CSR. We also control further for contemporaneous cross-correlation effects from the firms in the panel set as well as endogeneity between FDI and CSR.

Third, the study presents new evidence which shows that context matters in investigating the innovation impact of FDI. The theoretical and empirical inconclusiveness on the innovation impact of FDI is clearly drawn on contextual lines as it is seen from the cases of the effect of FDI flow on host firm innovation in South Africa and Nigeria. We find that whereas FDI impacts strongly on both product and process innovation in Nigeria, we have no evidence of any impact on both product and process innovation in South Africa. This is where the issue of context becomes pertinent. Although Nigeria and South Africa are in the common set of developing countries and also African countries, these two countries have different contexts and conditioning factors and structures which emerge in the interplay of any economic activity. For instance, using the case of

firm level activities whereas Nigeria is lacking behind in terms of global innovation index, access to domestic credit, R&D and ICT access, South Africa is well endowed with ICT, domestic credit and relatively better positioned on R&D and innovation. These different levels of endowments and conditioning of the same factors will result in different outcomes in firm level activities in the two countries. For example, in South Africa, given the favourable ranking in innovation index (16th position globally), South African host firms will be relatively more endowed with innovation outcomes therefore FDI inflow into host firms in South Africa will have no significant impact on firm innovation. This goes to support both the pull factor theory and distance to technology frontier theory. Whereas the pull factor theory argues that MNEs get attracted to host firms that are well endowed in innovation so as to learn and adopt same into their home firms, distance to technology frontier believes that the greater the innovation gap between host firm and home firms, the greater the desire to learn that innovation. This obviously present no significant impact on host firm innovation since the host firm has superior innovation than the multi-national enterprises or there is a narrow gap between the South African firms and the home firms.

Again, this context issue has got a great interplay in the relationship between our results in the FDI and firm value relationship as seen presented in chapter 3. While FDI has a positive significant relationship with firm value in South Africa and Nigeria using the Tobin's Q, in Ghana, however, there is no significant relationship between FDI and firm value through the Tobin's Q even though there is a positive relationship through the ROA. This is possibly the case as South African and Nigeria have more matured and vibrant stock markets than Ghana and some other African countries. Thus the use of stock market measure though good may not be able to measure accurately firm value in economies where their stock markets are not properly developed. We therefore argue that that context is very critical in examining clearly the link between FDI and innovation in Africa. Thus studies that pool countries especially in Africa together for the purpose of investigating this link may not observe the link clearly.

Furthermore, unlike most studies which use R&D and patents to measure innovation we create an innovation index using a multiple correspondent analysis (MCA) approach which captures innovation holistically. This approach captures the time lag problems associated with previous methods. The difficulties of using proxies such as patent and R&D as measures of innovation are very well documented (see: Beveren and Vandenbussche 2010 and Fombang and Adjasi, 2018).

One of the problems of using proxies such as patent and R&D is that these proxies are innovative inputs and not innovation itself or output and thus may require time to yield innovation itself. Such proxies therefore require a considerable time period and may not be evidenced in a short period. This further implies that using such input measures for cross sectional and short time series data is not appropriate and hence one will not be able to observe their impact clearly in such studies. Again using the input measures as proxies for innovation assumes strongly that such inputs lead to innovation in the long run. However, this does not hold in all situations. For instance, acquiring a patent right or spending money on R&D does not necessarily result in innovation. Acquiring patent right but not able to use that patent effectively and efficiently or spending resources on R&D with no clear research vision and strategy may yield no innovation in the long run. We therefore depart from previous studies by employing output measures collected by World Bank Enterprise Survey Dataset in our innovation index creation.

## **1.7 ORGANIZATION OF THE WORK**

As indicated earlier, the study is a composite of three separate but related empirical articles structured into six chapters. The essays are related in the sense that all of them are woven around FDI which is the central theme for the thesis. Chapter one is the general introduction of the study which consists of the introduction and background, problem statement, motivation for the study, objectives and research questions of the study and finally the contributions of the study. The second chapter reviews the trends of FDI inflows to SSA, providing a contextual stage for the empirical chapters to follow. The relationship between FDI and firm value is explored in chapter three whilst chapter four focuses on the impact of FDI on CSR performance. Chapter five is devoted to the investigation of FDI impact on firm innovation while the general summary, conclusion, and recommendations of the study are presented in chapter six.

## CHAPTER TWO

### OVERVIEW OF FDI IN AFRICA: SOME STYLISTED FACTS

#### 2.1 INTRODUCTION

This chapter reviews and analyses the nature and trend of FDI flows to Africa. The various trends examined here include: the destination countries in Africa and the types of FDI flowing into the region. The sectorial distributions of FDI flows to Africa, as well as the origins of the FDI into Africa, are also discussed. The chapter sets the contextual background for the empirical chapters to follow.

FDI into Africa from the 1970's to the 1980's had not been very successful, despite great efforts made by governments of various countries to attract FDI (Te Velde, 2001). Policies such as liberalisation, deregulation, privatisation and macro-economic policies were pursued during this period across the continent (World Bank, 1997; IMF, 1999). A change in policy direction was brought in during the late 1990's by focusing on improving the investment climate, better governance, economic growth, capital accumulation and economic diversification (Te Velde, 2001). This has reflected greatly in the massive improvement in the attractiveness of Africa as a destination for investors in the recent times as shown in table 2.1 below. It is even further believed that Africa will be the most attractive destination for investors in the near future (Ernst and Young, 2014). All these possibly led to a higher and consistent increase in FDI flows to the continent since the beginning of the 21<sup>st</sup> century (World Investment Report, 2008).

These favourable stimulants have been pursued vigorously by many African countries due to the immense benefits arguably associated with the inflows of FDI (Adjasi *et al.*, 2012). Te Velde (2001), however, argued that FDI comes with both benefits and costs. Thus, when deciding which policies to adopt to attract more FDI, policy makers must evaluate the benefits against the costs. It is therefore appropriate for micro-studies to be carried out to ascertain the impact of FDI on firm economic activities in Africa. In doing so, it is appropriate to analyse the trend of the flows into Africa compared with other regions, the trend in the sectors that receive the FDI, the countries that

are major players in FDI attraction, the types of FDI that enter the continent and finally where these flows are originating.

Table 2.1: Africa's Relative Attractiveness Position

<b>Region</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>
Asia	1	1	1	2
North America	2	2	4	1
Western Europe	3	4	7	4
Middle East	4	6	8	6
Oceania	5	3	2	3
Latin America	6	7	3	5
Eastern Europe	7	8	9	8
Africa	8	5	5	2
Central America	9	9	6	9
CIS	10	10	10	7

Source: Ernst and Young's 2014 Africa Attractiveness Survey

Note: 1 is most attractive, 10 less attractive

## 2.2 TRENDS OF FDI FLOW IN AFRICA

As indicated earlier, FDI flow into Africa was abysmal until the beginning of the 21<sup>st</sup> century, when a massive increase was recorded in its flow. From table 2.2 below, one can see that the inflows into the region were less than \$7 billion per annum before the year 2000. This figure rose to an average of \$30.7 billion per annum from 2000 to 2009. This further increased to \$43.6 billion in 2010 and continued to rise until 2012, when an inflow of \$55.2 billion was recorded. It, however, dropped to \$52.2 billion in 2013 but returned to a higher figure of \$58.3 billion in 2014. Another drop has been recorded in 2015, with a figure of \$54 billion. The drop in 2012 for the continent can be attributed to the drops recorded in North Africa and Middle Africa. While North Africa recorded a reduction from \$15.6 billion in 2012 to \$12.7 billion in 2013, flow to Middle Africa dropped from \$1.8 billion in 2012 to as low as \$0.5 billion in 2013. The drop in these sub-regions can be attributed to the unstable political environment recorded in these places during the said period.

However, with the exception of these two sub-regions (Middle Africa and North Africa), all the other sub-regions experienced some decline in the flow of FDI in 2015 that led to a total decline for the whole continent. West Africa experienced the biggest drop in 2015. The drop in FDI flow

in 2015 could be attributed to the drop in the prices of commodities and oil and gas, which receive the highest capitalisation flow of FDI in Africa. Interestingly, while the flow of FDI to the whole world also showed a decline in 2013 just like Africa, in 2015 both the developing world and the world as a whole recorded increased FDI flows, except for Africa, Latin America, and the Caribbean regions where FDI inflows declined.

On average, the developing economies of the world as a whole, accounted for about 37.6% of the world inflows of FDI. Africa's share of the world FDI flows is only 3.28%, despite its improvement in FDI attraction over the years, whereas the Asia Pacific region, and Latin America and the Caribbean, have a share of 24.07% and 10.71% respectively of the world FDI, as shown in table 2.3. Therefore, in comparison with the developing economy as shown in figure 2.1, Africa's share is only 9.32% while Asia and the Pacific, and Latin America and Caribbean, accounted for 62.87% and 29.70% respectively. It is worth noting that whereas Africa and Latin America and Caribbean both showed a decline in 2015, Asia and the Pacific showed an increase. This same pattern could be observed in the year 2013. It implies that while the African and Latin American and Caribbean FDI inflows are more vulnerable to the world commodities markets, Asia and the Pacific inflows are not influenced by the commodities market to the same extent. It also means that FDI inflows for Africa, Latin America and Caribbean are more into the primary sectors of their economies.

Table 2.2: FDI flows and Shares to developing regions, 1970-2015(Billions of US Dollars)

	Average per period				2010	2011	2012	2013	2014	2015
	1970 to 1979	1980 to 1989	1990 to 1999	2000 to 2009						
World	23.8	92.9	397.7	1,080.5	1,388.8	1,566.8	1,510.9	1,427.2	1,276.9	1,762.2
DE	5.8	20.5	114.9	272.7	625.3	670.1	658.8	662.4	698.4	764.7
Africa	1.1	2.2	6.8	30.7	43.6	47.8	55.2	52.2	58.3	54.1
SSA	0.9	1.3	4.8	19.9	29.9	41.9	41.9	41.1	47.6	42.9
EA	0.1	0.2	0.9	3.3	6.7	10.1	14.5	14.8	16.8	13.9
MA	0.2	0.3	0.7	3.9	4.3	4.2	1.8	0.4	10.5	14.0
NA	0.2	0.9	2.0	12.1	15.7	7.5	15.5	12.8	12.0	12.9
SA	0.05	0.1	1.0	4.9	4.8	6.9	6.4	9.6	6.8	3.3
WA	0.5	0.7	2.1	6.5	12.0	18.9	16.8	14.5	12.1	9.9
LAC	2.6	6.3	37.6	81.0	167.1	193.3	190.5	176.0	170.2	167.5
AP	1.9	11.7	70.2	225.0	412.4	426.7	409.5	431.4	467.9	540.7

Source: Computed from UNCTAD Database, 2016

*Note: DE is Developing Economy, SSA-Sub-Saharan Africa, EA-Eastern Africa, MA-Middle Africa, NA-Northern Africa, SA-Southern Africa, WA-Western Africa, LAC-Latin America and the Caribbean, AP-Asia and the Pacific*

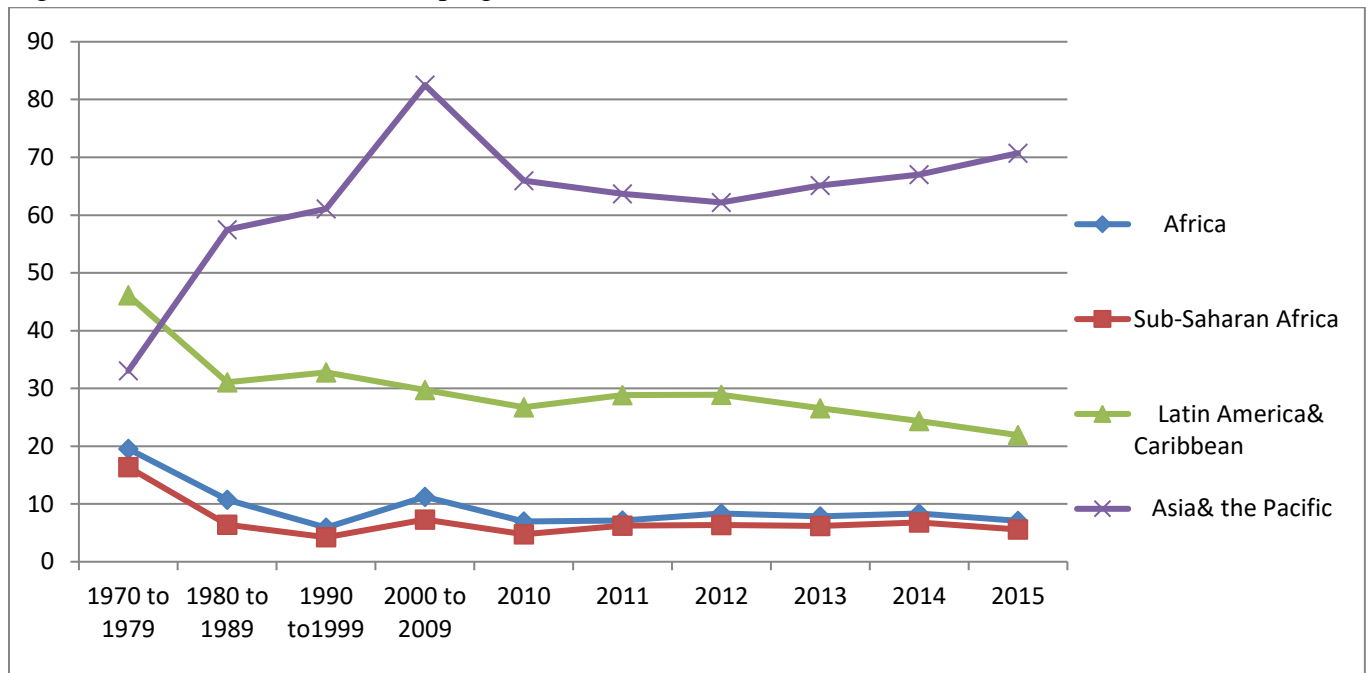
Table 2.3: Share of country groups in world FDI (%), 1970-2015

	Average per period				2010	2011	2012	2013	2014	2015	1970-15 Average
	1970 to 1979	1980 to 1989	1990 to 1999	2000 to 2009							
DE	24.18	22.06	28.88	25.24	45.03	42.77	43.60	46.41	54.70	43.39	37.63
Africa	4.72	2.37	1.71	2.84	3.14	3.05	3.65	3.65	4.57	3.07	3.28
SSA	3.96	1.41	1.22	1.84	2.15	2.68	2.77	2.88	3.72	2.43	2.51
EA	0.53	0.16	0.23	0.30	0.48	0.64	0.96	1.03	1.31	0.79	0.64
MA	0.73	0.36	0.18	0.36	0.31	0.27	0.12	0.03	0.82	0.80	0.40
NA	0.77	0.96	0.51	1.12	1.13	0.48	1.03	0.89	0.94	0.73	0.86
SA	0.19	0.12	0.26	0.46	0.35	0.45	0.42	0.68	0.54	0.19	0.37
WA	2.19	0.76	0.53	0.60	0.86	1.21	1.12	1.02	0.95	0.56	0.98
LAC	11.15	6.85	9.46	7.51	12.03	12.34	12.61	12.33	13.33	9.51	10.71
AP	7.99	12.68	17.64	20.82	29.69	27.23	27.11	30.23	36.64	30.69	24.07

Source: Computed from UNCTAD Database, 2016

*Note: DE is Developing Economy, SSA-Sub-Saharan Africa, EA-Eastern Africa, MA-Middle Africa, NA-Northern Africa, SA-Southern Africa, WA-Western Africa, LAC-Latin America and the Caribbean, AP-Asia and the Pacific*

Figure 2.1: Share in Total Developing Countries (%), 1970-2015



Source: Computed from UNCTAD Database, 2016

### 2.3 FDI DESTINATION IN AFRICA

In SSA, FDI inflows by project increased from 226 projects in 2003 to 621 projects per year in 2013 (Figure 2.2). This shows a consistent increase in the number of projects to SSA over the period. With regards to various sub-regions, while North Africa had an increase from 164 projects in 2003 to 181 projects in 2012, it recorded a sharp drop in the number of projects in 2013 to 129 projects. Southern Africa is the leader in the number of FDI projects received annually followed by West Africa, East Africa and Central Africa. It is noted that whereas West Africa and East Africa recorded a steady and consistent growth in the number of FDI projects over the period, Southern Africa and Central Africa on the other hand experienced a decline in the number of FDI projects only in 2013. They too showed steady growth between 2003 and 2012.

The West African inflows are heavily dominated by Nigeria and Ghana, with Nigeria being the largest recipient. While Nigeria's heavy inflows are attributable to its large market size and oil reserves, Ghana's inflows are influenced by its abundant natural resources, strong investment climate and its stable and well-established democracy (Ernst and Young, 2013). In Southern Africa, inflows are led by South Africa due to its economic power. Being the second largest



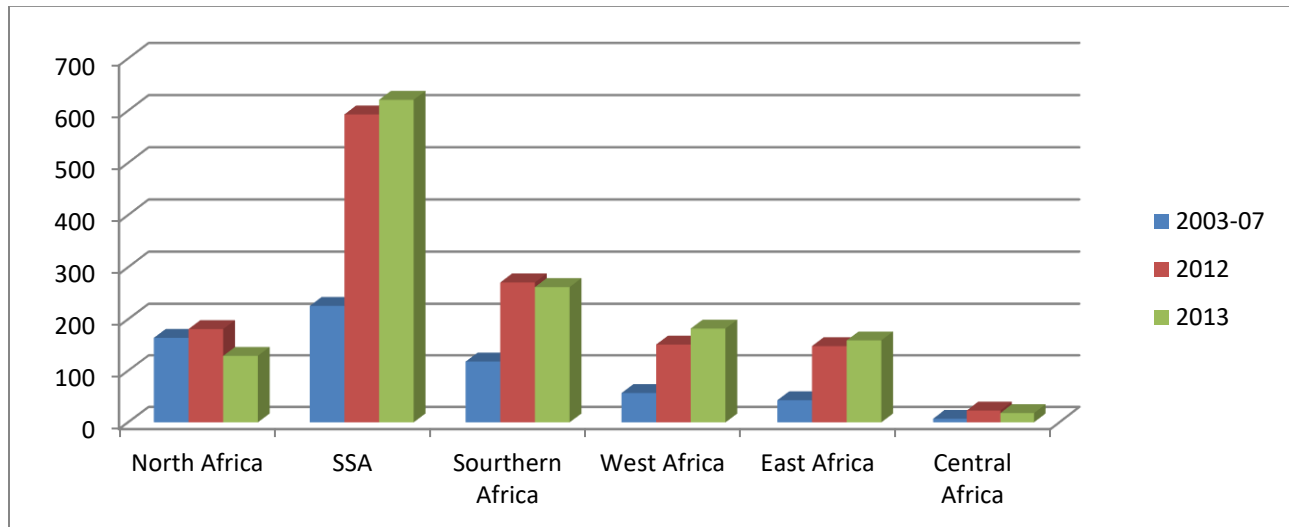
recipient in SSA after Nigeria, South Africa is the most attractive destination of all investors coming to the continent. Zambia and Mozambique have also experienced rapid economic growth in recent times, thereby becoming attractive to foreign investors (Ernst and Young, 2014). The situation in East Africa is a bit unique as far as its investor base is concerned. Unlike other African sub-regions, which have Western Europe as the dominant investors, African countries are leaders in investment in East Africa, with Kenya being both the highest investor and recipient in the area (Ernst and Young, 2014). Its attractiveness factors lie in its market size, recent discoveries of natural resources and market integration among countries in the sub-region.

Among the top countries that receive FDI in Africa by measure of number of projects, South Africa records the highest with an average of 114.8 projects per annum, followed by Morocco, Kenya, Egypt, Nigeria and Ghana. The lowest number of projects is recorded by Uganda with only 15 projects per annum. On the capitalisation of flows measured in US dollars, Nigeria recorded the highest, followed by Egypt, South Africa, Morocco, Mozambique, Tunisia, Ghana, Algeria, Congo and the Democratic Republic of Congo as indicated in Figure 2.3 below. It is observed that while some countries received a lot of FDI projects, the value of those projects are not so significant. For instance, whilst Kenya, Zambia, Tanzania and Uganda are ranked among the top measured by receiving FDI projects, they have not been ranked in the top 10 receiving FDI by value. Similarly, the Democratic Republic of Congo, Congo, Tunisia and Algeria have been ranked among the top recipients by value but are not ranked among the top recipients by number of projects. The countries that have maintained their dominancy in both measures (by projects and value) are: Nigeria, Egypt, South Africa, Morocco, Mozambique and Ghana. All the dominant countries with the exception of Morocco are either fuel or mineral exporting countries or exporter of both products.

The leading FDI recipients in the region are Nigeria, South Africa, Mozambique, Ghana and Congo. All these countries have a similar pattern in their FDI flow. While they all experienced stagnant growth in FDI inflows during the period of 1970 to 1989, they all saw a massive growth in the average inflows since the 1990. Again, all of them saw a dip in the inflows in 2015 with South Africa and Congo being the most affected. Nigeria is the top recipient with \$2.2 billion per

annum followed by South Africa with \$1.7 billion, Mozambique with \$0.7 billion, Ghana with \$0.6 billion and Congo with \$0.5 billion.

Figure 2.2: FDI by destination region and sub-region (projects)



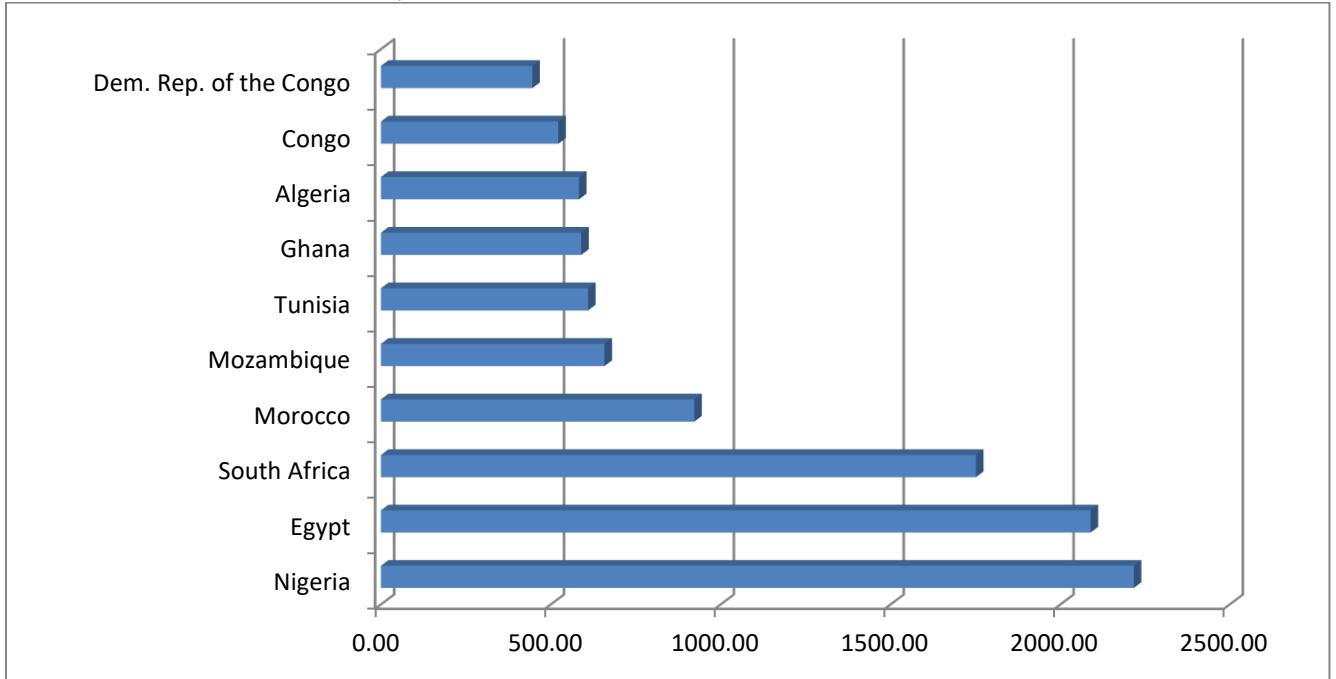
Source: FDI Intelligence

Table 2.4: FDI by destination country (Projects)

	2003-07	2012	2013	2014	2015	Average (2003-15)
South Africa	63	155	142	96	118	114.8
Kenya	12	54	68	48	85	53.4
Nigeria	25	60	58	38	51	46.4
Ghana	12	39	58	27	40	35.2
Egypt	47	60	44	43	59	50.6
Morocco	48	63	41	53	71	55.2
Mozambique	4	25	33	43	29	26.8
Zambia	8	19	25	11	13	15.2
Tanzania	8	32	24	16	20	20
Uganda	8	17	21	9	20	15

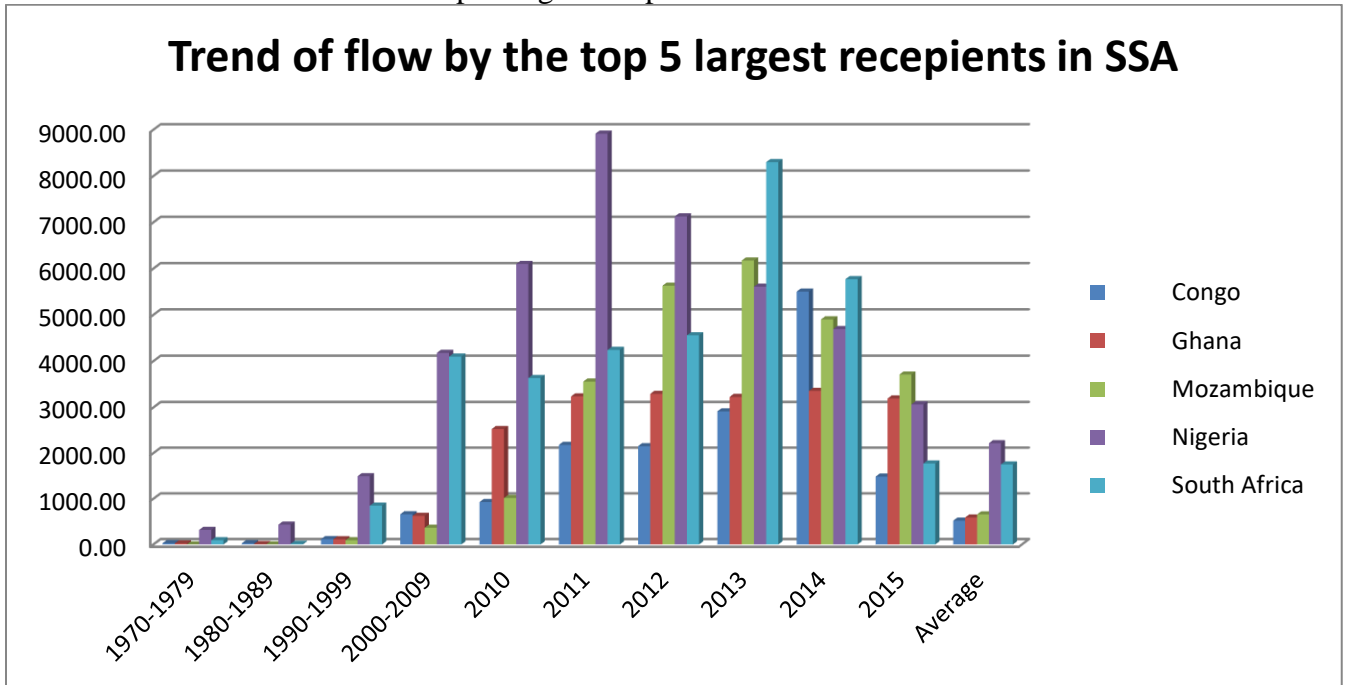
Source: FDI Intelligence

Figure 2.3: Top ten largest recipients of FDI in Africa measured in million US dollars (Average Annual flows from 1970-2015-US)



Source: Computed from UNCTAD, 2016

Figure 2.4: Trend of FDI flow to the top 5 largest recipients in SSA



Source: Computed from UNCTAD, 2016

## 2.4 SECTORIAL FLOW OF FDI IN AFRICA

The flow of FDI into Africa, like other regions, has found its way into several sectors of the economy. The sectors that receive the larger portion of inflows into the region are: Technology, Media and telecommunications (TMT), Retail and Consumer Products (RCP), financial services, business services, Real Estate, Hospitality and Construction (RHC), transport and logistics, Diversified Industrial Products (DIP), automotive and the extractive industry as depicted in table 2.5 and figure 2.5. From figure 2.5, it is observed that there is a shift from the extractive sector to the services industry. For instance, while the extractive sector (coal, oil, gas and mining) accounted for about 42 projects on average from 2003 to 2007, this figure dropped to only 23 projects in 2012 and went up slightly to 26 projects in 2013. On the other hand, TMT rose from 54 projects in 2007 to 161 projects in 2012 and went down a little to 150 projects in 2013. Similarly, RCP rose from 46 projects in 2007 to 100 projects in 2012. This further increased to 131 in 2013. Besides the TMT which tops the sector in receiving the FDI projects, the second largest recipient is the financial sector, which had an average of 97 projects per year. The transport and logistics sector has also been on a steady growth curve in the region. With 19 projects in 2007, it grew to 50 projects in 2013.

The massive growth in the financial sector is as a result of the need of businesses to tap the growing but under-served financial market (Ernst and Young, 2014). The unpenetrated consumer market and improvement in communication infrastructure have encouraged the heavy inflow of FDI into the TMT and RCP sectors. Notwithstanding the drastic decrease in projects in the extractive industry, this sector still accounts for the highest value in terms of FDI investment measured in monetary terms. It accounted for 46% of the total value of all FDI received on average between 2007 to 2013. With a gradual growth in project numbers, the RHC sector is second to the extractive sector in terms of capitalisation. These two sectors receive the largest capital inflows due to their capital intensity.

The dominance of the above sectors in terms of number of projects varies from country to country. As illustrated in table 2.5 below, the countries that have the financial sector dominating FDI flows are Angola, Egypt, South Africa and Ghana. From 2007-2011 Angola was leading in the financial services sector FDI with 15.7%, while in 2012-2013, Egypt topped the sector with 10.2%. In the TMT sector, South Africa has been a leading beneficiary of FDI into this sector in Africa. It

increased its share from 23.7% in 2011 to 24.1% in 2013. The other countries that also have high FDI in this sector are Morocco, Tunisia, Nigeria and Egypt. Expectedly, Egypt, Nigeria, South Africa and Morocco have been the highest recipient of RCP based FDI in the region.

In the mining and metals sector, South Africa, Ghana, Botswana and Zambia have been the leaders since 2007. In respect of coal, oil and natural gas sector, Egypt, South Africa, Nigeria and Mozambique are the countries that benefit most from FDI into the continent. It is interesting to note that South Africa and Egypt are the only countries that have topped the beneficiary list of some of the sectors consistently since 2003. Whereas Egypt has maintained its dominancy throughout in coal, oil and gas sector, South Africa attracted the most FDI in the following sectors since 2003: TMT, business services, mining and metals, transport and logistics, DIP and automotive sectors.

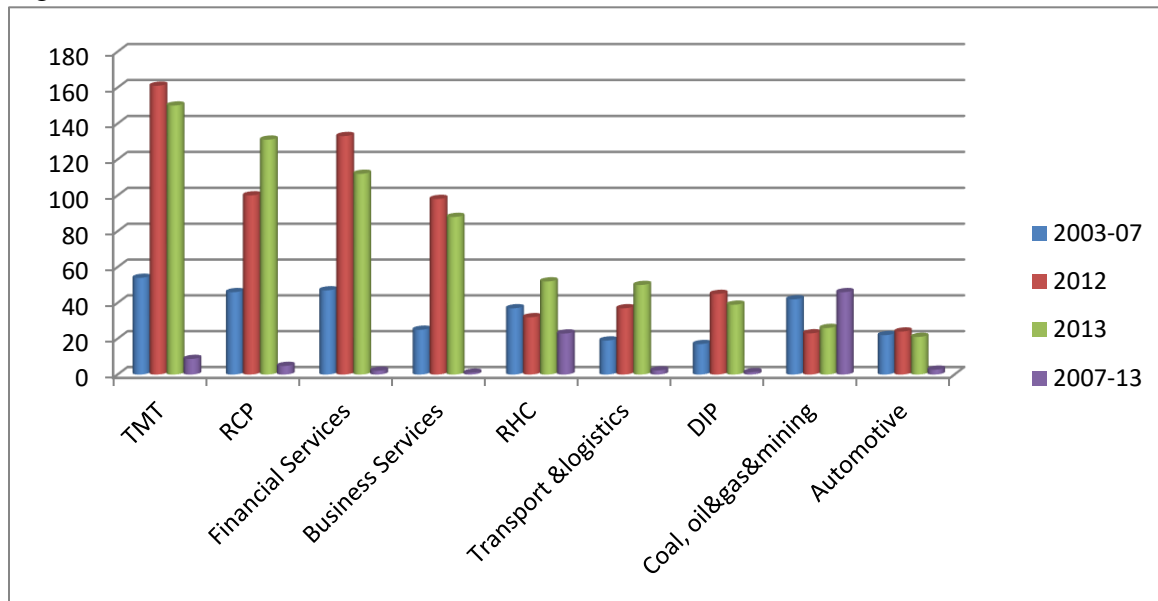
Table 2.5: Top Recipients Countries by Sector (Share)

Sector	2007-2011		2012-2013	
	Country	Share (%)	Country	Share (%)
Financial Services	Angola	15.7	Egypt	10.2
	Egypt	10.5	South Africa	9.4
	South Africa	6.5	Ghana	7.8
TMT	South Africa	23.7	South Africa	24.1
	Morocco	9.8	Nigeria	11.9
	Tunisia	9.1	Kenya	9.6
RCP	Egypt	16.9	Nigeria	14.7
	South Africa	11.7	South Africa	13.0
	Morocco	11.3	Egypt	9.5
Business Services	South Africa	19.2	South Africa	25.8
	Morocco	17.1	Kenya	9.7
	Egypt	10.7	Morocco	8.1
RHC	Morocco	20.2	Egypt	9.5
	Egypt	12.1	Algeria	8.3
	Tunisia	8.7	South Africa	7.1
Mining and Metals	South Africa	15.2	South Africa	15.5
	Zambia	8.0	Ghana	12.1
	Botswana	7.6	Namibia	8.6
Coal, oil and Natural gas	Egypt	15.2	Egypt	16.3
	South Africa	11.3	Mozambique	14.3
	Nigeria	10.0	South Africa	12.2
Transport & Logistics	South Africa	17.4	South Africa	17.2
	Angola	11.2	Kenya	14.9
	Morocco	9.9	Morocco	9.2
DIP	South Africa	27.5	South Africa	31.0
	Morocco	11.3	Kenya	10.7
	Tunisia	8.8	Morocco	7.1
Automotive	South Africa	28.9	South Africa	31.1
	Morocco	15.7	Kenya	17.8
	Tunisia	9.6	Morocco	13.3

Source: FDI Intelligence

Note: RCP is Retail and Consumer Products, DIP is Diversified Industrial Products, TMT is Technology, Media and telecommunications, RHC is Real Estate, Hospitality and Construction

Figure 2.5: Trend in Sectorial FDI flows in Africa



Source: FDI Intelligence

Note: RCP is Retail and Consumer Products, DIP is Diversified Industrial Products, TMT is Technology, Media and telecommunications, RHC is Real Estate, Hospitality and Construction

## 2.5 TYPES OF FDI FLOWING TO AFRICA

Literature on FDI has identified at least four motives for firms and investors investing abroad by way of FDI (UNCTAD, 1998). The need for natural resources motive is one such motive in which the investor plans to exploit the host country for its natural resources. This normally takes place in resource endowed developing countries that neither have the needed capital nor the required technology to exploit these resources. Most of the FDI investors in African resources rich countries like Nigeria, Ghana, Botswana, Angola, Zambia, and so on, have this motive as a primary reason. In addition, the market-seeking motive is one of the reasons behind investing abroad. This is where a country is sought out for its large population which is underserved. This takes place in developing countries with higher populations that are economically sound. This is one of the reasons that have put Asia ahead of all developing countries in FDI attraction. In Africa, countries like Nigeria, Egypt, South Africa and Kenya exert higher influence on the FDI market, partly due to their population and the size of their economies.

Thirdly, the efficiency-seeking motive is another reason for investing abroad. This one is associated with a location advantage in which the host country has a comparative advantage in areas such as cost of labour, high quality, labour force ability and improved infrastructure. The main aim of the investor here is to reduce cost whilst maintaining quality. Countries like South Africa and Egypt have these advantages over other African countries and hence receive high FDI flows. Finally, some investors also pursue strategic asset-seeking as their motive of investing abroad. This is a comparative advantage created by the host firms in areas such as brand names, special work force and hence the need for the investors to invest in and tap such innovative ideas. The types of FDI flowing into each country are greatly influenced by these motives. The strategic asset-seeking and efficiency seeking investors are more likely to invest through mergers and acquisition. The resource seeking investors will, in most cases, invest through greenfield FDI so as to harvest and repatriate their profits. The types of flows to Africa are thus discussed below.

Throughout the world FDI is created mostly through either mergers and acquisition or greenfield investment. As shown in table 2.6, the mergers and acquisition portion of the world FDI consistently increased since 2009 reaching \$721.4 billion in 2015 from an initial \$287.6 billion in 2009. On the other hand, greenfield investment continually dropped since 2009 to reach \$485.6 billion in 2015 from a figure of \$958.1 billion in 2009. In the developing world, however, the situation is clearly different. Greenfield FDI flows have consistently maintained the higher share of FDI flows (see table 2.6). In the developing world, greenfield FDI expressed as percentage of world greenfield FDI, ranged between 56% in 2012 to as high as 98% in 2013. The developing economy share of the world merger and acquisition FDI is, however, very small with the highest being 33% in 2013. It is hence not surprising to note that Africa's share of the world mergers and acquisition FDI is only about 1%, while its share of greenfield FDI is around 10% per annum. Out of the developing economy's share of FDI mergers and acquisition, Africa's share is 11% but Africa accounts for over 15% of the developing world's greenfield FDI into the region. Similarly, SSA share of the developing mergers and acquisition FDI flows are 8% for mergers and acquisition and 11% for greenfield. Just like most of the developing countries, Africa FDI flows are dominated by greenfield flows compared to mergers and acquisition. FDI mergers and acquisition flows in African countries is small and erratic. While countries like South Africa, Nigeria, Egypt and Algeria have some sizeable mergers and acquisition, all the other countries have very insignificant



mergers and acquisition flows, as is illustrated in table 2.7. It is noted that mergers and acquisition flows to South Africa is really remarkable with its 2015 flows exceeding the greenfield flows significantly.

Table 2.6: FDI types (Billion US\$)

Region	Types of FDI	2009	2010	2011	2012	2013	2014	2015
World	M&A	287.6	347.0	553.4	328.2	262.5	432.4	721.4
	Green Field	958.1	818.9	865.3	631.0	547.3	487.3	485.6
DE	M&A	43.9	83.0	83.5	54.6	87.2	127.1	81.1
	Green Field	586.9	482.9	522.8	355.7	534.2	447.9	468.6
Africa	M&A	5.9	7.4	8.6	(1.2)	3.8	5.1	20.4
	Green Field	84.4	70.4	67.5	47.6	68.7	89.1	71.3
SSA	M&A	3.3	6.4	7.2	(0.8)	0.8	5.2	22.5
	Green Field	45.0	52.0	56.0	32.6	57.2	62.6	49.4
<b>Percentage Share of the world FDI types</b>								
Region	Types of FDI	2009	2010	2011	2012	2013	2014	2015
DE	M&A	15	24	15	17	33	29	11
	Green Field	61	59	60	56	98	92	97
Africa	M&A	1	1	1	(0)	1	1	4
	Green Field	9	9	8	8	13	18	15
SSA	M&A	1	2	1	(0)	0	1	3
	Green Field	5	6	6	5	10	13	10
<b>Percentage Share of the developing economy FDI types</b>								
	Types of FDI	2009	2010	2011	2012	2013	2014	2015
Africa	M&A	13	9	10	(2)	4	4	25
	Green Field	14	15	13	13	13	20	15
SSA	M&A	8	8	9	(2)	1	4	28
	Green Field	8	11	11	9	11	14	11

Source: UNCTAD, 2016

Note: DE is Developing Economy, M&A is Mergers and Acquisition, SSA is Sub-Saharan Africa

Table 2.7: FDI types in top ten recipient countries in Africa (Billion US\$)

Country	Types of FDI	2009	2010	2011	2012	2013	2014	2015
Algeria	M&A	-	-	-	-	0.01	(0.18)	(2.64)
	Green Field	2.60	1.36	1.43	2.37	4.28	0.53	0.74
Egypt	M&A	1.68	0.12	0.60	(0.70)	1.83	0.07	0.44
	Green Field	18.47	9.50	5.41	9.47	3.28	18.17	14.63
Morocco	M&A	0.69	0.84	0.27	0.29	1.09	0.01	0.76
	Green Field	6.84	2.44	2.89	1.48	2.93	5.18	4.51
Tunisia	M&A	0.01	0.01	-	0.02	0.03	0.03	0.01
	Green Field	7.64	1.64	1.30	1.14	0.44	2.17	0.41
Congo	M&A	-	-	-	0.01	-	-	-
	Green Field	1.27	-	0.03	0.11	3.48	1.70	0.18
DR Congo	M&A	0.001	0.17	-	-	0.001	-	-
	Green Field	0.04	1.06	2.18	0.46	1.08	0.54	1.21
Ghana	M&A	-	-	(0.003)	-	0.01	-	(0.001)
	Green Field	6.79	2.53	5.70	1.25	2.83	4.83	1.43
Mozambique	M&A	-	0.03	0.02	0.003	0.002	2.75	0.002
	Green Field	0.78	3.20	8.92	3.20	6.59	8.80	5.16
Nigeria	M&A	(0.19)	0.47	0.53	(0.15)	0.53	0.99	1.040
	Green Field	7.80	8.03	3.78	5.12	8.83	10.83	8.62
South Africa	M&A	3.86	3.65	6.67	(0.96)	0.10	0.37	20.96
	Green Field	5.84	5.95	10.85	4.80	7.21	3.59	4.88

Source: UNCTAD, 2016

Note: M&amp;A is Mergers and Acquisition

## 2.6 ORIGINS OF FDI FLOW TO AFRICA

FDI flow into African countries has diverse origins around the world, including in African flows or flows from other African countries. The leading countries in terms of the number of projects invested in Africa are shown in table 2.8 below. From the table it is noted that all the leading investors in Africa have an undulating trend of growth in the number of projects they invest on in Africa. The United State of America and United Kingdom are the largest investors in Africa. With 768 FDI projects representing 12.2% of the total FDI projects in Africa. The two countries have deliberate plans to dominate investment in Africa. While the US has established the African Growth and Opportunity Act and Power Africa under the auspices of president Barrack Obama,

the UK entered into a High-Level Prosperity Partnerships (HLPP) in 2013 with five countries including Angola, Cote d'Ivoire, Ghana, Mozambique and Tanzania (Ernst and Young, 2014). All these initiatives are geared towards maintaining or increasing their investment presence in Africa. In terms of value of projects into the region, the UAE is the leading investor with a percentage share of 12.1% followed by the UK with 10.7% and India with 7.3%.

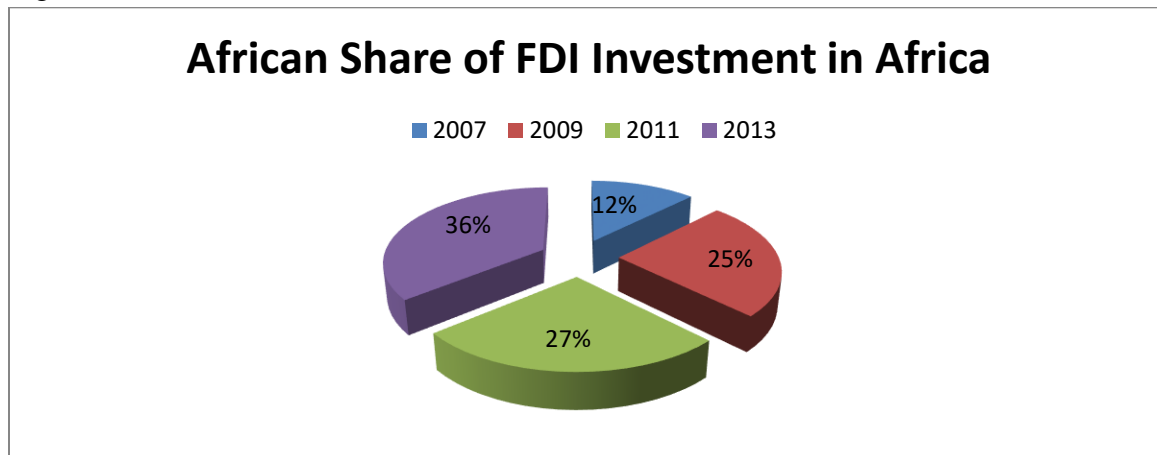
France, being one of the key investors in the region due to its colonial ties with some African countries, has since 2010 experienced a reduction in its investments into Africa. This is attributable to the political unrest across North Africa (Morocco, Tunisia, Algeria and Egypt) where it has most of its investment destinations (Ernst and Young, 2014). Asian presence in Africa regarding FDI investment, is led by India, followed by the UAE, China and Japan. Though China is the largest trading partner with Africa, with trade increasing from US\$10 billion in 2000 to US\$200 billion in 2013, its FDI investment in Africa remains low. The African countries that invest in other African countries are South Africa, Kenya and Nigeria. The African Share of the Africa FDI flow is also increasing significantly. As shown in Figure 2.6 below, Africa's share rose astronomically from 12% in 2007 to as high as 36% in 2013.

Table 2.8: Top 15 Source Countries of FDI flowing to Africa

Source Country	Share of Projects			Value
	2003-13(%)	2007-11(%)	2012 & 2013(%)	2007-13(%)
US	11.6	11.7	11.5	8.0
UK	11.0	10.0	13.3	10.7
France	8.5	10.2	4.6	6.5
South Africa	5.9	4.5	9.1	4.3
India	5.6	5.5	5.9	7.3
UAE	4.8	4.1	6.4	12.1
Spain	4.4	4.8	3.5	3.0
Germany	4.1	4.0	4.3	2.3
Portugal	2.9	3.7	0.9	1.1
China	2.8	2.6	3.1	4.2
Kenya	2.7	2.6	2.9	1.0
Japan	2.6	2.4	3.1	1.8
Switzerland	2.4	2.6	1.8	2.1
Nigeria	1.9	2.0	1.7	1.0
Italy	1.9	2.2	1.2	2.3

Source: FDI Intelligence

Figure 2.6: Intra-African Investment



Source: FDI Intelligence

## 2.7 CONCLUSION

Most countries in Africa, in recent times, have embarked on major drives to increase the flow of FDI into their economies. This drive is to attract more FDI and thus garnish the full benefits associated with FDI inflows into their countries. In this section, we therefore discussed the trend of FDI flow into Africa, the sectors that receive the FDI in the region, the sources of the flow of FDI into the region and finally the types of FDI that flow into the region.

We established that, though the flow of FDI into Africa has not been very stable, it has been very encouraging since the beginning of the 21<sup>st</sup> century. Despite this, Africa's share of the developing world FDI is greatly insignificant (only 9% of developing world FDI). The value of inflows into the region is very vulnerable to fluctuations in the world commodities markets. We noted that Southern Africa and West Africa are the leading sub-regions in the continent in receiving FDI. South Africa and Nigeria are the leaders in these regions respectively as well as the leading countries in the SSA.

We observed a change in the sectoral flow of FDI in Africa. Whilst the primary sector is still the leader of FDI flow in terms of capitalisation, it has gradually over the years lost its position in the ranking by the number of projects to the services sector, which is dominated by the TMT, RCP and the financial services sector. The types of FDI flowing into the region are basically greenfield investments, with only South Africa receiving an appreciable number of mergers and acquisition

as FDI. This implies that most FDI motives into the region are either asset seeking or market seeking as opposed to strategic asset seeking or efficiency seeking. In terms of sources of the inflow into the region, the US and the UK are still the dominant market holders though their share of the market is gradually reducing due to the interest of other countries in Africa in recent times.

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## CHAPTER THREE

### FOREIGN DIRECT INVESTMENT AND FIRM VALUE: EVIDENCE FROM SELECTED COUNTRIES IN SUB-SAHARAN AFRICA<sup>1</sup>

#### 3.1 INTRODUCTION

This chapter examines the link between Foreign Direct Investment (FDI) and firm value in Africa. The inflow of FDI is noted to be a very good channel through which developing continents can bridge the developmental gap with the developed world (Gorg and Strobl, 2001). At the firm level, firm value is expected to increase as FDI flows leads to transfer of technology, adoption of enhanced managerial practices and increase in capital flow, thus inducing efficiency and large-scale productivity.

Theoretically, however, the relationship between the inflow of FDI and firm value has generally been inconclusive. While some hold the view that FDI largely impacts positively on host firms (Vernon, 1966 and Caves, 1974), others argue that in the long run FDI has a negative impact on host firms' values (Fan, 2002 and Yamin and Sinlovics, 2009). This has entrenched the debate on the link between FDI and firm performance. In addition, a greater part of the empirical studies in the developing world have focused more on understanding the relationship between FDI and macro-economic variables to the neglect of the micro-variables (see: Asiedu, 2002, Akinlo 2004; Alfaro *et al.*, 2004; Ayayi, 2006; Ayanwale, 2007 and Adjasi *et al.*, 2012).

In Sub-Saharan Africa (SSA) only a handful of studies have examined the relationship between FDI and firm level activity (see: Bwalya, 2006; Ofosu, 2010; Abor, 2012, Waldkirch and Mebratie and Bedi, 2013).

Very little is therefore known empirically about how FDI impacts firm value in SSA despite the public interest and policy importance of FDI flow to firms in SSA. A recent survey by UNIDO on the perception of domestic firms in SSA about the inflow of FDI into their countries presented a mixed result which can be observed in a study by Boly *et al.*, (2013), the results of which are shown in Table 3.1.

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<sup>1</sup> This paper has been presented at the 2015 Development Finance Conference organized in Cape Town, South Africa from 29-30<sup>th</sup> October, 2015 and is currently under review in a journal.

Table 3. 1: The net effect of inward FDI on domestic firms SSA

Country	Positive	Negative	No effects	Observations
Burkina Faso	41.1	26.0	32.9	73
Burundi	35.5	27.3	37.2	121
Cameroon	37.6	27.8	34.6	133
Cape Verde	33.1	31.6	35.3	272
Ethiopia	27.4	20.2	52.4	431
Ghana	27.7	31.9	40.4	235
Kenya	25.9	19.3	54.7	316
Lesotho	<b>7.8</b>	<b>39.2</b>	52.9	102
Madagascar	50.0	20.6	29.4	102
Malawi	44.0	25.3	30.7	75
Mali	25.6	25.1	49.2	195
Mozambique	<b>82.5</b>	<b>6.3</b>	11.1	189
Niger	24.6	29.2	46.2	65
Nigeria	37.7	23.0	39.3	387
Rwanda	27.8	24.1	48.1	108
Senegal	42.8	23.0	34.2	152
Tanzania	32.4	24.7	42.8	299
Uganda	25.8	27.3	46.9	403
Zambia	47.3	33.5	19.2	203
Sub-Saharan Africa	34.4	24.9	40.7	3861

Source; Boly *et al* (2013)

It is evident from Table 3.1 that although in total, the domestic firms that benefit from the presence of FDI in their countries are more than those that do not benefit from the presence of FDI (34.4% against 24.9%), some countries like Lesotho, Ghana, Niger and Uganda actually recorded more firms not benefiting from the presence of FDI than those benefiting. Though Boly *et al.*, (2013) have associated these different impacts of FDI with the local firms' specific characteristics and prevailing macro-economic environment in the various countries, an empirical study based on real firm data rather than firm perception data is seriously needed to understand the impact of FDI on firms in SSA. This study is intended to fill this literature gap by investigating empirically the link between FDI flows and firm performance in selected countries in SSA. The results of this study will enable us to contribute to the theoretical literature on the FDI-firm value link.



In addition to adding to the literature on FDI and firm value in Africa, this study further addresses two critical issues usually ignored in testing the effect of FDI on firm value. One is the issue of correctly measuring firm value. Most studies use accounting performance measures, thus masking the real economic dimensions of value (see: Tallman and Li, 1996; Hitt *et al.*, 1997; Lu and Beamish, 2001; Kuntluru *et al.*, 2008, Azzam *et al.*, 2013). This paper departs from others by incorporating a market based performance measure which captures the economic dimensions of performance. Another issue in examining the link between FDI and firm value is that of possible endogeneity between FDI and firm value. It could be the case that high performing firms may be the ones attracting high FDI inflows. In this case such endogeneity must be controlled for. Unfortunately, few firm level studies control for this.

In this study we have been able to control for any possible endogeneity with the use of system GMM thereby making our results more robust and consistent. The rest of the chapter is organized as follows: section 3.2 examines the trend in FDI flows to SSA, section 3.3 reviews related literature, while section 3.4 focuses on the data and methodology of the study. Sections 3.5 and 3.6 discuss the findings and conclusions to the study respectively.

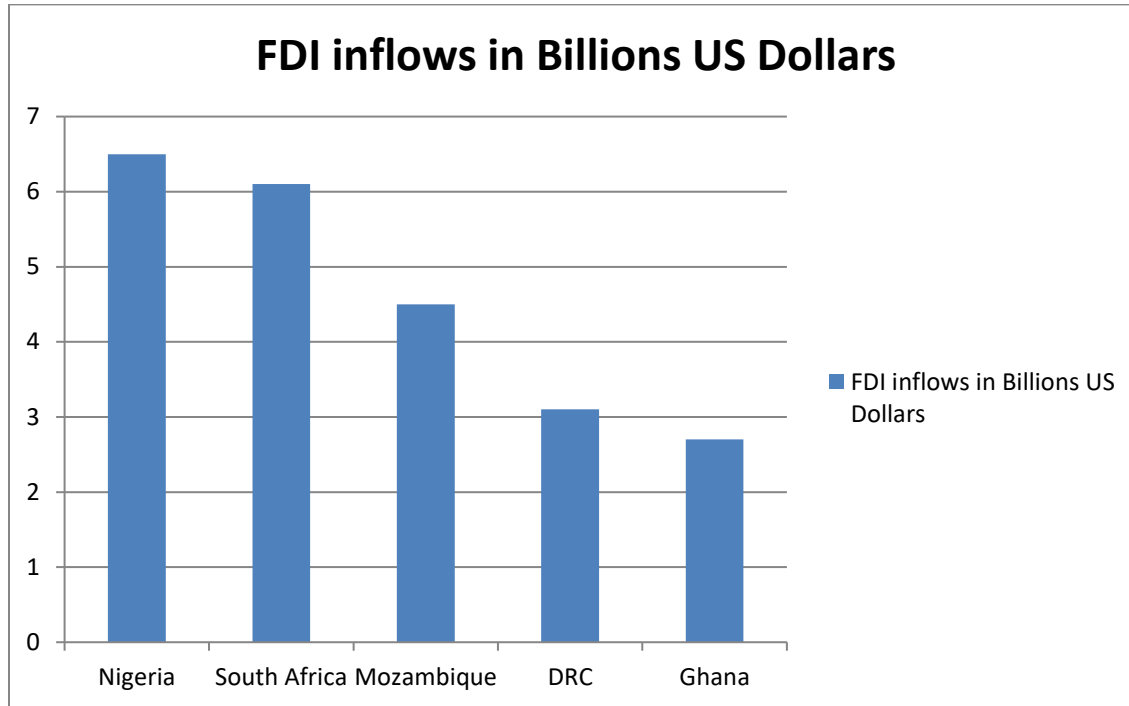
### **3.2 OVERVIEW OF FDI FLOW IN SSA**

Most African countries have opened up their economies since the 1990's through reforms, granting of tax exemptions and tax holidays to foreign investors, thus permitting repatriation of profits by these investors, (UNCTAD 1997). Besides, a congenial environment for FDI flows has also been created by way of trade liberalisation, improvements of legal institutions, telecommunication networks and transportation infrastructure, so as to attract FDI into the continent (World Economic Forum, 1998). The inflow of FDI is expected to boost access to capital, transfer technology, and enhance managerial skills, therefore leading to economic growth for the host countries. FDI is increasing steadily in Africa and it was projected to reach \$150 billion by the year 2015(UNCTAD, 2011).

For instance, the FDI flow to SSA increased from US\$6.3 billion in 2000 to US\$35 billion in 2012. This level of FDI flow to SSA is however observed to be skewed towards a few countries. About 90% of this amount is attributed to only fifteen countries. As depicted in figure 3.1, in the average

performance of FDI inflows into Africa between 2011 and 2014, Nigeria recorded the highest inflow followed by South Africa, Mozambique, DR Congo, and Ghana

Figure 3.1: Top 5 recipients of FDI in SSA during 2011 to 2014 periods - average



Source: UNCTAD, World Investment Report 2013 and 2015

### 3.3 LITERATURE REVIEW

#### 3.3.1 Theoretical Literature

Theories surrounding the FDI-firm value have been mixed in the literature. While some scholars argue that FDI impacts positively on firm value, others on the contrary believe that there is an inverse relationship between FDI and firm value. Yet there is another school of thought that argues that FDI has no predictable impact on firm value. We have grouped these theories under the three main stances as follows.

#### *Positive Relationship between FDI and Firm Value*

A number of theories explain why FDI will have a positive impact on firm performance. One such theory is the “specific advantage hypothesis theory”. This theory is attributed to Dunning and Caves (1974, 1996). This theory takes the view that there is a performance gap between FDI based firm performance and non-FDI ones (Bellak, 2004). Generally, this is because FDI based firms are

normally part of a multi-national enterprise (MNE) thus enjoying the advantages of technology, economies of scale, superior management, etc. (Gelubcke, 2012). Based on the earlier works of Wernerfelt (1984) and Barney (1991) on a resource base view theory of multi-national enterprise (MNE), Lee and Rugman (2012) argued that for a MNE to perform better in a foreign country, it has to internalise hard-to-replicate firm specific advantages. Besides, they indicated that such a firm must focus on its country specific advantage of origin so as to reduce the level of intra-regional foreignness which such firms face in unfamiliar and risky countries. In extending this theory, Gelubcke (2012) indicated that MNE firms have some advantages that could make them perform better than non-MNE firms. These advantages are superior technology, being part of a network of affiliates and the advantage of country of origin.

Another theory explaining the positive FDI-firm value link is the eclectic theory. Propounded by Dunning (1993), this theory is popularly called the OLI paradigm theory, where O stands for ownership advantage; L stands for location advantage while “I” refers to internalisation. Ownership advantage is the situation where a firm has some knowledge advantage, superior technology, strong brand or copyright benefits or special management expertise which others do not have. Location advantage is where the firm is privileged to find itself in a location where it can access larger markets than its competitors, access cheaper labour, access low cost inputs and have access to good infrastructure, while internalisation refers to a case where due to imperfections in the market, the firm is able to acquire certain goods by producing them cheaper internally in the origin country and in the host country as well. These advantages make an FDI related firm perform better than a non-FDI related firm. This internalisation theory is based on the initial work of Hymer (1960, published in 1970), expanded by Buckley and Casson (1976), who believed that profit is maximised when firms conduct their operations internally across borders instead of doing this externally between firms in different countries.

Trevino and Grosse (2002) posit that FDI firms can transfer some of the origin based advantages to the host country at virtually no cost or at low cost. Besides, FDI firms have the advantage of getting both cheaper local resources together with good foreign expertise. Additionally, it can also gain local knowledge as it deals with competitors locally (Delios and Beamish, 2001) thus leading to a gap of competency between FDI firms and purely domestic firms. This eventually translates

into high firm performance advantages in their favour. Willmore (1986) pointed out that FDI firms should perform better than the local firms because the former has access to more resources.

FDI firms is noted to have the advantages of offering long-term finance, skills and management, market access and new technologies (Lall, 2000). The availability of funds is crucial in the development of ideas and novel concepts. With the needed funds, FDI based firms are able to invest adequately into machinery and equipment that are needed for any innovative processes or procedures. Again, they are in a better position than non-FDI based firms to attract and retain the best human resources, as they are financially better placed to meet the demands of the high quality human resources needed for innovative activities. All these bring about more efficiency in operations and hence the ability to enhance firm value. Besides, due to their multi-nationality, FDI based firms have access to large and new markets, granting them the advantage of large scale production capacity. With the engagement of large scale production, cost is reduced and this has a ripple effect on the firm value positively.

### ***Negative Relationship Between FDI and Firm Value***

In his seminal work on the affiliates of MNEs, Hymer (1960/1976) argues that FDI based firms face disadvantages relative to non-FDI based firms operating in host countries. These disadvantages are in the form of all additional costs incurred by foreign firms operating in markets in overseas which costs the local firms will not incur in their operations. This results in a comparative disadvantage leading to liability of foreignness (Campbell et al., 2012 and Mezias, 2002). Campbell *et al.* (2012) believe that the host country's environment normally lacks information about the foreign firm and its operations and hence uses stereotypes and imposes different criteria in judging MNEs. This leads to costly delay in conferring legitimacy and continued distrust of foreign entrants. As defined by Suchman (1995:574), legitimacy refers to "a generalized perception or assumption that the actions of an entity are desirable, proper or appropriate within some socially constructed system of norms".

One of the areas that liability of foreignness can emanate from is cultural barriers. Cultural barriers can be seen as the difference between FDI home and host countries' assumptions, norms, values and beliefs of individuals. FDI based firms often try to adjust to these cultural differences with

time. However, the probability of failure becomes imminent as cultural adoption becomes more demanding in some environments (Barkema *et al.*, 1996). Besides, language differences make it very costly to communicate information across borders giving non-FDI firms an edge over FDI based firms in competition (Campbell *et al.*, 2012). Similarly, there might be differences in government policies, regulations and institutions between the home and host countries (Campbell *et al.*, 2012).

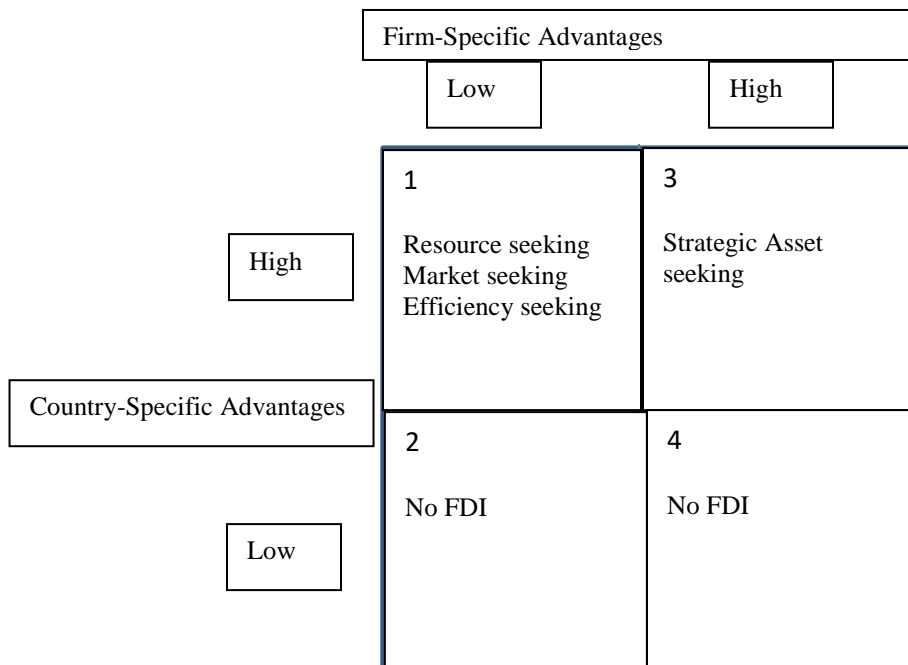
Other liability of foreignness could arise in the form of political hostility between countries, absence of shared monetary or political associations and lack of colonial ties (Ghemawat, 2001). It is noted that compliance with host country regulations can be a challenge for FDI based firms which tend to face more lawsuits than their counterparts, non-FDI firms. The cost of adopting to home country policies and regulations are even higher for firms which home countries have very dissimilar administrative heritage to the host country (Eden and Miller, 2010). Thus these extra cost incurred by FDI led firms make FDI firms more prone to value reduction than non-FDI based firms in host countries which do not incur any of such expenses.

### ***Mixed Relationship Between FDI and Firm Value***

Other theories also show that the relationship between the FDI-firm value cannot be predicted with certainty. This relationship could be positive or negative link as discussed above. Theories that believe that FDI-firm value link can be positive, negative, depending on certain prevailing factors pertinent to the host economy or the home firm are discussed here. One of such theories is the reconciled FSA/CSA framework with Dunning's four motives of FDI illustrated by Yang *et al.*, (2013). The framework is shown in the figure 3.2. In this framework, FSA stands for firm specific advantages referring to the MNEs valuable, non-substitutable and difficult to imitate resources and capabilities (Barney, 1991). These advantages could include: upward technological knowledge, administrative knowledge, reputational resources and institutional routines (Yang *et al.*, 2013). The FSAs is categorized into internationally transferable and non-transferable (Rugman and Verbeke, 2001). While the former is noted to create value across borders, the latter does not create value for host firms (Verbeke, 2009). On the other hand, CSA stands for country specific advantages and this refers to the whole set of strengths of a host country or firm (Barney, 1991). These could be in the form of land, labour, capital, entrepreneurship, demand conditions, knowledge base or conducive social and institutional advantages.

The x-axis of the reconciled FSA/CSA framework focuses on whether MNEs' FSAs are weak or strong compared with competitors whereas the y-axis looks at whether or not CSAs of the host country/firm are weak or strong compared with other hosts.

Figure 3.2: Reconciled FSA/CSA Framework



Source: Rugman, 2010

From the figure above, cell 1 is where the FSAs are low while the CSAs are high. Thus FDI is attracted by the CSAs and it does not matter at all whether or not the MNEs have some firm specific advantages or not. In this cell the MNEs' motives of FDI are the resource seeking, market seeking and efficiency seeking. Cell 3 is the strategic asset seeking FDI motivated MNEs activities. This is where the parent company has FSAs but seeks to explore the CSAs that exist in the host firm so as to augment its strengths. In this cell, the MNEs expand into the host firm with the view to searching for advanced resources including upward-technological knowledge, downward marketing knowledge, administrative knowledge or reputational resources. For instance, Almeida (1996) established that in the semi-conductor industry, the objective of MNEs from Europe and Korea to the USA was to offset a technological deficient in their home countries. Apart from that

small Taiwanese MNEs treat FDI as a conduit to link with resources that MNEs need but do not have them at home markets.

In this situation, FDI led firms have the possibility of getting their values reduced as the MNEs enter into the host firms with the idea of siphoning the host firms' comparative advantages into their home firms, thus there is no clear interest in developing the host firm. In such an instance, negative relationship is envisaged or at best neutral relationship is observed if it does not destroy the host firm value.

Cell 2 and 4 would not attract FDI as CSAs are low. In that case no MNEs will be interested in expanding into such locations/firms. Hence our concentration is on cell 1 and 3 alone. Whereas high CSAs are needed for each of Dunning's four FDI motives to take place, FSAs are not a necessity for the natural resource seeking FDI, market seeking FDI and Efficiency seeking FDI (Rugman, 2010). Thus there is a low probability of host firms benefiting in value from FDI inflows which fall into cell 1 category as the MNEs may not have any FSAs to transfer to the host firms with the exception of boosting the capital base of the host firm. Cell 3 category is where more gains and losses exist for the host firms in the FDI inflows. Gains in this cell are enormous if the FSAs are internationally transferable into the host firms. In this case the host firms are able to benefit from the FSAs of the MNEs and hence their values will enhance as compared to the non-FDI firms who have no affiliation with any MNEs. On the contrary, where the MNEs FSAs are non-transferable, the parent country is likely going to gain from the host firms by exploiting the host firms' advantages without transferring any of their advantages to the local firms to boost their values. In this instance, FDI inflows have no significant impact on host firms or at worst destroys firm value by taking away their strategic assets without leaving behind any benefits to the firm.

From the above discussions, it is obvious that the theories surrounding FDI-firm link are inconclusive. However, it is also discernible from the literature that, FDI and firm activity can be endogenous where FDI does not only impact on firm value but firm value will cause the inflow of FDI into a host firm. This is possible because, as MNEs seek to gain from host firms, they (MNEs) target host firms that have superior advantages thus leading to self-selection bias where FDI moves only into firms that have high values and not low performing firms. Thus in determining the link between FDI and firm value, it is imperative that consideration be given to the issue of endogeneity so as to generate efficient results. Studies that do not control for endogeneity are likely going to

produce biased results and this can be one of the reasons why several mixed results have been produced on the FDI-firm value link.

### **3.3.2 Empirical Literature**

Empirical studies conducted on the impact of FDI inflows to firms using firm level data can be sorted into three groups. While the first group of studies has established a positive relationship between FDI and firm performance, the second group consists of studies with mixed results or showing no significant effect of FDI on firm performance. The third group has found a negative relationship in FDI on firm performance.

Amongst the first group of studies, Javorcik (2004) studied the effect of FDI on local firms in Lithuania using 1996 and 2000 firm level country data. Using OLS and Olley-Pakes regression on 1,918 and 2,711 firms of 1996 and 2000 respectively, the research concluded that FDI has a positive productivity effect on local firms in Lithuania. Imbriani and Reganati (2004) showed similar findings when they used a larger sample size of 12,283 firms in studying the Italian economy. Yasar and Paul (2007), using data on 437 firms in five transition countries, found a positive relationship between FDI and productivity, capital intensiveness, labour wages and exports. Fu *et al.* (2010) also found that FDI firms are more productive than non-FDI firms in the UK retail industry. Akulava and Vakhitova (2010) noted that in the Ukraine, FDI firms perform better than the non-FDI firms, but in primary industries only.

Similar findings were made by Dimelis and Louri (2008) in Greece. Making use of the Regional Project on Enterprise Development (RPED) dataset, Abor (2010) realized that FDI and productivity has a positive significant relationship on manufacturing firms in Ghana. Using maximum likelihood two state estimators, Hanousek *et al.* (2012) explored the relationship between FDI and efficiency of firms in Czechoslovakia. They also observed that FDI is beneficial to recipient countries at the micro economic level. In reviewing the relationship between FDI and productivity in studies conducted between the period of 2000 and 2012 in European countries using meta-analysis, Bruno and Cipollina (2014) concluded that there is positive indirect impact of FDI on productivity and also on growth, though it is smaller in margin. Foster-McGregor *et al.* (2015), using 19 countries from SSA, established that FDI firms performed better than the non-FDI firms in the manufacturing and services sector.



The second group of empirical studies consists of studies that found mixed results and those that found no significant effect of FDI on firm performance. In the case of mixed findings, Doukas and Lang (2003) showed that although FDI that flows into related businesses in the recipient firms enhance firm value, FDI that flows into non-related businesses in the recipient firms does not increase firm value. In a two-country comparative study of Portugal and Greece, Barbosa and Louri (2005) found no significant relationship between FDI and productivity for firms in Portugal. Although they did find a positive relationship for firms in Greece, this relationship only exists with firms in the upper quartile level of size. Chang and Rhee (2011), in another study, found mixed results. They found that FDI expansion has enhanced Korean firms' performance only in industries that have a high globalisation presence. Suyanto *et al.* (2012) observed a positive productivity effect of FDI in the garment industry, but a negative productivity effect of FDI in the electronic industry, in Indonesia. Studies that do not find any significant effect of FDI on firm performance include Pojar (2012), a study of 9,500 firms selected from 13 Central and Eastern European transition economies, and the work of Mebratie and Bedi (2012) on firms in South African.

The last group of empirical literature consists of studies that document negative effects of FDI on firm performance. In this regard studies by Bwalya (2006) on Zambian firms, and by Waldkirch and Ofosu (2010) on Ghanaian firms, show that FDI inflows lead to negative performance in host firms. Both of these studies used only the data of manufacturing firms extracted from the dataset of the Regional Project on Enterprise Development (RPED).

From the above review, while two studies on SSA established a positive relationship between FDI and firm performance (Abor, 2010 and Foster-McGregor *et al.*, 2015) two of the studies have found a negative relationship (Bwalya, 2006 and Waldkirch and Ofosu, 2010). Mebratie and Bedi (2012) is the only study that did not find any significant relationship between and FDI and productivity. Although the results varied, all the SSA based studies have used RPED datasets, thus focusing their studies on only the manufacturing and service sector. One common phenomenon with all these studies is that they did not use a market based measure of firm value.

## 3.4 DATA AND METHODOLOGY

### 3.4.1 Sample and Data Source

Data for this study is obtained from the stock exchanges of Ghana, Nigeria and South Africa through McGregor's datasets which hosts most African stock exchange data. The selection of Ghana, Nigeria and South Africa is based on these countries consistently being amongst the top recipients of FDI inflows into Africa within 2010-2015 periods and also because of vibrant stock market activities in those countries. The information hosted on the McGregor BFA dataset is uniformly audited and published accounts of listed firms in Africa. The targeted firms are the listed firms in Ghana (Ghana Stock Exchange, GSE); Nigeria (Nigerian Stock Exchange, NGSE); and South Africa (Johannesburg Stock Exchange). In Ghana and Nigeria, 24 and 61 firms have been used respectively in the study after dropping all firms with missing data. In the case of South Africa, 62 firms have been used after dropping firms with missing data from the group of the 100 largest firms listed on the Johannesburg Stock Exchange (JSE). The composition of the data can be seen in table 3.3 below. The usage of the first 100 firms is based on the finding that the largest 50 firms represent over 85% of JSE market capitalization (Max, 2009).

The data span from 2008 to 2012<sup>2</sup> which resulted in a total of 735 observations for all three countries. The data is made up of the firms' up to date income statements, financial positions, cash flow statements, financial ratios, directors' remunerations, history and annual reports. For the sector categorization of the firms, the dataset has classified them into 13 sectors including: pure services, goods and services, mining, manufacturing, health, construction services, food, food and beverages, ICT, telecommunication, oil and gas, production and the financial service sector. We have, however, reclassified them into five main categories: financial sector, manufacturing, other services, retail and the oil and mining sector. The reclassification and composition of sectors are found in tables 3.2 and 3.3 below. The reclassification is based on previous works (see for instance, Kyereboah-Coleman, 2007)

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<sup>2</sup> McGregor BFA has data on firms only from 2006 onwards but most firms in Ghana and Nigeria have their data points starting from 2008 to 2012. Beyond 2012, most of the firms in Ghana and Nigeria do not have data captured by McGregor BFA.

Table 3.2: Sector Reclassification

<b>Original Set of Classification</b>	Manufacturing and production	ICT, telecommunication, Health, pure services, and construction services	Food, food and beverages, and goods and services	Mining, and oil and gas	Financial sector
<b>Reclassification</b>	Manufacturing	Other Services	Retailing	Oil & Mining	Financial Sector

Table 3.3: Firm Distribution by Sector and Country

Country	Sector						Total
	Manufacturing	Other Services	Retailing	Oil & Mining	& Financial Sector		
Ghana	8	3	4	2	7	24	
Nigeria	18	8	7	3	25	61	
South Africa	5	18	16	11	12	62	
Total	31	29	27	16	44	147	

### 3.4.2 Empirical Model Specification

The use of panel data is noted to have several merits over time series or cross section data (Hsiao 2003 and Klevmarken 1989) thus we employed a panel data framework in our analysis. Our basic panel model is in the form:

$$Y_{it} = \phi + X_{it}\alpha + \varepsilon_{it} \dots \dots \dots (3.1)$$

Where  $\phi$  is a constant,  $X_{i,t}$  is a K-dimensional vector of explanatory variables and  $\varepsilon_{i,t}$  is the error term which is further decomposed into the following disturbance terms;

$$\varepsilon_{it} = \mu_t + v_{i,t} + \alpha_i$$

Following the work of Kyereboah-Coleman (2007) and Kuntluru *et al* (2008), we modeled our work as follows:

$$Y_{it} = \beta_0 Y_{it-1} + \beta_1 FDI_{it} + \beta_2 CV_{it} + \varepsilon_{it} \dots \dots \dots (3.2)$$

Where:

$$\varepsilon_{it} = \mu_t + v_{i,t} + \alpha_i$$

$\mu_t$  = time specific fixed effect

$\alpha_i$  = the unobserved firm specific effect

$v_{i,t}$  = the firm specific time variant effects

$Y_{it}$  = Firm Value represented by Tobin's Q and ROA for firm  $i$  in time  $t = 2008 - 2012$

$Y_{it-1}$  = The lagged values of  $Y$

$FDI_{it}$  = Foreign direct investment for firm  $i$  in time  $t$  and

$CV_{it}$  = vector of control variables,

In estimating our model, we first of all considered the possibility of the existence of endogeneity in our model as earlier studies have argued that firm value and foreign direct investment have bidirectional causality (see: Borensztein *et al.*, 1998; De mello, 1999; Xu, 2000; Alfaro *et al.*, 2004 and Fortainer, 2007). While foreign direct investment inflow is noted to trigger increases in firm values, firm value can also serve as a determinant of foreign direct investment flow to firms and hence endogeneity caused by simultaneity is envisaged. The presence of endogeneity would make OLS estimations inconsistent. We thus tested for the potential endogeneity using the Durbin-Wu-Hausman (DWH) test. This test compares the coefficients obtained from OLS and Instrumental Variable (IV or 2SLS) regressions and test whether they differ significantly. With the 2SLS estimations, the selection of valid instruments for FDI is crucial, thus we followed the works of Borensztein *et al.* (1998), De mello (1999), Xu (2000), Alfaro *et al.* (2004) and Fortainer (2007) and selected the lagged values of FDI as instruments.

The test for the endogeneity is shown in the table below. The results indicate that endogeneity is unlikely to be present in the model as the null hypothesis that OLS estimator of the same equation would yield consistent estimates, could not be rejected. Some scholars (e.g. Borensztein *et al.*,

1998 and Alfaro *et al.*, 2001) established that results they obtained with and without IV estimators were not significantly different thus making the use of IV unnecessary if there is no endogeneity established.

Table 3.4: Endogeneity Test

	Endogeneity of FDI in equation 3 using Tobin's Q	Endogeneity of FDI in equation 3 using ROA
DWH- Test	430 (0.5819)	430 (0.9675)

p-values are reported in parentheses.

Given the nature of our panel (with a small time period of 5 years), we used the System GMM as our estimation tool. The system GMM of Arellano and Bover (1995) and Blundell and Bond (1998) arguably produces better results in small data than difference GMM. This technique is able to correct unobserved firm heterogeneity, omitted variable bias, measurement error and potential endogeneity which affects most panel data estimation (Bond *et al.*, 2001). The system GMM combines in one system the relevant regression expressed in first-differences and in levels. The first-differencing checks for omitted variable bias, unobserved heterogeneity and time-invariant component of the measurement error. It corrects endogeneity by instrumenting the explanatory variables. These instruments for the differenced equations are obtained values of explanatory variables lagged at least twice while instruments for level equations are lagged differences of the dependent variable. Estimating two equations in a system GMM reduces potential bias and other problems associated with a simple first-difference GMM estimator (Arellano and Bover 1995; Blundell and Bond 1998). Scholars have pointed out that when explanatory variables are persistent over time, lagged levels of these variables become weak instruments for regression in differences. Weak instruments too influence the asymptotic and small sample performance of the difference estimator. In small sample, Monte Carlo experiments have demonstrated that weak instruments can produce biased coefficients (Alonso-Borrego and Arellano, 1999 and Blundell and Bond 1998).

The system GMM thus provides for more precision in the estimation as well as correcting for biases beset with the existing studies on the FDI-firm value nexus owing from the introduction of

its extra moments. The system GMM is more suitable for this study in particular for the following reasons. First, it is very effective for short time periods with many firms (Roodman, 2006) thus suitable for our study which has a short time period (five years) with many firms in the various countries. Second, the system GMM makes it possible for us to treat firm value enhancement as a dynamic process, thus accounting explicitly for the possibility that previous firm value may influence future firm value. Third, the use of system GMM grants us the opportunity to control for any possible endogeneity in our model.

Consequently, we specify our general system GMM framework from equation (3.2) as:

$$Y_{it} = \sum_{k=1}^{p} v_k Y_{i,t-k} + \beta_1 FDI_{it} + \beta_2 CV_{it} + \varepsilon_{it} \dots \dots \dots (3.3)$$

Where:

$$t = p + 1, \dots, T; \quad i = 1, 2, \dots, N;$$

P= maximum lag in the model. The other variables remained as previously defined.

The validity of the instruments in our model is checked using the Hansen Sargan test for over-identified restrictions. While the serial correlation test examines the null hypothesis that the error term is serially uncorrelated [whether first, AR (1) or second order, AR (2)], Sargan test examines the exogeneity of the instruments with the null hypothesis that over-identifying restrictions are valid. We limit the number of instrument to the first lag of firm value as the consistency of the Sargan test of over-identification is weakened by many instruments (Roodman, 2009). We also employed the Panel Corrected Standard Errors Estimator (PCSE) as a robustness check for heteroscedastic and contemporaneous cross correlations in the disturbances (Baltagi, 2008).

### 3.4.3 Theoretical Underpinning of the model

**Firm Value-** Firm value can be measured in several ways including productivity, profitability, growth, customers' satisfaction and firm performance. Following the works of Lindenberg and Ross (1981) and Leahy and Whited (1996) we adopted Tobin's Q and Return on Asset (ROA) as the measures of firm value. ROA measures the ability of a firm to generate returns on the assets it employed in the firm. It is an accounting measure of the firm value which relies solely on historical accounting records. Several studies have used only ROA in measuring firm financial performance

(see Tallman and Li, 1996; Hitt *et al.*, 1997; Lu and Beamish, 2001; and Kuntluru *et al.*, 2008). It is, however, argued that ROA does not reflect the current economic value of a firm, since it is based on historical accounting information which neither incorporates future expectations nor it is insulated from manipulations in accounting records. Arising from these shortcomings of the ROA, some studies have adopted the Tobin's Q (see Morck *et al.*, 1988; McConnell and Servaes, 1990, Yermack, 1996).

Tobin's Q as a measure of firm value is defined in diverse ways. Using a very robust and theoretical formula, Lindenberg and Ross (1981) measured Tobin's Q as:

$$L-R\ q = \frac{PREFST + VCOMS + LTDEBT + STDEBT - ADJ}{TOTASST - BKCAP + NETCAP} \quad (3.5)$$

Where **PREFST** is the liquidating value of preference shares, **VCOMS** is the price of firm's ordinary shares multiplied by the number of ordinary shares outstanding at the end of year. **LTDEBT** is the value of the firm's long-term debt adjusted for its age structure, **STDEBT** is the book value of the firm's net short-term assets, **BKCAP** is the book value of the firm's net capital stock and **NETCAP** is the firm's inflation adjusted net capital stock. Similarly, Leahy and Whited (1996) also measured Tobin's Q as:

$$Q = \frac{D + E - INV}{K} \quad (3.6)$$

Where;

*D* = the market value of debt

*E* = market value of equity

*INV* = the replacement value of inventories

*K* = the replacement value of capital stock

Chung and Pruitt (1994), using a series of regressions on readily available balance sheet information, came out with an approximation to the more theoretical robust and correct formula of Tobin's Q as captured above. Testing this empirically, (ibid) established that its approximate q explains up to at least 96.6% of the theoretically robust formulas. Most researchers thus apply this

formula where it becomes difficult to obtain some variables (see Morck *et al.* 1988; McConnell and Servaes, 1990, Yermack, 1996, Kyereboah-Coleman, 2007). Due to data constraints and computational challenges on some variables, this study has adopted the measure by Chung and Pruitt (1994) which combines the two measures in order to holistically capture all aspects of firm value. The same approach was adopted by Kyereboah-Coleman, (2007).

Our Tobin's Q is calculated as follows:

$$\text{Tobin's } Q = \frac{(MVE+PS+DEBT)}{TA} \quad (3.7)$$

Where MVE is the firm's share price multiplied by the number of common shares outstanding, **PS** is defined as the liquidating value of the firm's outstanding preference shares, **DEBT** is measured as a value of the firm's short term liability net of its short-term assets, plus the book value of the firm's long term debt and **TA** is book value of the total assets of the firm.

We include the following as independent variables: dividend payout ratio, net fixed asset, quick ratio, total assets, inventory, age, debt to equity, and leverage. The a priori expectations of all the independent variables in our model are shown in the table below.

Table 3.5: A priori expectation between independent variables and dependent variables

Independent variables	A priori relationship with dependent variable
	<u>Tobin's Q/ROA</u>
DE	+
FDI	+
Inventory	-
DIV	+/-
LEV	+
NFA	+
QR	+
SIZE	+/-
AGE	+/-
IND	+/-

Note: Return on Asset (ROA), dividend payout ratio (DIV), net fixed asset (NFA), quick ratio (QR), total assets (SIZE), inventory, age (AGE), debt to equity (DE), leverage (Lev) and IND(industry)



*FDI*; a firm is referred to as an FDI firm, if foreign firms or investors own at least 10% of the firm's total equity (IMF, 2004). In that regard we compute a dummy variable which takes on the value of 1 if a firm has at least 10% of foreign ownership and 0 if otherwise. The a priori expectation is that FDI inflow should lead to high firm values in host firms. This is premised on the theoretical underpinning that FDI brings in technology, knowledge, skills, and capacity which make host firms competitive, efficient and enhance their productivity and value (Vahter, 2004).

*Dividend payout ratio*: proponents of tax hypothesis argue that firm value is negatively correlated to the dividend payout ratio (Elton and Gruber, 1970) while supporters of signaling theory believe that increase in dividends are a signal for an increase in firm value (Bhattacharya, 1979). This variable is included so as to control for either side of the argument.

*Net Fixed Assets*: it determines the capital intensity of a firm's operation. Kuntluru *et al.*, (2008) has argued that the ability to turn out working capital quickly in some industries suggests positive firm performance since greater utilization of liquid resources is achieved. Therefore, we expect a positive relationship between capital intensity and firm value.

*Quick Ratio*: it measures the ability of a firm to settle its current liability using its cash and other liquid assets only. It reflects both the industry conditions and the firm cash management abilities. Kuntluru *et al.*, (2008) have established a significant positive relationship between quick ratio and firm performance.

*Size*: this has been measured differently in the literature. Belkoui and Karpik (1989) measured it as log of sales, Chen and Metcalf (1980) used total assets as its measure while Waddock and Graves (1997) used total assets, total sales and number of employees as their measures for size. We use log of total assets of the firm as a measure for size. It is argued that large firms are less efficient and hence can lead to low firm value due to lack of managerial control over strategic issues (Lang and Stulz, 1994 and Himmelberg *et al.*, 1999). It is also possible that large firms can increase firm value by way of leveraging economies of scale for production. Therefore, the a priori expectation for the effect of size on performance is either a positive or negative impact.

*Inventory*: this variable, according to Kuntluru *et al.*, (2008) aims to capture the effects of business cycles on the firm performance. It is obvious that every firm has periods where its inventory holdings may be higher than other periods, either due to low demand or vice versa. While Chhiber and Majumdar (1999) found a negative significant relationship between inventory and firm performance, Kuntluru *et al.*, (2008) was unable to find any significant relationship between them.

*Age*: as the firm advances in years, it is believed that it will by then have superior management and more experienced personnel, thus increasing its efficiency. Older firms are therefore expected to have higher firm values than young firms. Contrary to this, it is argued that old firms are slow to adopt to new environments. Therefore, in changing economic environments, older firms are more likely to record lower profits than younger firms. Chhiber and Majumdar (1999) confirmed this assertion when they established a negative significant relationship between age and firm performance.

*Debt to Equity*: the principal agency theory suggests that there is greater monitoring by lenders where there is a higher amount of debt compared to equity. This compels firms to perform better and increases their value. Empirically, however, a conclusion has not been reached on this. While Chhiber and Majumdar (1999) found a positive significant relationship, Kuntluru *et al.*, (2008) found no significant relationship.

*Leverage*: this measures the long-term solvency of the firm. There are contrasting theories on this. While Modigliani and Miller (1958) argue that higher leverage should lead to low firm value, Hall and Weiss (1967) believe that higher leverage should rather give rise to higher value. In supporting Hall and Weiss (1967), Gale (1972) explained that higher leverage means that firms have lower risk levels and that is why it is able to borrow. The reverse, they say, is true for low leverage firms.

*Industry dummy*- this is a category dummy which has been included in order to control for fixed effects of sectorial variations (Liu and Zou, 2008).

The descriptions of both the dependent and independent variables used in the study are outlined in the operationalisation of variables in the table below. In the pooled countries study, we normalised the currencies by converting them into the US dollar as a common currency for all

countries. We used 2010 exchange rates which is a mean year for our data point (2008-2012) for the conversion. For the country specific studies, we maintained the specific country currency for the analysis.

Table 3.6: Operationalization of Variables

<b>Variables</b>	<b>Description</b>
Tobins'Q	It is computed as market value of equity plus book value of assets, minus book value of equity and then divided by the book value of assets. It is expected to be greater than one as an indication that the company is doing well in its investment decision.
ROA	Ratio of operating profits (profit before interest and tax) to total assets.
DE	It refers to debt to equity. It is measured as the ratio of total debt to total equity.
FDI	It is a dummy variable which takes on the value of 1 if foreign investors own at least 10% of the local firm's total equity and zero if otherwise.
DIV	It refers to dividend pay-out-ratio. It is measured as the ratio of dividends to earnings at the year end.
LEV	It refers to leverage. It is measured as the ratio of borrowings to total assets.
NFA	It refers to net fixed assets. It is measured as the ratio of net assets to total assets.
QR	It refers to quick ratio which is measured as the ratio of cash and other short-term realization assets to total current liabilities.
Inventory	It is measured as ratio of inventory investment to total assets
SIZE(Assets)	Defined as the Log of total assets of the firm.
AGE	Measured as the Log of number of years since incorporation of the firm.
IND	This is a categorical dummy representing the sector type. Manufacturing is represented by 0, 1 for other services, 2 for retailing 3 for oil and mining sector while 4 represents financial sector. Manufacturing is the reference point for regression.

## 3.5 EMPIRICAL FINDINGS

### 3.5.1 Descriptive Statistics

Table 3.7 shows the overall descriptive statistics of the combined data for all the firms in the three countries, while tables 3.8, 3.9 and 3.10 illustrate the country specific statistics of the variables. Table 3.16 in the appendix suggests that multi collinearity would not be a problem amongst the independent variables. The average age of the firms is 44 years but there is great dispersion in terms of the firm age. While the youngest firm is just one-year-old, the oldest firm is over 161

years. As expected, firms in South Africa (with a more mature stock market) have the highest average age of 53 years while Ghana and Nigeria have mean averages of 37 years and 39 years respectively. The majority of the firms are financed through local equity.

From the overall panel, the mean Tobin's Q is 1.58 and ROA is 8%. Expectedly, South Africa has the highest mean of 2.31 on Tobin's Q and 12% on ROA. This implies that firms in South Africa have higher performance and value than their counterparts in Nigeria and Ghana. This could be attributed to the well-developed structures, large firm sizes and older and more experienced firms in South Africa as compared to firms in other African countries. It may also be attributable to the high inflow of FDI into firms in South Africa. The majority of the firms have no liquidity problems. The average quick ratio is 1.73 which means these firms can settle all their short-term liabilities without resorting to the sale of their inventory.

Table 3.7: Summary Statistics- Overall (Observations=735)

<b>Variable</b>	<b>Mean</b>	<b>Std. Dev</b>	<b>Min</b>	<b>Max</b>
Tobin's Q	1.58	3.31	0.01	42.69
ROA	0.88	0.14	-0.93	0.93
FDI	0.14	0.34	0.00	1.00
DIV	0.98	6.57	-1.82	100.23
DE	2.83	31.59	-36.10	842.76
Inventory	0.11	0.12	0.00	0.62
Lev	0.27	0.28	0.00	2.35
NFA	0.30	0.24	0.01	0.96
QR	1.73	6.37	0.02	156.49
Log of total assets(SIZE)	13.91	2.24	8.32	19.12
Log of AGE	3.46	0.89	0	5.08

Note: dividend payout ratio (DIV), net fixed asset (NFA), quick ratio (QR), total assets (SIZE), inventory, age (AGE), debt to equity (DE), and leverage (Lev)

Table 3.8: Summary Statistics for Ghana Observations=120)

<b>Variable</b>	<b>Mean</b>	<b>Std. Dev</b>	<b>Min</b>	<b>Max</b>
Tobin's Q	0.99	1.02	0.001	4.36
ROA	0.06	0.13	-0.31	0.39
FDI	0.13	0.33	0.00	1.00
DIV	0.43	0.04	-0.71	10.65
DE	9.30	77.66	-19.23	842.76
Inventory	0.13	0.12	0.00	0.58
Lev	0.33	0.38	0.00	2.35
NFA	0.28	0.25	0.001	0.82
QR	1.02	1.11	0.02	6.23
Log of total assets(SIZE)	11.87	2.77	7.32	18.28
AGE	37.44	25.64	1.00	116

Note: dividend payout ratio (DIV), net fixed asset (NFA), quick ratio (QR), total assets (SIZE), inventory, age(AGE), debt to equity(DE), and leverage (Lev)

Table 3.9: Summary Statistics for Nigeria (Observations=305)

<b>Variable</b>	<b>Mean</b>	<b>Std. Dev</b>	<b>Min</b>	<b>Max</b>
Tobin's Q	1.09	2.92	0.001	42.69
ROA	0.06	0.12	-0.93	0.47
FDI	0.07	0.25	0.00	1.00
DIV	1.50	9.81	-1.84	100.23
DE	1.78	3.87	0.00	32.58
Inventory	0.10	0.13	0.00	0.62
Lev	0.27	0.29	0.00	0.93
NFA	0.31	0.23	0.01	0.89
QR	2.65	9.78	0.04	156.49
Log of total assets(SIZE)	17.07	1.89	13.28	21.68
AGE	38.59	31.01	2	161

Note: dividend payout ratio (DIV), net fixed asset (NFA), quick ratio (QR), total assets (SIZE), inventory, age (AGE), debt to equity (DE), and leverage (Lev)

Table 3.10: Summary Statistics for South Africa (Observations=310)

Variable	Mean	Std. Dev	Min	Max
Tobin's Q	2.31	4.04	0.06	31.56
ROA	0.12	0.14	-0.23	0.93
FDI	0.23	0.41	0	1
DIV	0.68	2.59	0	32.45
DE	1.34	3.66	-36.10	14.91
Inventory	0.11	0.10	0	0.44
Lev	0.25	0.23	0	0.89
NFA	0.30	0.26	0.01	0.96
QR	1.10	0.79	0.03	6.02
Log of Total Assets (SIZE)	16.87	1.31	14.33	21.16
AGE	52.74	36.41	1	127

Note: dividend payout ratio (DIV), net fixed asset (NFA), quick ratio (QR), total assets (SIZE), inventory, age(AGE), debt to equity(DE), and leverage (Lev)

### 3.5.2 Regression Results

For all our estimations, we made use of STATA 12 software in generation our results. The results of our system GMM are indicated in table 3.11. From the results, it is realised that Both ROA and Tobin's Q are found to have positive significant relationships with their lagged values, implying that the past performance of firms has a direct positive impact on the future performance of the firms. On the substantive variables in the study, we have found that there is a positive relation between FDI and firm value. This is depicted by the significant positive relationship between FDI and Tobin's Q. An increase in FDI flow to firms will therefore lead to an increase in the value of the host firm. This is in tandem with the findings of Yasar and Paul (2007) and Kuntluru *et al* (2008). The results are not, however, significant with ROA though the positive relationship between firm value and FDI is still maintained here too. There are possible reasons for this non-significant impact of FDI on firm value using the ROA in this study. First, the accounting based measure of firm value as noted for its usage of historical records in assessing value instead of current state of the firm (see, McConnell and Servaes, 1990, Yermack, 1996), it is thus possible that this measure does not capture the true picture of value enhancement in these firms that is why no evidence is shown of the significant effect of FDI on firm value. Second, given that the accounting based measure is subject to a lot of manipulation and personnel errors in accounting, it is plausible to suggest that this measure has suffered some of these challenges. This maybe

particularly so because management may want to avoid payment of high taxes thus manipulating their accounting records so as to pay less taxes. It can also emanate from the inefficiency of accounting record keeping by staff in these firms given also that developing countries lack high skilled labour.

The positive link between FDI and firm value realized from our findings suggest that FDI flowing into these firms in the selected countries are very beneficial to the firms and not destructive as far as value creation is concerned. The findings suggest that firm specific advantages inherent in the firms moving into the host firms are transferable and hence it does not matter the motive of the FDI embarked by the MNE (Barney, 1991). The possible channels through which FDI creates values in these firms could be in a number of ways. First, FDI inflows into the host firms increases the capital base of the host firms. With enhanced capital base, these FDI based firms are able to employ and possibly maintain the best human force, and acquire quality machinery needed for effective and efficient operations of their activities (Lall, 2000). More also with the enhanced capital based, quality research and development activities are conducted in the firms paving way for innovative ways of conducting their operations. This is particularly so as firms in African countries like other developing world are bedeviled with inadequate capital and weak research and development bases (Fu, 2008 and Xu and Sheng, 2012).

Second, the inflows of FDI into these firms also allows the host firms the chance to benefit by receiving for free the firm specific advantages of the MNE. These could be in the form of technological knowledge, administrative knowledge and reputational resources inherent in the MNE from advanced countries (Yang *et al.*, 2013). These free resources available to FDI based firms help them to adopt novel ways and best acceptable ways of conducting their affairs. This is very crucial as African firms are found to be very weak in terms of innovation and technology application (Dutta *et al.*, 2015). Third, MNEs grant some human resources to host firms from their home countries by way of staff secondments. This accords the host firm staff the opportunity to benefit enormously by learning and adopting other better and efficient ways of conducting their operations. Besides, these foreign staff also helps to improve the corporate governance systems in these firms which obviously have direct positive relationship with firm value enhancement.

On the control variables, debt to equity, leverage, size, age and quick ratio are established to be significant. While debt to equity, size and leverage has a negative relationship with firm value,

quick ratio and age have a positive relationship with firm value. The larger a firm is, the lower the value of the firm. This contradicts the findings of Hall and Weiss, (1967), Trevino and Grosse, (2002) and Kuntlure *et al.*, (2008) who established that firm size positively influences the profitability of a firm. On the other hand, the more liquid a firm is the higher the firm value. This finding goes to support the works of Chhiber and Majumdar (1999) who found a positive significant relationship between liquidity and firm value. On the contrary, the higher the debt to equity ratio of a firm, the lower the firm value. It is against the findings of Chhiber and Majumdar (1999) who found a positive significant relationship between debt to equity and firm performance. The higher the gearing ratio of a firm is, the lower the firm value as established by our results. It supports the theory of Modigliani and Miller (1958) that overly geared firms have lower values and supports the findings of Kuntluru *et al.*, (2008). After controlling for sector effect, the results remained the same. It is, however, noted that the core services sector and the financial service sector both have negative significant impacts on firm value as compared to the manufacturing sector while the retail sector impacts more positively on firm value than the manufacturing sectors. The rest of the independent variables are found to be insignificantly correlated with firm values.

Country specific results are shown in tables 3.13 to 3.15. While FDI has a positive significant relationship with firm value in South Africa and Nigeria using the Tobin's Q, there is no significant relation using the ROA. In Ghana, however, while there is no significant relationship between FDI and firm value through the Tobin's Q, there is a strong positive significant relationship between firm value and FDI using the ROA as a measure of firm value. A possible explanation for this is that FDI has a significant impact on the market based measure of value for contexts with comparatively longer and more matured stock market activity (South Africa (established 1887 with 472 listed firms) and Nigeria (established 1960 with a total of 169 listed firms) and hence with a relatively long history to more appropriately assess firm value. In this case accounting measures are forced to adjust towards market measures. This is different from the Ghana Stock exchange (established in 1989 with 40 listed firms). In this situation accounting measures of firm value may dominant market based measures. This goes to support our argument that context and the measure of firm value are very critical and important in the study of the link between FDI and firm value in Africa. For instance, any study that uses only the market measure of firm value in the study of the link between FDI and firm value will conclude on the theory that there is no link between the



two variables whereas the usage of the adoption of the accounting measure will conclude on the theory that there is positive link. However, applying either measure on Nigeria and South Africa, will conclude on the theory that FDI has positive impact on firm value. It is very important that in examining this link, cross countries data are not pooled together but are investigated separately to observe these intricacies. Besides, it is very imperative from the results that in studying this link, varied measures of firm values are employed.

On the whole, FDI is seen as a value enhancer in all the countries of the study. This is contrary to the findings of Waldkirch and Ofori (2010) and Bwalya (2006) who found a negative link between FDI inflows and firm performance, but in line with Abor (2010) and Foster-McGregor *et al.*, (2015) who found a positive link between FDI and firm value. What explains our current findings? The inflows of FDI grants host firms the chance to access foreign technology so as to be able to introduce more advanced and efficient way of carrying out their business. FDI firms thus perform better than non-FDI firms. FDI firms also gain large scale advantages and have access to external finance, which has been a bane to most African enterprises. FDI again enables host firms the chance to have superior management techniques and foreign expertise, which would not normally be available to non-FDI firms, especially those that are not so strongly resourced (Bellak, 2004). Our findings have been unique in the sense that while most of the past studies have explored the spillover effect of FDI on domestic firm value, we have examined the impact of FDI on the host firms themselves. We also note that this effect of FDI on firm value may not be evident if one does not correctly control for endogeneity. This further justifies our study and explains the consistent positive relationship we find.

To further assure ourselves that our results are very robust and consistent, we employed the fixed effect(FE) and panel corrected standard errors(PCSEs) estimators in our combined data estimation and used only the PCSEs for our individual country studies. We used this estimator alone for the individual country study because of the small data size of the individual country study. In the combined data, we realized that the relationship between the FDI and Tobins'Q is again significant and using both FE and PCSEs estimators which lent a strong support to our system GMM estimations we had. When we run our regressions of FDI on ROA we noticed that while the estimator FE produced no evidence of any relationship between the variable of concern, we

realized a positive significant relationship between them in our PCSEs estimators. In the case of our individual country study, we have the same results as we got by the use of the system GMM.

Table 3.11: System GMM Regression Results (All countries)

Independent Variable	Dependent Variables	
	Tobin's Q	ROA
Tobin's Q lagged (-1)	0.49(18.55) ***	
ROA lagged (-1)		0.29(3.75) ***
FDI	1.17(4.85) **	0.01(0.75)
DIV	-0.001(-0.75)	0.00(1.00)
DE	-0.001(-2.23) **	0.00(1.12)
Inventory	0.90(0.64)	0.03(0.28)
Lev	-0.05(-0.14)	-0.09(-1.83) *
NFA	1.80(1.20)	0.02(0.21)
QR	0.00(0.47)	0.01(7.02) ***
Log of SIZE	-0.23(-1.47)	-0.01(-2.11) **
Log of AGE	1.43(1.74) *	0.07(2.50) **
Constant	-5.48(-6.32) ***	-0.05(-1.09)
Wald $\chi^2$	655.87[0.0000]	118.19[0.0000]
Hansen Sargan test:		
Prob > $\chi^2$	0.1128	0.2317
Chi2(13)	19.6484	10.5002
AR (1) p-value	0.0648*	0.0281**
AR (2) p-value	0.3883	0.6391
AR (1) z	-1.8464	-2.1952
AR (2) z	0.8627	0.4690
Observations	588	588
Number of firms	147	147

t-statistics in parentheses

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

Note: dividend payout ratio (DIV), net fixed asset (NFA), quick ratio (QR), total assets (SIZE), inventory, age (AGE), debt to equity (DE), and leverage (Lev)

Table 3.12: Panel Corrected Standard Errors (PCSEs) and Fixed Effect (FE) Regression Results

Independent Variable	Dependent Variables			
	Tobin's Q		ROA	
	RE	PCSE	FE	PCSE
FDI	1.67(4.42) ***	0.78(2.99) **	0.01(0.46)	0.04(3.81) ***
DIV	0.001(0.17)	-0.00(-0.40)	0.02(4.78) ***	0.001(1.75) *
DE	-0.002(-0.13)	-0.001(-1.81) *	0.00(0.16)	-0.001(-1.06)
Inventory	-0.23(-0.17)	1.69(3.37) **	0.04(0.47)	0.23(7.91) ***
Lev	-0.36(-0.70)	0.47(1.63)	-0.13(-4.25) ***	-0.16(-7.74) ***
NFA	-0.99(-1.43)	-1.74(-6.89) ***	-0.06(-1.36)	0.05(4.23) ***
QR	-0.002(-0.15)	-0.01(-1.81)	0.001(0.93)	0.001(1.33)
Log of Asset(SIZE)	-0.13(-1.57)	-0.011(-0.66)	-0.007(-0.85)	0.006(3.72) ***
Log of AGE	0.27(1.08)	0.25(5.90) ***	0.02(0.60)	-0.001(-0.28)
Services		-1.142(0.09) ***		-0.0349 (0.01) **
Retailing		0.824 (0.13) ***		0.00939(0.01)
Oil & Mining		0.334(0.21)		0.0101(0.008)
Financial Services		-1.389 (0.19) ***		-0.0876(0.01) ***
Constant	3.02(1.81)	1.46(8.04) ***	0.16(1.81)	0.07(8.23) ***
Wald $\chi^2$		206.26[0.0000]		1862.77[0.0000]
Test of Prob.(F-test)	24.72[0.0033]		578[0.0000]	
Hausman test:				
Chi2(9)	9.18		18.38	
Prob> $\chi^2$	0.4208		0.0316	
R-Square	0.0415	0.0528	0.0347	0.2220
Observations	735	735	735	735
No. of firms	147	147	147	147

t-statistics in parentheses

\*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1

Note: dividend payout ratio (DIV), net fixed asset (NFA), quick ratio (QR), total assets (SIZE), inventory, age (AGE), debt to equity (DE), and leverage (Lev)

Table 3.13: Panel Corrected Standard Errors (PCSEs) and System GMM Regression Results for South Africa

Independent Variable	Dependent Variables			
	Tobin's Q		ROA	
	System GMM	PCSE	System GMM	PCSE
Tobin's Q lagged (-1)	0.65(21.87) ***			
ROA lagged (-1)			0.07(2.27) **	
FDI	0.76(3.57) ***	0.49(2.38) ***	0.3(1.28)	0.04(3.88) ***
DIV	-0.01(-1.73)	0.09(1.57)	0.02(58.75) ***	0.02(9.11) ***
DE	-0.07(-1.01)	-0.15(-2.34) **	0.01(52.40) ***	0.005(5.29) ***
Inventory	3.85(2.01) **	5.74(4.45) ***	0.69(5.37) ***	0.28(7.86) ***
Lev	-2.70(-3.14) ***	1.18(1.60)	-0.16(-7.75) ***	-0.19(-6.95) ***
NFA	4.03(3.06) ***	-2.00(-7.66) ***	0.06(1.41)	0.11(7.21) ***
QR	0.08(0.69)	0.03(0.34)	0.001(0.44)	0.03(2.87) ***
Log of Asset(SIZE)	-0.49(-3.27) ***	-0.32(-5.26) ***	-0.012(-1.92) *	0.002(0.04)
Log of AGE	2.67(3.29) ***	0.04(0.79)	0.06(3.14) ***	-0.001(-0.10)
Services		-2.057(0.20) ***		0.0549(0.01) ***
Retailing		1.083(0.22) ***		0.0954(0.02) ***
Oil & Mining		0.0761(0.35)		0.147(0.02) ***
Financial Services		-2.665(0.32) ***		-0.0242(0.02)
Constant		2.07(13.38) ***		0.04(1.53) **
Wald $\chi^2$	1931.35[0.0000]	1100.90[0.0000]	176193[0.0000]	1654.82[0.0000]
R-Square		0.1033		0.3388
Hansen Sargan test:				
Prob > $\chi^2$	0.1352		0.1718	
Chi2(13)	18.6257		17.6369	
AR (1) p-value	0.0989*		0.0324*	
AR (2) p-value	0.1987		0.1895	
AR (1) z	-1.6503		-2.1398	
AR (2) z	-1.2853		0.1895	
Observations	248	310	248	310
Number of firms	62	62	62	62

T-statistics in parentheses

\*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1

Note: dividend payout ratio (DIV), net fixed asset (NFA), quick ratio (QR), total assets (SIZE), inventory, age (AGE), debt to equity (DE), and leverage (Lev)

Table 3.14: Panel Corrected Standard Errors (PCSEs) and System GMM Regression Results for Nigeria

Independent Variable	Dependent Variables			
	Tobin's Q		ROA	
	System GMM	PCSE	System GMM	PCSE
Tobin's Q lagged (-1)	0.26(74.97) ***			
ROA lagged (-1)			0.54(5.11) ***	
FDI	2.13(24.22) *****	2.27(2.04) **	-0.001(-0.34)	-0.001(-0.68)
DIV	0.001(0.25)	0.007(2.81) ***	-0.00(-0.04)	0.001(2.46) **
DE	0.001(0.03)	-0.07(-1.90) *	-0.10(-4.33) ***	-0.001(-1.39)
Inventory	0.10(0.13)	-0.62(-0.96)	-0.10(-1.65) *	0.27(7.57) ***
Lev	-0.11(-0.17)	2.88(2.69) ***	-0.15(-3.45) **	-0.13(-4.48) ***
NFA	0.57(0.82)	-0.90(-1.97) *	-0.15(-2.01) **	0.05(2.42) **
QR	0.001(0.04)	-0.001(-0.19)	0.001(5.78) ***	0.00(1.44)
Log of Asset(SIZE)	-0.20(-3.06) ***	-0.46(-2.77) ***	-0.001(-1.36)	0.009(3.43) ***
Log of AGE	1.25(3.81) ***	0.25(3.26) ***	0.03(2.15) **	-0.008(-1.84) *
Services		-1.788(0.36) ***		-0.129(0.01) ***
Retailing		-1.091(0.14) ***		-0.0513(0.01) ***
Oil & Mining		-0.804(0.19) ***		-0.0881(0.01) ***
Financial Services		-0.933(0.17) ***		-0.158(0.024) ***
Constant		0.96(3.51) ***		0.06(4.37) *****
Wald $\chi^2$	7015.05[0.0000]	74.00[0.0000]	109.20[0.0000]	1753.22[0.0000]
R-Square		0.0995		0.2776
Hansen Sargan test:				
Prob > $\chi^2$	0.1777		0.6361	
Chi2(5)	11.4451		6.0991	
AR (1) p-value	0.1629		0.1695	
AR (2) p-value	0.2294		0.9585	
AR (1) z	-1.3953		-1.3737	
AR (2) z	1.2020		-0.0520	
Observations	244	305	244	305
Number of firms	61	61	61	61

T-statistics in parentheses

\*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1

Note: dividend payout ratio (DIV), net fixed asset (NFA), quick ratio (QR), total assets (SIZE), inventory, age (AGE), debt to equity (DE), and leverage (Lev)

Table 3.15: Panel Corrected Standard Errors (PCSEs) and System GMM Regression Results for Ghana

Independent Variable	Dependent Variables			
	Tobin's Q		ROA	
	System GMM	PCSE	System GMM	PCSE
Tobin's Q lagged (-1)	0.64(3.76) ***			
ROA lagged (-1)			0.65(7.55) ***	
FDI	0.09(0.39)	0.01(0.08)	0.09(2.37) **	0.03(1.74) *
DIV	-0.11(-10.61) ***	0.14(0.75)	-0.02(-12.39) ***	-0.001(-0.91)
DE	-0.001(-3.02) ***	-0.001(-1.42)	0.001(5.95) *****	-0.001(-0.80)
Inventory	0.73(1.32)	1.33(2.65) ***	-0.13(-1.15)	0.46(4.89) ***
Lev	-0.04(-0.26)	-0.33(-2.42) **	-0.08(-2.13) **	-0.11(-4.08) ***
NFA	1.51(3.08) **	0.76(2.09) **	-0.04(-0.38)	-0.06(-1.63)
QR	0.07(2.31) **	0.19(3.12) ***	0.02(2.20) **	0.03(7.85) ***
Log of Asset(SIZE)	-0.01(-0.40)	-0.01(-0.34)	-0.01(-0.67)	0.01(3.17) ***
Log of AGE	0.21(3.52) ***	-0.22(-3.07) ***	0.02(0.39)	0.01(2.04) **
Services		-0.554(0.24) **		-0.0544(0.04)
Retailing		-1.183(0.26)***		-0.0182(0.02)
Oil & Mining		-0.243(0.45)		-0.200(0.05)***
Financial Services		-1.710(0.38)***		-0.198(0.02)***
Constant		0.36(1.96) *		0.02(1.5)
Wald $\chi^2$	5454.91[0.0000]	546.43[0.0000]	606.86[0.0000]	581.18[0.0000]
R-Square	0.1683			0.4357
Hansen Sargan test:				
Prob > $\chi^2$	0.2660		0.1571	
Chi2(8)	9.9854		14.4379	
AR (1) p-value	0.2377		0.2142	
AR (2) p-value	0.7129		0.2522	
AR (1) z	-1.1808		-1.2420	
AR (2) z	0.3680		-1.1451	
Observations	94	120	94	120
Number of firms	24	24	24	24

T-statistics in parentheses

\*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1

Note: dividend payout ratio (DIV), net fixed asset (NFA), quick ratio (QR), total assets (SIZE), inventory, age (AGE), debt to equity (DE), and leverage (Lev)

### **3.6 CONCLUSION**

This study investigated the relationship between FDI and firm value in SSA. Using firm level data from Ghana, Nigeria and South Africa, the study established that FDI has positive significant impacts on firm value. This positive relationship between FDI and firm value in the selected countries can be attributed to technological transfer, managerial transfer, innovation transfer and skills transfer in favour of the host firms.

Besides, host firms are able to expand their financial sources, thus making it possible to increase productivity and employ the best and efficient techniques in their activities. Added to the above, with the access to external sources of finance together with the local sources, such host firms are financially well equipped to employ managers with international exposure and skills and are able to adopt good corporate and best management practices.

Based on this we recommend that policies that can attract more FDI be implemented. These include attractive tax incentives and tax holidays to woo more FDI and also infrastructure development (for instance electricity, water, road networks and telecommunication) to facilitate the ease of doing business in host countries and attract more FDI. Apart from these, restrictions on the repatriation of profits and local content requirements could be relaxed to some extent so as to give some degree of control to foreign investors regarding their investment. In addition, good corporate governance principles must be institutionalised at the firm level, so as to assure foreign investors full protection regarding their investment.

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**APPENDIX 1**

Table 3.16: Correlation among variables

	1	2	3	4	5	6	7	8	9	10	11
1.Tobin's Q	1.00										
2.ROA	0.16*	1.00									
3.FDI	0.07	0.04	1.00								
4.DIV	-0.01	0.10*	-0.02	1.00							
5.DE	-0.02	-0.07	-0.01	-0.01	1.00						
6.Inventory	0.09*	0.30*	-0.03	0.08*	0.01	1.00					
7.Lev	-0.03	-0.39*	0.13*	-0.06	0.12*	-0.23*	1.00				
8.NFA	-0.08*	0.17*	0.09*	0.01	0.04	0.16*	-0.14*	1.00			
9.QR	-0.02	0.02	-0.04	-0.02	-0.02	-0.11*	-0.13*	-0.07*	1.00		
10.SIZE	-0.11*	-0.22*	0.02	-0.01	0.03	-0.25*	0.45*	-0.28*	-0.04	1.00	
11.AGE	0.14*	-0.14*	-0.01	0.01	0.01	-0.03	0.24*	0.18*	-0.03	-0.01	1.00

Note: dividend payout ratio (DIV), net fixed asset (NFA), quick ratio (QR), total assets (SIZE), inventory, age (AGE), debt to equity (DE), and leverage (Lev)

## CHAPTER FOUR

### FOREIGN DIRECT INVESTMENT AND CORPORATE SOCIAL RESPONSIBILITY: EVIDENCE FROM SOUTH AFRICAN LISTED FIRMS<sup>3</sup>

#### 4.1 INTRODUCTION

Corporate Social Responsibility (CSR) has in recent times attracted the attention of scholars globally (see: Goyal 2006; Frynas 2008; Kunetsov *et al.*, 2009; Arli and Lasmono, 2010; Du *et al.*, 2010; Gonzalez-Perez *et al.*, 2011; Margolis and Walsh 2013; Nyuur *et al.*, 2014; Nyuur *et al.*, 2016). CSR equips firms to build a corporate image, gain legitimacy, adapt to opportunities, and maximise profits (Goyal, 2006; Frynas 2008; Kunetsov *et al.*, 2009 and Du *et al.*, 2010). It has been documented that there is a theoretical link between foreign direct investment (FDI) flow and CSR performance in host firms (Goyal 2006, Gonzalez-Perez *et al.*, 2011). Specifically, FDI firms transfer superior best practice socially responsible traits as part of their image building and capital transfer to host firms. In this regard firms with FDI are more likely to increase their CSR activities as opposed to non-FDI related firms (Mehta, 2003; Goyal, 2007 and Suzuki *et al.*, 2007). Many boards of FDI firms thus devote valuable time and resources to the practices of CSR due to the increase in FDI flows (Levy, 2007; Kolt and van Tulder, 2010 and Gonzalez-Perez *et al.*, 2011).

However, there are others who also think that foreign investors are short-sighted in their interest and hence would prefer to concentrate on realising short-term financial profit to the building of an image for the firm, a more future orientated approach (Ahamadjian and Robbins, 2005 and Reinhardt *et al.*, 2008). These critics argue further that FDI has a negative impact on CSR of host firms. The contradictory stance in the literature poses a theoretical gap and a corporate challenge and raises the question: does FDI enhance or retard CSR? The empirical literature is similarly mixed in terms of the link between FDI and firm CSR performance. While some authors (Chapple and Moon, 2005; Suzuki *et al.*, 2010 and Bardy *et al.*, 2011) find a positive impact of FDI on CSR, others like Amran and Devi, (2006) and Scholtens (2007) document contrary evidence where on

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<sup>3</sup>This paper has been presented in the 2016 African Review of Economics and Finance Conference organized at Kwame Nkrumah University of Science and Technology, Kumasi, Ghana from 11-12<sup>th</sup> August, 2016 and is currently under review in a journal.



the one hand FDI has no impact on CSR and on the other hand it negatively affects the CSR performance of host firms. There is also the issue of endogeneity between FDI and CSR, which presents another gap mostly ignored in the empirical literature, although there is the proposition that CSR can equally be a signal to attract FDI (see Goyal 2006). Based on these clear gaps in the literature, this study examines the impact of inward FDI on CSR performance of South African firms. Our choice of South Africa is motivated by a number of factors.

Empirically, there is a dearth of evidence in sub-Saharan Africa (SSA) on the link between FDI and CSR performances. Most of the studies on the FDI and CSR link are based on more advanced economies (see: Chapple and Moon, 2005; Amran and Devi, 2006; Dam and Scholtens, 2007; Suzuki *et al.*, 2010; Gonzalez-Perez *et al.*, 2011 and Bardy *et al.*, 2011). The few studies in SSA are Nyuur *et al.*, (2016) and Kuada and Hinson (2012) which have also been centered on Ghanaian firms. The context of CSR in Ghana can, however, be very different from other African economies and hence one would expect variations in the FDI - CSR link across countries. Besides, these two studies in Ghana have both used cross section data making use of a primary data approached administered by the researchers. As a result, they have not been able to check the time variant effect on the phenomena. Again Nyuur *et al.*, (2016) and Kuada and Hinson (2012) did not directly test for the effect of FDI on CSR-they looked at the factors that influence CSR uptake of local firms. Like other studies in the advanced economies, these studies did not also control for the endogeneity between FDI and CSR.

The choice of South Africa for this study is premised on two main reasons. First, part of our dataset (PIC survey index) used for this study is only available for South Africa. The survey has not yet been extended to any African country. As a result, all the previous studies on the phenomena have used primary data collected for one-time period. This has made it very difficult for such studies to explore deeply the time effect of FDI on CSR. To avoid the usage of cross section data only we have made use of the unique data collected by the PIC over a three-year period so as to be able to analysis the situation over some time and hence our focus on South Africa alone. Second, South Africa is dominant in both FDI attraction and CSR performance in SSA. South Africa is one of the largest recipients of FDI inflows into Africa. When it comes to the adoption and performance of CSR, South Africa is not only a leader in SSA, but it is also a major player in CSR adoption in the world, following its adoption of the Socially Responsible Investment Index project and the

principles of various King Reports on Corporate Governance. It is hence very interesting to examine the link between FDI and CSR so as to ascertain whether or not the greater inflows of FDI into firms in South Africa has consequences on these firms' adoption of CSR.

Essentially our study makes two main contributions to the body of literature. It is the first study to empirically examine the relationship between FDI and CSR in a broader way by using a unique and comprehensive measure of CSR from the Public Investment Corporation (PIC) Governance Survey in South Africa. Unlike previous studies (for example Goyal 2006; Frynas, 2008; Gonzalez-Perez *et al.*, 2011; Margolis and Walsh, 2013 and Nyuur *et al.*, 2016), where CSR is measured by using only governance, or only legal or only environmental or only philanthropic issues or a combination of them in a limited manner, the PIC data comprehensively captured CSR under three broad areas: governance, social and environmental. Under governance, issues captured include board composition, the performance of the board of directors, the qualification and performance of executive management, remuneration of board of directors, treatment of shareholders, internal control mechanisms, disclosure and reporting, corporate culture and reports on sustainability. The social aspects include: the firm commitment regarding the UN Global Compact, human right issues, ownership and employment equity, health and safety, corporate responsibility and percentage of disabled employees. Finally, on environment, the survey had questions on total greenhouse gas emissions, mitigating factors on environmental pollution, environmental performance of the firm's contractors and suppliers, adoption of environmental friendly technologies, and promotion of environmental responsibility amongst other issues. The full description of the survey can be seen in the appendix 4. Secondly, we control for contemporaneous cross-correlation effects from the firms in the panel set, as well as for endogeneity between FDI and CSR.

The rest of the chapter is organized as follows: section 4.2 and 4.3 examine the overview of CSR and FDI in South Africa respectively, section 4.4 reviews related literature while section 4.5 focuses on the methodological issues. Section 4.6 presents the empirical analysis and results while section 4.7 concludes the study.

## **4.2 OVERVIEW OF CORPORATE SOCIAL RESPONSIBILITY IN SOUTH AFRICA**

South Africa has championed CSR in Africa primarily due to two major developments. These are the King Reports and the Johannesburg Stock Exchange (JSE) Socially Responsible Investment Index Project (SRI). The first King Report was documented in 1992 and published in 1994 in South Africa. It was made up of codes of corporate practices and conducts designed to promote the highest standards of corporate governance in South Africa through an integrated approach to good governance in the interest of a wider range of stakeholders (Anon, 2002 and Payne, 2002). In 2002, the King Report was updated into King II following legislative advancements and global economic and environmental evolution. King II was compiled to ensure that firms incorporate high ethics and standard of corporate governance, thus bringing in the importance of non-financial, social and environmental issues (Annon, 2002; Freemantle and Rockey, 2004). Since the coming into existence of King II, organisations in South Africa have redirected their commitment to the “triple-bottom-line” as against the “double-bottom-line” which focuses more on financial achievements. King II report placed more emphasis on CSR and it is thus noted as one of the first attempts by an African nation to outline responsibility for itself (Blowfield and Saffer, 2002). King III which came into effect in 2010, did not only maintain the support for CSR as championed by King II but it went further to broaden the code application from only financial institutions, public enterprises or listed firms on JSE to all firms, whether listed or not, operating in South Africa. It means that all firms are expected to comply with the King report or explain why they are not complying. King IV was published on 1st of November, 2016 but took effect from 1st April 2017 as a replacement of King III. Instead of applying or explaining as advocated by King III, King IV recommends apply and explain, meaning all firms are expected by King IV to apply all the principles with no exception.

The Socially Responsible Investment (SRI) index was launched in 2004 by the JSE to accomplish the following objectives:

1. To identify firms on the JSE that integrates the principles of triple bottom line and good governance in their operations.
2. To provide a tool for a broader assessment of firm policies and practices against globally aligned and locally relevant corporate responsibility standards.
3. To serve as a vehicle for responsible investment for investors.

4. To contribute to the development of responsible business practice in South Africa and beyond.

The issues examined under environment include: working towards environmental sustainability and addressing all key environmental issues while the societal issues include: training and development, employee relations, health and safety, equal opportunities, community relations, stakeholder engagement, black economic empowerment and HIV/AIDS. Under governance and related sustainability issues are: board practices, ethics, indirect impacts, business value and risk management and broader economic issues while climate change variables include: managing and reporting on efforts to reduce carbon emissions and how to deal with climate change. Every company listed on the JSE is qualified to be assessed for inclusion into the SRI index if it meets the above explained requirements.

The SRI index is hence used as a yardstick for investors to measure a firm's performance on CSR (Annon, 2003). Investors see the JSE as an ideal neutral platform to view a company's social responsibility performance as well as financial performance. It is established that investors seek to invest in companies that demonstrate good CSR records, hence an increasing number of firms have embraced CSR (Diale, 2003). The Johannesburg Stock Exchange (JSE) is also the first exchange, since 2004, in the world to make public the SRI index for listed companies (Brady 2004; Newton-King and Le Roux, 2004).

### **4.3 OVERVIEW OF FDI FLOW IN SOUTH AFRICA**

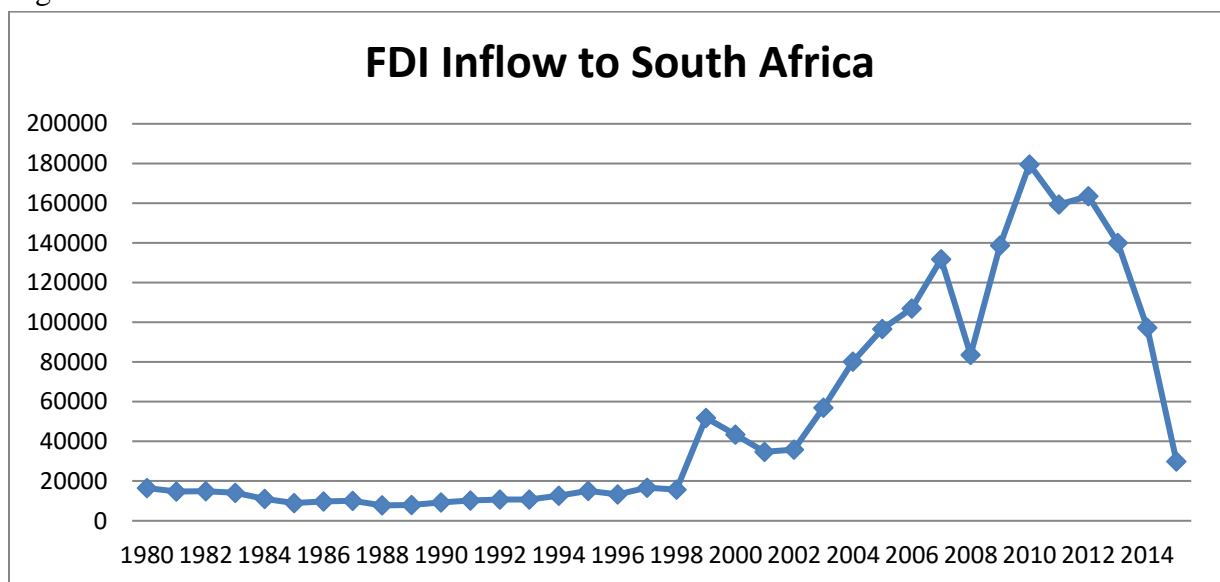
South Africa had seen on average an upward trend in FDI inflows since the 1990's but assumed a sharp decline during 2008-2009-the peak of the global economic crisis. FDI inflow picked up again rose sharply to a peak in 2010 (Figure 4.1).

Some factors that accounted for the high attraction of FDI into the country include: a transparent regulatory framework, a large population, availability of raw materials, political stability, a sophisticated banking and financial system and a well-developed infrastructure. There was a slight drop in 2011 and 2012 but from 2013 onwards FDI assumed a steep decline in South Africa. Despite this decline, South Africa is still ranked as an attractive FDI destination in Africa (EY, 2014). To arrest this decline, the government of South Africa established a number of steps to spur up FDI into the economy. Some of these steps are the passage of a new legislation (Protection of

Investment Act 22) in 2015 which is meant to further strengthen investor protection in the country, the provision of a foreign investment grant<sup>4</sup>, the provision of industrial development zone incentives<sup>5</sup> and the provision of a 12% tax incentive to Greenfield investment in the manufacturing sector.

FDI in South Africa originates mostly from the UK and the Netherlands. For instance, the UK accounted for about 46% of inflows in 2012 followed by the Netherlands with 18.6% (Figure 4.3). The dominance of these countries in FDI inflows could be attributed to their historical ties to South Africa. This dominance has increased for the Netherlands and other countries but, however, reduced considerably for the UK recently. By 2015 the inflows from Netherlands and other countries had increased from 18.6% to 24% and 15% to 36% respectively, whilst that of the UK dropped significantly to 30%.

Figure 4.1 FDI Inflow to South Africa



Source: UNCTAD, 2016

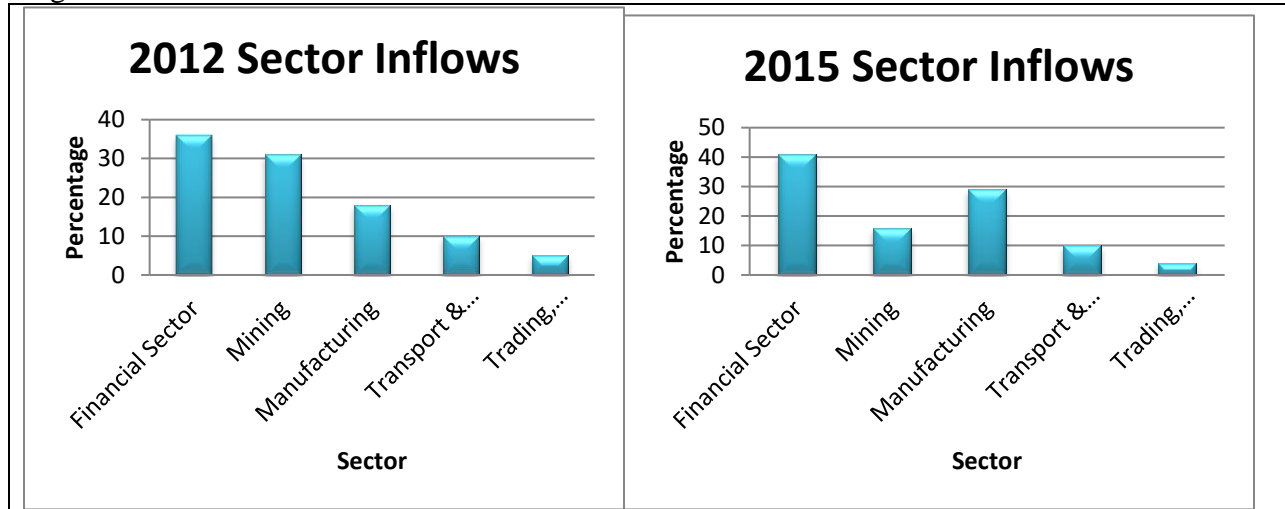
FDI flows to two main sectors in South Africa; mining and the financial sector (Figure 4.2). The two sectors alone received about 67% of all inflows in 2012 and 77% of the total inflows in 2015. This could be attributed to the fact that South Africa is a resource rich country with a well-

<sup>4</sup> A cash grant which provides up to 15% of the value of new machinery and equipment.

<sup>5</sup> It provides duty free import of production related materials and zero VAT on materials sourced from South Africa

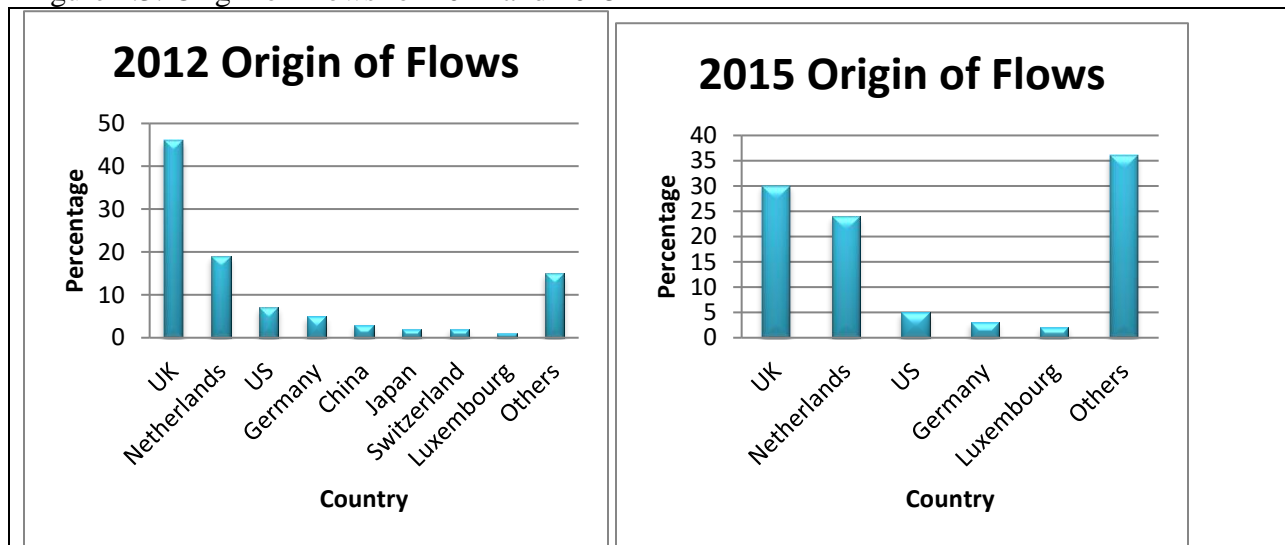
developed financial sector making it attractive and easy for foreign investors to commit their resources. It is worth noting that FDI to the financial sector increased significantly from 36% in 2012 to 41% in 2015, but dropped from 31% to 29% in the mining sector. The recent mining tragedies, especially that of Marikana<sup>6</sup>, as well as the depressed gold and platinum prices, could have dampened the inflow of FDI into the mining sector.

Figure 4.2: Sector Inflows for 2012 and 2015



Source: South Africa Reserve Bank, 2016

Figure 4.3: Origin of Flows for 2012 and 2015



Source: South Africa Reserve Bank, 2016

<sup>6</sup> From 14th August to 16th August 2012 a protest by mining workers turned violent and following that 47 miners, police and security guards were killed while a total of 78 miners were wounded.

## 4.4. REVIEW OF RELEVANT LITERATURE

### 4.4.1 Theoretical Literature

The definition of CSR is one of the heavily contested concepts; as such no consensus has yet been reached in the literature (Matten and Moon, 2008). It is hence not uncommon to find differing definitions in the literature of the same concept. One such definition is postulated by Carroll, who sees CSR as “*economic, legal, ethical and discretionary expectations that society has on organisations at a given point of time*” (Carroll, 1979:500). The European Commission, on the other hand, defines it as a “*concept whereby companies integrate social and environmental concerns in their business operations and in their interaction with their stakeholders on a voluntary basis*” (Commission, 2001:366). Closely related to this definition is that of Business for Social Responsibility. It defines CSR as “*Operating a business in a manner that meets or exceeds the ethical, legal, commercial and public expectations that society has on business.*” (Business for Social Responsibility). Despite the varying definitions, a common theme that emerges is the responsibility of satisfying both shareholders and stakeholders of a business simultaneously. Thus, business operations must be carried out in such a way as to be environmentally friendly, ethically friendly, legally acceptable and customer-oriented.

The theoretical linkage between FDI and CSR has two opposing stances: there are proponents of the positive effect FDI have on the CSR of firms and there are opponents who argue about the contrarian effect FDI have on CSR. From the proponents side the positive effect hinges on two propositions derived from the traditional knowledge transfer model of Caves (1974) and Blomstrom and Kokko (1998): the superior knowledge transfer proposition and the capital base linkage, an extension of the superior knowledge transfer proposition. From the superior knowledge transfer proposition, foreign investors are seen as diffusers of innovative practices to host firms (Bellak, 2004; and Sadowski and Sadowski-Rasters, 2006). This knowledge, which is often rich in CSR practices and assumed to be more privy to the foreign investors, are deemed important to enhance the firm’s reputation (Suzuki *et al.*, 2007). Based on this rich knowledge, FDI firms will be more likely to adopt CSR practices than non-FDI firms. Therefore, CSR of FDI firms will increase as a result of the transfer of capable superior CSR-based knowledge from foreign investors firms (Osabutey and Debrah 2012, Elmawazini and Nwanko 2012; Junni and Sarala;2013; Lehnert *et al.*, 2013, Williams and Deborah 2014). It is however believed that the

superior knowledge transfer link between the FDI and CSR will depend heavily on the origin of the FDI. Foreign investors from countries with stronger and more established social responsible investment knowledge and practice are more likely to transfer this to FDI host firms (Amponsah-Tawiah and Dartey-Baah 2011 and Nyuur *et al.*, 2016).

According to the capital-based linkage proposition, FDI boosts the capital base of host firms and with the enhanced capital base of FDI-host, such firms have resources to engage in comprehensive organisational activities, which enhance all stakeholders (particularly those of community relevance) of the firm (Dachs *et al.*, 2008). The enhanced capital base of FDI-host firms also enables the hiring of a more qualified workforce, either locally or internationally, to support the implementation of these comprehensive organisational activities (Aitken *et al.*, 1997; Feenstra and Hanson 1997; Glass and Saggi, 2002). With the qualified workforce and the available resources, FDI based firms are in the position to implement superior corporate practices (Blanchard, 1997), either in the form of best governance practices, environmental sustainability, societal commitment or economic performance. Unlike their counterpart, non-FDI based firms, who by virtue of lower resources, may concentrate on satisfying shareholders' interests to the neglect of other stakeholders', societal and environmental issues.

Again in his seminal work on the affiliates of MNEs, Hymer (1960/1976) argues that FDI based firms face disadvantages relative to non-FDI based firms operating in host countries. These disadvantages are in the form of all additional costs incurred by foreign firms operating in markets in overseas which costs the local firms will not incur in their operations. This results in a comparative disadvantage leading to liability of foreignness (Campbell *et al.*, 2012 and Mezias, 2002). Campbell *et al.*, (2012) believe the host country environment normally lacks information about the foreign firm and its operations and hence uses stereotypes and imposes different criteria in judging MNEs. This leads to costly delay in conferring legitimacy and continued distrust of foreign entrants. As defined by Suchman (1995:574), legitimacy refers to "a generalized perception or assumption that the actions of an entity are desirable, proper or appropriate within some socially constructed system of norms". One of the ways FDI based firms overcome this challenge is to gain legitimacy by spending resources to build reputation and good will through engaging CSR activities in the host country (Campbell, *et al.*, 2012 and Yang and Rivers, 2009).



From the opponents to the FDI-CSR link side, there is the argument that inflow of FDI to firms would lead to the neglect of CSR performance in such firms. Aoki (2001) argues that domestic firms (non-FDI related) are more stable and have a long term based view compared to foreign investors and FDI-host firms. Based on this, domestic firms commit their resources into governance, environmental and community enhancements which have some long-term benefits to the firm, whilst FDI based firms commit less to these societal enhancements due to their relatively shorter view of the firm's interest.

Similarly, the impact of FDI on host firm uptake of CSR is determined by the motive of the foreign investors. The major motives of most foreign investors are resource seeking or market seeking (Narula and Duning, 2000). Where the motive is market seeking, foreign investors will be willing to invest with a longer-term horizon for societal interest and thus will want to carry out more CSR projects than non-FDI based firms. On the other hand, where the FDI motive is to seek resources, CSR uptake is not a priority, since the foreign investment component is intended to maximise resource exploitation at minimal internal cost to the firm with little interest in the creation of a long-lasting relationship with the domestic community. This is in line with Ahamadjian and Robbins, (2005), who argue that foreign investors are short-sighted in their investment interest and as such do not pursue a long-term interest in the firms they are investing in. Reinhardt *et al.*, (2008) also posit that the negative effect of FDI on CSR could be due to cost considerations from CSR activities by FDI firms. They believe that some CSR costs incurred by firms are internal and thus are not noticed by the public. Thus, FDI based firms are more likely to concentrate on firm financial profit creation to the neglect of CSR performance (Reinhardt *et al.*, 2008). Kuada and Hinson (2012) reinforce this by arguing that in order to minimize cost; FDI firms will want to obey only the legal domestic requirements imposed on the firms, unlike non-FDI firms that will go beyond the legal requirements to satisfy cultural and moral duties imposed on them by their stakeholders.

#### 4.4.2 Brief Empirical Literature

Empirical studies that have ventured into the FDI-CSR link have obtained varied results (see: Amran and Devi, 2006; Dam and Scholtens, 2007; Suzuki *et al.*, 2010; Gonzalez-Perez *et al.*, 2011; Bardy *et al.*, 2011; Nyuur *et al.*, 2016). On the positive link, Chapple and Moon (2005) carried out a study on firms in seven Asian countries and realized that FDI-based firms are more likely to adopt the CSR concept than non-FDI firms in Asia. The rate of adoption of CSR by FDI firms in Asia, varies according to the business profile and is not dependent on the FDI related country of origin. Suzuki *et al.* (2010) also find that firms that have FDI in them are more likely to institutionalise CSR activities. Closely related to this is a recent study carried out in Ghana by Nyuur *et al.*, (2016). Using a hierarchical regression analysis, Nyuur *et al.*, (2016) found a positive relationship between the inflows of FDI and CSR in Ghanaian firms.

Gonzalez-Perez *et al.* (2011) studied the causality link between FDI and CSR in Columbia using the Granger causality test in the VAR framework. They realised a unidirectional relationship between FDI and CSR, i.e. FDI leads to high CSR and not vice versa. Bardy *et al.* (2011) in a related study established that there exists a positive relationship between FDI flow into firms and CSR performances of such firms. In their studies of whether or not distance matter in the relationship between MNEs and CSR in host countries in the USA, Campbell, *et al.* (2012) realized that MNEs are able to improve their social legitimacy and overcome liability of foreignness through commitment to CSR in host countries thus making FDI based firms more prone to carrying out CSR activities than non-FDI based firms. They however noted two things: that the foreign affiliates from long distance home countries are less likely to engage in host country CSR activities and that host country CSR reputation negatively moderates the positive relationship between FDI and CSR in host country.

On the negative link between FDI and CSR, Amran and Devi (2006) used content analysis on 2002/2003 cross-sectional data to examine the influence state-owned firms and FDI-based firms have on the performance of CSR in Malaysia. Their study revealed that while the state-owned firms have more positive influence on CSR performances, FDI-based firms, on the contrary, have no strong positive impact on the CSR performance of target firms. Dam and Scholtens (2007) arrived at similar findings when they also used a cross-sectional dataset of 2,685 firms. They

discovered that FDI-based firms with poor CSR performance records in their home countries transfer this into countries with poorly regulated CSR issues while FDI related firms with high records of CSR performance at home countries would avoid investing in countries with weak CSR standards. This implies two things; FDI inflows can lead to negative or positive performance of CSR depending on the existing standards of the recipient country and that FDI flow is endogenous to CSR performance of host firms.

## 4.5 DATA AND METHODOLOGY

### 4.5.1 Data and Sample

The study employed a sample of firms from the Johannesburg Stock Exchange index for the period of 2011 to 2013<sup>7</sup>. The 100 largest firms listed on the JSE were considered as the population. These firms constitute over 85% of the JSE market capitalisation (Max, 2009). The stock data was extracted from the McGregor dataset. We arrived at a sample of 56 firms after cleaning the data and dropping firms with inadequate or incomplete observations. The PIC measure of CSR is made up of governance, social and environmental issues. Detailed descriptions of the CSR elements are shown in appendix 4.

### 4.5.2 Analytical Procedure

Following the works of Choi *et al.* (2013), we estimate the following econometric model to capture the effect of FDI on CSR:

$$CSR_{it} = \beta_0 + \beta_1 FDI_{it} + \beta_2 RD_{it} + \beta_3 Leverage_{it} + \beta_4 InAge_{it} + \beta_5 InSize_{it} + \beta_6 ROE_{it} + \varepsilon_{it} \dots\dots(4.1)$$

Where  $i=1,2,3\dots n$  ( $n$ =number of firms) and  $t=1,2,3\dots T$  ( $T$ =number of years),  $\beta$  is the regression coefficient and  $\varepsilon$  is the error term.

Where CSR represents Corporate Social Responsibility

In the literature, CSR has been measured differently by scholars. For instance, Wang (2011), constructed a CSR index based on three elements: economic dimension, social dimension and environmental dimension. Using the KEJI index, Choi *et al.*, (2013) measured CSR using seven elements including; soundness of capital structure, fairness of trade, contribution to communities, consumer protection and satisfaction, environmental protection, employee satisfaction and contribution to economic growth. Uadiale and Fagbemi (2012) measured CSR on listed Nigerian

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<sup>7</sup> In line with the South African Public Investment Corporation (PIC) Corporate Rating Matrix conducted by USB Centre for Corporate Governance.

firms, using three elements which include; community performance, environmental management system and employee relations. Similarly, the Socially Responsible Investment (SRI) index and the Institute for Corporate Social Development measure CSR as the summation of commitment to community, commitment to employees, commitment to environmental issues and good governance.

In this paper we use the unique South African Public Investment Corporation's Corporate Governance Rating Matrix which measured CSR on three broad indicators, namely good governance, social performance and environmental performance. These three indicators and their subcomponents are defined extensively in appendix 2. FDI refers to Foreign Direct Investment, and Size refers to total assets of the firm. The other control variables are ROE which is return on equity, Leverage and R&D, the research and development of the firm as well as Age. The variables are explained in full detail in table 4.1.

Table 4.1: Operationalization of Variables

<b>Variables</b>	<b>Descriptions</b>
CSR	It is made up of governance, social and environmental provisions of the firms. The combined score is the average score of the indicators of CSR in each firm $\Rightarrow (governance + social + environmental) / 3$ . The score ranges between 0 and 100. While 100 is the highest CSR performance a firm can attain, 0 is the lowest CSR performance of a firm. 0 also means the firm does not engage in CSR activities at all.
FDI	A firm is referred to as an FDI firm, if foreign firms or investors own at least 10% of the firm's total equity. If foreign firms or investors own at least 10% of the firm total equity is 1 otherwise zero.
Size(Assets)	Defined as the total assets of the firm. It is estimated in a natural log form
Age	Measured as the number of years since incorporation of the firm. It is expressed as a log of age.
Leverage	It is ratio of debt to assets
ROE	Profit after tax divided by total equity
RD dummy	This refers to whether or not the firm engages in research and development activities. It is a binary dummy with 1 representing research and development activities in the firm while 0 represents the absence of research and development in the firm.

With time series cross section data, a host of estimators are currently available. However, with the constraint nature of our data which has very short time (3 years) and a relatively small number of firms (56 firms), estimators such as Generalised Methods of Moments(GMM), Fixed effect and Random effect are very impossible to use effectively. Other possible estimators that could be used here are Ordinary Least Squares(OLS), Generalised Least Squares (GLS) and Feasible Generalised Least Squares(FGLS). OLS however does not produce unbiased results when the errors are non-spherical. The estimator that overcomes this challenge in OLS is the GLS. GLS too assumes that the variance-covariance matrix ( $\Omega$ ) used to weight the data is known while in reality this is not always the case. Another estimator which tries to overcome the challenge in the GLS is the FGLS which incorporates in it the estimates for the variance-covariance matrix( $\hat{\Omega}$ ). Beck and Katz (1995) however proved that the FGLS also produces incorrect standard errors when applied to panel data. This is so because the method estimates an inordinate number of parameters in the variance-covariance matrix (Beck, 2001). He posits that notwithstanding the fact that FGLS works well in large data, it does not produce consistent results in small panel data. In overcoming all the challenges in the above estimators, Beck and Katz (1995) argued that the best way is to estimate the coefficients by OLS and then compute Panel Corrected Standard Errors (PCSEs). In this method, the  $\Omega$  is an  $NT \times NT$  block diagonal matrix with  $\Sigma$ , an  $N \times N$  matrix of contemporaneous correlations along the diagonal. OLS residuals, denoted  $e_{i,t}$  for firm  $i$  at time  $t$  are used to estimate the elements of  $\Sigma$ :

$$\Sigma_{i,j} = \frac{\sum_{t=1}^T e_{i,t} e_{j,t}}{T} \dots\dots\dots (4.2)$$

Then the standard errors of the coefficients are computed using the square roots of the diagonal elements of  $(X'X)^{-1} X' \hat{\Omega} X(X'X)^{-1}$

Where  $X$  denotes the  $NT \times NT$  matrix of stacked vectors of explanatory variables,  $X_{i,t}$ . Though the parameters are the same as in the FGLS, PCSEs has better small sample properties and thus produces more reliable standard errors than FGLS.

In estimating our equation (4.1), we used the Beck and Katz's two-step, panel corrected standard errors (PCSEs) estimator as follows:

$$\hat{\beta} = (\tilde{X}'\tilde{X})^{-1}\tilde{X}'\tilde{y} \dots\dots\dots(4.3)$$

$$Var(\hat{\beta}) = (\tilde{X}'\tilde{X})^{-1}(\tilde{X}'\tilde{\Sigma}\tilde{X})(\tilde{X}'\tilde{X})^{-1} \dots\dots\dots(4.4)$$

Where  $\tilde{X}$  and  $\tilde{y}$  are the Prais-transformed vectors of the explanatory and dependent variables and  $\tilde{\Sigma}$  is the estimator of the  $\Sigma$ . We adopt the PCSE because it is very useful in estimating linear models where the disturbances are assumed to be either heteroscedastic across panels or heteroscedastic and contemporaneously correlated across panels. Besides, PCSE provides consistent and efficient results whether or not the number of firms are less or equal to the time dimension or the number of firms is greater than the time dimension (Reed and Ye, 2011). We also conduct endogeneity tests to control for the likely endogeneity between FDI and CSR.

We additionally employed seemingly unrelated regression (SUR) estimator as an alternate estimator for robustness. The SUR also enables us correct for any endogeneity issues.

In carrying out our SUR estimation, we used the common multiple equation structure outlined by Greene (2003) as follows:

$$Y_{1it} = X_{1it}\beta_{1it} + \varepsilon_{1it} \dots\dots\dots(4.5)$$

$$Y_{2it} = X_{2it}\beta_{2it} + \varepsilon_{2it} \dots\dots\dots(4.6)$$

⋮

$$Y_{Mit} = X_{Mit}\beta_{Mit} + \varepsilon_{Mit} \dots\dots\dots(4.7)$$

Where the assumption is that  $Y$  is a dependent variable,  $X$  is the vector of explanatory variables while  $\varepsilon$  is an unobservable error term. The variable  $i=1, \dots, N$  and  $t=1, \dots, T$ . There are  $M$  equations and  $NXT$  observations. The use of the SUR is motivated by the fact that efficiency is gained in the estimation by combining information on different equations. Besides, the SUR imposes and tests restrictions that involve parameters in different equations.

### 4.5.3 Theoretical Underpinning of the Model

A priori, we expect a positive relationship between FDI inflows and CSR performance by host firms. Our expectations are premised on the superior knowledge transfer link and the capital base link between FDI and CSR (Caves, 1974; and Blomstrom and Kokko, 1998) as advanced in our theoretical literature review earlier. With the inflows of FDI into host firms, superior knowledge

is transferred from the origin firm to the host firms, leading to higher innovations which support CSR performances in firms. Moreover, with enhanced capital base by FDI base firms, comprehensive organizational activities beneficial to all stakeholders of a firm are implemented, which support CSR performance. In addition, firms with an enhanced capital base are able to hire a more qualified workforce and can also support comprehensive organisational activities beneficial to all stakeholders.

**Size-** There is a belief that larger firms have more resources; hence they can commit more into CSR than smaller firms. Larger firms are seen to be more visible to the public and hence are more likely to promote CSR in order to keep their relations with external stakeholders (Brammer and Pavelin, 2006). Large firms are said to have lower average cost of providing CSR than smaller firms (Li and Zhang, 2010). A number of previous studies have supported this positive link between size and CSR (see: Mc Williams and Siegel, 2001; Muller and Kolk, 2010 and Li and Zhang, 2010). It is thus expected that there will be a positive relationship between CSR performance and size of a firm.

**ROE** –Slack-resource theory states that more profitable firms have more organizational slack, thus they are more likely to commit more into CSR than other firms (Waddock and Graves, 1997). Firms that make profit will not only be interested in satisfying shareholders alone by way of granting shareholders, high dividends or enhancing share values, but they will also want to satisfy all other stakeholders so that their performances can be lauded holistically by all stakeholders. This assertion has been confirmed by a number of studies (Orlitzky, 2001; Scholtens, 2008 and Li and Zhang 2010). A priori we expect a direct positive link between profitability and CSR.

**Age-** There is an ambiguity in the relationship between CSR performance and age of the firm. Roberts (1992) argues that the older the firm, the more committed it is in CSR performances while Cochran and Wood (1984), takes the opposite view that the older the firm, the less committed it is to CSR activities.

**Research and Development (R&D)-** Firms that engage in more R&D have adequate resources in the form of capital, materials and qualified personnel to channel such resources into the provision

of CSR. Following McWilliams and Siegel (2000), we expect that R&D should lead to high CSR performance.

**Leverage** –Waddock and Graves (1997) indicate that less distressed firms will have more resources to engage in CSR than distressed firms. Findings by Roberts (1992) and Li and Zhang (2010) confirm the inverse relationship between leverage and CSR and a priori we expect leverage and CSR to correlate negatively

## 4.6 EMPIRICAL FINDINGS

For all our estimations, we employed STATA 12 software in generation our results. Table 4.2 below shows the summary statistics of the study. From Table 4.2 the average combined CSR score is 57.06 and is indicative of a fairly balanced level of CSR activity. Although from the standard deviation (13.47), one can deduct a wide level of variation across firms. From the decomposed indicators it is clear that governance, with a score of 70.71, is the highest CSR factor, and environmental performance the lowest representation in CSR with an average score of 41.30. This indicates that most of the companies are doing better in respect of corporate governance performance compared to their environmental and social performance. This can be attributed to the fact that most of the governance performances are entrenched in the Company Acts and the Corporate Governance Codes which listed firms are compelled to abide by to remain listed.

Table 4.2: Summary Statistics (Observations 168)

<b>Variable</b>	<b>Mean</b>	<b>Std. Dev.</b>	<b>Min</b>	<b>Max</b>
Governance	70.71	8.81	30.99	87.32
Social	59.14	21.97	0.00	100.00
Environmental	41.30	19.58	0.00	85.45
Combine Score	57.06	13.47	10.33	86.25
FDI	0.19	0.39	0.00	1.00
ROE	0.29	0.79	-0.68	9.80
Research & Dev't	0.01	0.02	0.00	0.15
Leverage	0.54	0.23	0.00	1.02
Size	9.99e+07	2.46e+08	1996932	1.69e+09
Age	52.82	39.07	1.00	128

### 4.6.2 Regression Results

We first explain the results of the panel corrected standard errors (PCSE) estimates shown in Table 4.3. The results show a positive and significant effect of FDI on CSR. This is in tandem with the findings of Chappel and Moon (2005), Bardy *et al.*, (2011) and Gonzalez-Perez *et al.*, (2011) where



FDI was found to have a positive significant impact on CSR performance. This, however, contradicts the findings of Amran and Devi (2006) and Dam and Scholtens (2007). This strong positive relationship between FDI and CSR can be attributed to the superior knowledge transfer and capital linked based propositions. FDI therefore does not only boost the financial and resources performance of host firms, but it enhances the transfer of capabilities, superior knowledge and also serves as diffusers of innovative ideas (Dunning, 1993; Markusen, 1995; Blomstrom and Kokko, 1998; Bellak, 2004 and Nyuur *et al.*, 2015). It therefore suggests that the flow of FDI into South African listed firms is accompanied by better technological, managerial and ethical adherence knowledge by way of transfers from the home firm to the host firm, or the hiring of such caliber of workforce by the host firm.

With regards to the sub-components of CSR, we find that FDI significantly and positively affects two indicators namely social and environmental performance, but has no significant impact on governance. The strong positive link between FDI and the social and environmental performance components of CSR are also based on the superior knowledge and the capital base theories propounded by scholars. With the presence of superior knowledge, FDI based firms are able to adopt world best corporate practices (Blanchard, 1997) that boast the welfare of all their stakeholders and not only those practices that are only enhancing the economic performance of the firm, but are environmentally and socially destructive. Thus, with the availability of resources coupled with superior knowledge, FDI based firms engage more in contributing to the wellbeing of their host communities by way of philanthropic activities, developing the knowledge base of their local staff and creating a conducive environment for both staff and customers, since the sustained success of every business is heavily dependent on the well-functioning of the community it is situated in (Goyal, 2007).

Again, to allay the fears that foreign investors enter local markets mainly to exploit resources and destroy host environments, FDI based firms tend to contribute more to the building of their host communities (Goyal, 2007). This is probably much more vivid in South Africa due to the uniqueness in the country's development history. Most inhabitants outside the major cities in South Africa do not have formal education and training. For an FDI base firm that wants to, therefore, succeed in such communities it will have to contribute to the skills training and economic

empowerment of the inhabitants to enable the firm gets the good local workforce it needs to blend its existing workforce. In addition, to do away with any racial feelings, FDI based firms in South Africa may be more compelled to empower, engage and provide best working conditions that may even supersede those that exist in their home economies. Many communities in South Africa are furthermore bedeviled with poor environmental conditions and slums due partly to the endemic poverty and improper extraction of natural resources in such communities. Therefore, to succeed and outperform their local counterparts, FDI based firms with the availability of resources and access to more technology, are able to conduct their affairs more environmentally friendly so as to win the admiration of the communities who will patronise their businesses for mutual benefits.

The non-significant impact on governance is puzzling but can be explained. As indicated earlier, South Africa is one of the first countries in the world to develop and institutionalise a comprehensive code of governance for its firms. South African based firms therefore already have a superior, strong and rich governance structure and institutions are thus unaffected by foreign knowledge. This in fact confirms the position by other scholars (Konrade *et al.*, 2008, Corredoira and MkDermott, 2014 and Nyuur *et al.*, 2016) that where there is high quality of governance institutions in firms, the impact of FDI on host firms CSR activities diminishes.

With regards to the control variables, ROE has a negative and significant effect on CSR. Contrary to the resource slack theories, CSR does not increase with firm profitability. Firms with a higher R&D have significantly higher CSR in line with our expectation and with similar findings by McWilliams and Siegel (2000). This result is significant for the combined score, governance and environmental sub-indicators, but not for the social sub-indicator. Leverage does not have a significant effect on the combined CSR score. It significantly and negatively affects governance but has a positive and significant impact on the social indicator. The size of a firm correlates positively to CSR and goes to confirm the position of Brammer and Pavelin (2006) that due to the visibility of large firms to the public, large firms are more motivated to promoting CSR in order to keep their external stakeholder relations. Older firms also perform better than younger firms in CSR in the combined SCR score and in the governance and social sub-indicators. This also goes to confirm the assertion of Roberts (1992) that the older the firm the more committed it is to CSR but contrary to the position of Cochran and Wood (1984). Expectedly, the higher the leverage rate

of a firm the lower the uptake of CSR activities of the firm. This supports the findings of Waddock and Graves (1997).

Table 4.3: Panel Corrected Standard Errors Regression (PCSE) Results

<b>Independent Variables</b>	<b>(1) Governance</b>	<b>(2) Social</b>	<b>(3) Environmental</b>	<b>(4) Combined Score</b>
FDI	0.0085 (0.0083)	0.0718** (0.0320)	0.0754*** (0.0217)	0.0519*** (0.0111)
ROE	0.0034 (0.0052)	-0.0010 (0.0068)	-0.0401*** (0.0067)	-0.0126*** (0.0031)
RD	10.22*** (1.448)	10.07 (6.484)	11.42*** (3.163)	10.57*** (3.400)
Leverage	-0.0482*** (0.0181)	0.154*** (0.0557)	-0.0641 (0.0509)	0.0138 (0.0194)
Log of age	0.0139*** (0.0029)	0.0391*** (0.0079)	-0.0014 (0.0102)	0.0172*** (0.0049)
Log of size	0.0397*** (0.0042)	0.0560*** (0.0085)	0.0482*** (0.0059)	0.0480*** (0.0030)
Constant	-0.0425 (0.0981)	-0.674*** (0.118)	-0.438*** (0.128)	-0.385*** (0.0622)
Observations	168	168	168	168
R-squared	0.272	0.224	0.139	0.255
Wald $\chi^2(6)$	2816.44	3213.19	1259.33	1062.36
Prob.> $\chi^2$	0.0000	0.0000	0.0000	0.0000
Number of Firm	56	56	56	56

Standard errors in parentheses

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

Results from our SUR estimation is presented in table 4.4 which indicates similar findings with the PCSE estimates. FDI has a positive and significant effect on CSR. This is a confirmation that our results are robust. Again, under the sub- components of CSR, FDI has a positive impact on both social and environmental performance though the level of significance has reduced from 1% to 5% for environmental performance and from 5% to 10% for social performance in the SUR regression. The control variables that impact on CSR in our SUR regression results have also followed a similar pattern like the PSCE results, although we noted a slight difference in some. For instance, ROE here has a negative and significant effect on both the social and environmental performance of CSR. R&D is established to have a positive and significant impact on governance performance only. It is also worthy of note that leverage has no significant effect on CSR with this estimator.

Table 4.4: Seemingly Unrelated Regression (SUR) Results

VARIABLES	(1) Governance	(2) Social	(3) Environmental	(4) Combined Score
FDI	0.0133 (0.0242)	0.1917* (0.1059)	0.3064** (0.1304)	0.1114** (0.0463)
ROE	0.0019 (0.0119)	-0.0010** (0.0518)	-0.3042*** (0.0639)	-0.0267 (0.0227)
RD	10.6126*** (3.7504)	2.0338 (16.4048)	18.7809 (20.2001)	9.9890 (7.1652)
Leverage	-0.0731 (0.0477)	0.2372 (0.2088)	-0.1629 (0.2572)	-0.0494 (0.0912)
Log of age	0.0275** (0.0107)	0.0938** (0.0467)	0.0176 (0.0576)	0.0480** (0.0204)
Log of size	0.0360*** (0.0076)	0.0734** (0.0334)	0.0635 (0.0411)	0.0531*** (0.0146)
Constant	-1.0442*** (0.1387)	-2.3827*** (0.6067)	-2.0799*** (0.7471)	-1.6598*** (0.2649)
Observations	168	168	168	168
R-squared	0.1473	0.1088	0.1608	0.1403
Wald $\chi^2$	28.17	19.90	31.24	24.59
Prob.> $\chi^2$	0.0001	0.0029	0.0000	0.0002
Number of Firm	56	56	56	56

Standard errors in parentheses

\*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1

## 4.7 CONCLUSION

This study is one of the pioneering works on FDI and CSR activities in South Africa and adds to the scanty evidence on Africa at large. It investigated the relationship between FDI and CSR performance in South African listed firms. After controlling for contemporaneous cross-correlation across the panel of firms and endogeneity, our main findings are as follows: FDI has a strong positive significant impact on the performance of CSR in South Africa. However, from the decomposed CSR indicators, the FDI effect is only present in the social and environmental sub-indicators, but insignificant with the governance sub-indicator. The positive link established between FDI and CSR in this study can be explained by the superior knowledge transfer and capital base link theories. One of the possible channels through which superior knowledge is transferred from home firm to host firm is the transfer of staff with superior knowledge from home firm or headquarters to host firms or subsidiary firms. Besides, superior knowledge can also be transferred by way of sending out host firm staff to mother firms for skills training which might not be

available locally. Equally, the presence of foreign owners on the management board of a host firm through their voting rights are able to influence decisions taken for the better operation of the firm, thus transferring their superior skills and knowledge to the host firm.

With the capital base link, the host firm is able to have access to external sources of equity, hence its financial strength is boosted. With an enhanced capital base, the firm is able to increase its CSR performance through these channels: the firm is able to undertake comprehensive organizational activities that broadly cater for all stakeholders' needs in the firm. Moreover, the FDI base firm is able to hire the best workforce needed in the firm and finally, the firm has the ability to adopt the best approaches, processes and techniques needed in its operations. The non-significance of FDI on the governance performance in South African listed firms is heavily attributable to the already existing strong and superior corporate institutions and structures in the country prior to the inflows. The country's governance systems are not affected significantly by foreign knowledge.

From the results analyzed above it is apparent that if South Africa is able to attract more FDI into its economy, the social and environmental components of CSR will be greatly enhanced in the country. To benefit more from the inflows of FDI into the economy, policy makers in South Africa should grant incentive packages in the form of tax exemptions to FDI firms that are scoring high in their social and environmental performances since this have a direct positive impact on the CSR performance of firms. Apart from that, local firms should selectively attract FDI from firms which have high performance records of social and environmental performance in their home countries. This is possible by granting to high socially and environmentally scoring foreign firms that invest in local firms the right to repatriate their profits without any restrictions.

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## APPENDIX 2

### GOVERNANCE

#### 1. Board

- ✓ Chairperson independence
- ✓ Independent non-executive directors in majority
- ✓ Diversity (female directors' presence and black directors' presence)
- ✓ Evidence of board development programme
- ✓ Evidence of board performance evaluation
- ✓ Composition of audit committee
- ✓ Composition of remuneration committee
- ✓ Composition of nomination committee

#### 2. Individual Directors

- ✓ Percentage of directors over boarded
- ✓ Company secretary should not be a director of the company
- ✓ Percentage of directors who attended less than 75% of scheduled board meetings
- ✓ Percentage of directors who attended less than 75% of scheduled board committee meeting

#### 3. Executive Management

- ✓ Diversity (female executive committee members)
- ✓ Diversity (black executive committee members)
- ✓ Disclosure of CEO's terms of contracts and notice terms

- ✓ Succession planning for directors and executive management
- 4. Remuneration
  - ✓ Average percentage increase in executive directors' base salary
  - ✓ Average percentage increase in executive directors' bonus
  - ✓ Prospective approval of remuneration
  - ✓ Existence of share options per director
  - ✓ Existence of performance targets linked to remuneration
  - ✓ Existence of "golden parachutes"
- 5. Shareholder Treatment
  - ✓ Existence of one share one vote principle
  - ✓ Diversified ownership
  - ✓ Existence of dedicated investor relations section
- 6. Auditing and Accounting
  - ✓ Unqualified audit report
  - ✓ Direct reporting line for internal auditor
  - ✓ Independence of external auditor
  - ✓ Recognition received for quality of finance report
  - ✓ Recognition received for quality of non-financial report
- 7. Disclosure and Reporting
  - ✓ Clear description of principle risks and uncertainties and how it will be managed
  - ✓ Disclosure of company economic value
  - ✓ Disclosure of audit committee's report to shareholders and how it has fulfilled its duties during the financial year
  - ✓ Integrated Report in line with minimum information required by King III
- 8. Corporate Behaviour
  - ✓ Disclosure of prosecutions, legal contraventions, judgments and fines
  - ✓ Anti-competitive practices and behavior
  - ✓ Consumer treatment
  - ✓ Evidence of stakeholder analysis and engagement
  - ✓ Disclosure of policies and payments made to political parties
- 9. Corporate Culture
  - ✓ Commitment to accountability, probability and disclosure (voluntary standards)
  - ✓ Existence of compliance officer/function
  - ✓ Evidence of anti-corruption programmes
- 10. Sustainability Report
  - ✓ Did the company issue a sustainability report?
  - ✓ Is the report externally verified?
  - ✓ Is it an integrated report as per King III?
  - ✓ Is it a GRI report?

## **SOCIAL**

- 1. UN Global Compact
  - ✓ Participant
  - ✓ Status
  - ✓ Last communication on progress CEO statement
  - ✓ Last communication on progress issues covered

- ✓ Last communication on progress measurement of outcome
- 2. Human Rights (only for UN Global Compact Active Companies- see list)
  - ✓ Support and respect for the protection of internationally proclaimed human rights
  - ✓ Non-complicity in human rights abuses
  - ✓ Uphold freedom of association and the effective recognition of the right to collective bargaining
  - ✓ Elimination of all forms of forced and compulsory labour
  - ✓ Effective abolition of child labour
  - ✓ Elimination of discrimination in respect of employment and occupation
- 3. Transformation
  - ✓ Ownership
  - ✓ Employment equity
  - ✓ Disclosure of procurement practices
  - ✓ BBBEE level contribution
- 4. Health and Safety
  - ✓ Detailed disclosure of accidents, deaths and injuries (only if appropriate to sector)
  - ✓ Evidence of HIV/AIDS policy
- 5. Corporate Responsibility (CR)
  - ✓ Evidence of CR policy that acknowledges strategic role as opposed to philanthropy
  - ✓ CR spent as percentage of profit after tax
- 6. Other
  - ✓ Percentage of disabled employees

## **ENVIRONMENTAL**

- ✓ Precautionary approach to environmental challenges
- ✓ Initiatives to promote greater environmental responsibility
- ✓ Existence of board sub-committee responsible for environmental/sustainable development
- ✓ Executive performance linked to sustainability performance
- ✓ Participation in voluntary standards and net works
- ✓ Total paper usage of company
- ✓ Direct energy consumption by primary energy source
- ✓ Indirect energy consumption by primary source
- ✓ Energy saved due to conservation and efficiency improvements
- ✓ Total direct and indirect greenhouse gas emission by weight
- ✓ Initiatives to reduce greenhouse gas emission and reductions achieved
- ✓ Total water withdrawal by source
- ✓ Percentage and total volume of water recycled and re-used
- ✓ Total water discharged by quality and destination
- ✓ Initiatives to mitigate environmental impacts of products and services and extent of impact mitigation
- ✓ Environmental performance of suppliers and contractors
- ✓ Percentage of materials used that are recycled input materials
- ✓ Total weight of waste by type and disposal method
- ✓ Total number and volume of significant spills

- ✓ Encourage the development and diffusion of environmentally friendly technologies

## CHAPTER FIVE

### FOREIGN DIRECT INVESTMENT AND FIRM INNOVATION IN SELECTED SUB-SAHARAN AFRICAN COUNTRIES<sup>8</sup>

#### 5.1 INTRODUCTION

Foreign Direct Investment (FDI) enhances productivity and economic growth via the infusion of innovation into host firms. Innovation occurs when firms are able to create new processes in producing existing products more efficiently or differentiating existing products or introducing entirely new products so as to increase sales and market performance (Girma *et al.*, 2005). The inflow of FDI into host economies sparks up innovative activities via two main conduits.

Firstly, the injection of foreign capital by way of FDI causes parent companies to transfer some of their superior knowledge accumulated over the periods by way of employee transfer or technology transfer to the subsidiary firm. This enables the subsidiaries to be able to innovate and compete favourably as multi-national enterprises are noted to have better technologies and organizational skills than local firms (Smarzynska, 2003). Thus, firms that belong to larger corporation groups arguably have more innovative activities (Terk *et al.*, 2007).

Secondly, one of the modes through which FDI infuses innovation into host firms is the reduction of financial constraint to the firms, enabling such firms with available finances to spend more resources on research and development (R&D), leading to more innovation in their operations. This is particularly very crucial as R&D does not only serve as a stimulant for innovation but it also enables the firm to be able to identify, assimilate and exploit outside knowledge (Kinoshita, 2000). Moreover, due to the availability of funds, FDI firms are likely to attract and retain more qualified personnel through higher wages (Aitken *et al.*, 1997, Glass and Saggi, 2002). Thus access to finance drives innovation in firms (Fombang and Adjasi, 2018).

FDI is arguably one of the most important and cheapest means of technology transfer to developing countries (Blomstrom and Kokko, 1997). It is said to be the cheapest means of technology transfer

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<sup>8</sup>This paper has been presented in the 2017 African Review of Economics and Finance Conference organized at Ghana Institute of Management Public Administration, Accra, Ghana from 30-31st August, 2017 and is currently under review in a journal.

since the host firms do not always have to finance the acquisition of the new technology. Besides, the transfer of newer technology is quicker to host firms through FDI than licensing and international trade (Mansfield and Romeo, 1980). Despite the link established between FDI and innovation theoretically (for instance, Bertschek 1995, Saggi 1999 Cheung and Lin 2003; Blind and Jungmittag 2004, Liu and Zou 2008, Iacovone *et al.*, 2008), it is still not entirely certain that FDI enhances innovation in host firms. It is argued that due to the profit motive of most foreign investors, foreign investors may concentrate more on short to medium term profits to the neglect of activities like innovation, which are cost intensive and long term geared. In that regard FDI may stall or even retard innovation in host firms (see: Stiebale and Reize, 2010; Maaso *et al.*, 2012 and Garcia *et al.*, 2013). Some authors also argue that, FDI and innovation are endogenously determined. FDI may therefore not only drive innovation but innovative firms may end up attracting more FDI (Dunning, 1995). Again, the product life cycle theory believes that multinational enterprises (MNEs) spend more on innovation during the early stage of the firm's life cycle and move into host firms at later stages where less is spent on research and development (Vernon, 1966). Thus FDI base firms have the chance of hammering innovation than non-FDI firms. Apart from that, the pull factor theory also posits that some MNEs move into host firms so as to enable the home firms learn and adopt some innovations available at the host firms but are lacking in the home firms (Dunning, 1995).

On the empirical front too, there are varied results. In their study, Dachs and Ebersberger (2009) established that membership of multinational enterprise group significantly improves firm's innovative ability by way of assisting the firm to overcome innovation obstacles such as lack of financial resources, lack of technological and market information or organizational problems. In supporting these studies, Ghazel and Zulkhibri (2014) and Khachoo and Sharma (2016) in their separate studies noted that FDI is a good catalyst in innovative abilities of host firms. On the contrary, some studies have also established a negative relationship between FDI and firm innovation (see, Stiebale and Reize, 2010; Garcia *et al.*, 2013 and Barasa *et al.*, 2018).

Based on the above varied theoretical arguments and empirical findings, it is clear that there is a gap in the literature which is worth investigating. In addition, regional or country contexts may influence the FDI-innovation link and thus calls for further research with a contextual focus. There exists great difference in countries/regions especially between industrialized western countries and



developing countries (Latin America, Asia Africa etc) when it comes to observing factors such as FDI, firm activity, structure, CSR, innovation and the factors which drive them and hence the impact on theory predictions. The situation is more stark from an African perspective. For instance, Africa attracts so little FDI within the global trends. As illustrated in table 2.3 of chapter 2, the developing economies of the world accounted for about 37.6% of the world inflows of FDI while Africa's share of the world FDI flows is only 3.28%. During the same period, Asia Pacific region, and Latin America and the Caribbean, have a share of 24.07% and 10.71% respectively of the world FDI. Therefore, in comparison with the developing economy as shown in figure 2.1, Africa's share is only 9.32% while Asia and the Pacific, and Latin America and Caribbean, accounted for 62.87% and 29.70% respectively. There is therefore a methodological flaw in including African countries in other regions when studying FDI). Similarly, firm activity, structure and CSR also vary very differently when observed from an African context as compared to other contexts.

At the same time Africa also experiences a diversity which is worth accounting for. Failure to account for these contextual differences renders a number of theories weak, inapplicable or unable to explain phenomenon in different contexts. For instance, our studies have revealed that while FDI impacts positively on both product and process innovation in Nigeria it has no significant impact at all on both product and process innovation in South Africa. We argue that this is as a result of contextual differences between Nigeria and South Africa. For instance, on domestic credit to private sector, South Africa is ranked 16<sup>th</sup> globally (Global Innovation Index, 2015). This implies that South Africa is doing better than most countries in the world thus the inflow of FDI may not be seen significantly as far as private firm capital base is concerned unlike most African countries where access to credit is a main challenge to private firms' performance (Global Innovation Index. 2015). Again South Africa has demonstrated its dominance when it comes to R&D (36<sup>th</sup> position) and access to ICT (86<sup>th</sup> position) globally. However, Nigeria like other SSA countries is lacking behind in all these areas. This shows that South African firms are doing very well in research and development already and thus MNEs moving into South Africa may not concentrate again on these areas but also channel their resources into other areas that may need to be boosted for better performance in the firm thus the non-significant of the inflows on the host firms' innovation.

Besides, all the studies carried out on the subject matter are based in advanced countries with only Barasa *et al.* (2018) that has been carried out on SSA. However, Barasa *et al.* (2018) focused only on technological innovation whereas our study is looking at innovation in general where technical innovation is just a sub-set. Again, while their study combined a lot of countries thus examining the impact on an aggregate level, our study is looking at two countries in SSA using a firm level data so as to see how the link is in each country. As a result of the theoretical and empirical inconclusiveness established and the contextual gap, our study investigates the effect of FDI flow on host firm innovation in South Africa and Nigeria.

Our study also further departs from previous studies. Unlike previous studies we create an innovation index using a multiple correspondent analysis (MCA) approach which captures innovation holistically. We use process and product innovation as proxies for innovation sourced from recently classified unique World Bank Enterprise Survey (WBES). With the exception of Bertschek (1995), Liu and Zou (2008), Stiebale and Reize (2010), Seker (2011) and Maaso *et al.* (2012) who used product and process innovation and sale of new product as proxies for innovation, most of the previous studies on the subject matter have used R&D and patent protection as proxies for innovation. It is, however, argued that such proxies are inputs that require time lag to generate innovation and hence do not represent innovation properly (Beveren *et al.*, 2010). This could account for some of the inconsistencies in earlier empirical studies.

As noted already the link between FDI and firm innovation could be a bi-directional one thus the problem of endogeneity emanating from simultaneity is eminent in such a study. Most previous studies have failed to control for endogeneity and this could account for some of the inconsistencies in their findings. We use an instrumental variable limited information maximum likelihood (IVLIML) estimation technique which has the ability to control for endogeneity problem in our models.

Finally, most studies are based on advanced countries with very few studies on developing countries, especially in Africa, where the attractiveness of FDI is increasing but where most firms also lag far behind in innovation as compared to their counterparts in other continents (African Development Bank, 2008 and Global Innovation Index, 2015). We focus our study on Nigeria and South Africa in SSA for a number of reasons. First, these countries are the leading economies in SSA and they are the top recipients of FDI inflows (World Investment Report 2015). While West

African's inflows of FDI heavily dominated by Nigeria and Ghana, with Nigeria being the largest recipient, Southern African's inflows are led by South Africa due to its economic power (Ernst and Young, 2013). South Africa is noted as the most attractive destination of all investors coming to the continent. As illustrated in figures 2.2-2.4 of chapter 2, Nigeria and South African have consistently been the leading recipients of FDI in SSA for a long period of time. Second, although Nigeria and South Africa are in the common set of developing countries and also African countries, these two countries have different contexts and conditioning factors and structures which emerge in the interplay of any economic activity. For instance, using the case of firm level activities whereas Nigeria is lacking behind in terms of global innovation index, access to domestic credit, R&D and ICT access, South Africa is well endowed with ICT, domestic credit and relatively better positioned on R&D and innovation. These different levels of endowments and conditioning of the same factors will result in different outcomes in firm level activities in the two countries. For example, in South Africa, given the favourable ranking in innovation index (36<sup>th</sup> position globally), South African host firms will be relatively more endowed with innovation outcomes therefore FDI inflow into host firms in South Africa will have no significant impact on firm innovation.

The rest of the chapter is structured as follows: Section 5.2 and 5.3 provide an overview of FDI in South Africa and Nigeria respectively. Section 5.4 reviews the related literature while data and methodological issues are presented in Section 5.5. The findings of the study are presented in Section 5.6 while conclusion and policy recommendations are in Section 5.7.

## **5.2 OVERVIEW OF FDI FLOW IN SOUTH AFRICA**

Like other SSA countries, South Africa has seen on average an upward trend in FDI inflows into the country in recent times, both in the private and public sectors. As indicated in figure 5.1 below, inward FDI to South Africa saw a continuous decline trend from 1980 to 1989. From 1990 to 1997, a gradual increase in FDI phase took place. The increase in this period was, however, quite small. A very sharp increase in FDI inflows occurred from 1998 peaking at 1999 with an inflow of about \$3,235 million, taking a sharp dip until 2002. Another growth phase in FDI set in from 2003 until 2007. During the period of 2008-2009, which also marked the peak of the global financial crisis, South African FDI inflows declined sharply.

The growth in FDI inflow was, however, restored quickly and reached a record high of \$11,222 million thus making South Africa the highest recipient of FDI inflows into SSA in 2012. This momentum could not, however, be maintained. Another drop started in 2013 and reached a record low of \$1,868 million in 2015. Despite this, South Africa is the third largest FDI recipient after Nigeria and Mozambique in SSA.

Some of the factors that drive the high attraction of FDI into the country include: transparent regulatory framework, large population, availability of raw materials, political stability, sophisticated banking and financial system<sup>9</sup> and well-developed infrastructure. South Africa enjoys a global attraction and was ranked 15<sup>th</sup> globally as the most attractive country for transaction companies for 2013-2014. It is also ranked as the most attractive destination for investment in SSA. Besides these factors, the government of South Africa in recent times undertook steps to encourage inflows of FDI into the economy. Some of these steps are the passage of new legislation (Protection of Investment Act 22) in 2015 which aims to further strengthen investor protection in the country, the provision of foreign investment grant<sup>10</sup>, the provision of industrial development zone incentives<sup>11</sup> and the provision of a 12% tax incentive to Greenfield investment in the manufacturing sector. Governmental approvals are also not required in most instances before a foreign investor is given a license to invest in the country<sup>12</sup> and all the sectors in the country are open to foreign investors.

The inflows of FDI into South Africa originate from several countries throughout the world. As seen from figure 5.2, the UK accounts for about 46% of inflows in 2012 followed by the Netherlands with 18.6%. Other countries that have significant investments in the country are the USA, Germany, China, Japan, Switzerland and Luxembourg. The huge inflows of FDI from the UK and the Netherlands could be attributed to the colonial lineage that South Africa has with these countries. In 2015, however, while the inflows from the Netherlands increased to 24%, that of the UK dropped significantly to 30%. Similarly, the share of the US and German inflows dropped

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<sup>9</sup> It is the third most financially developed country in the world (EY, 2014).

<sup>10</sup> A cash grant which provides up to 15% of the value of new machinery and equipment.

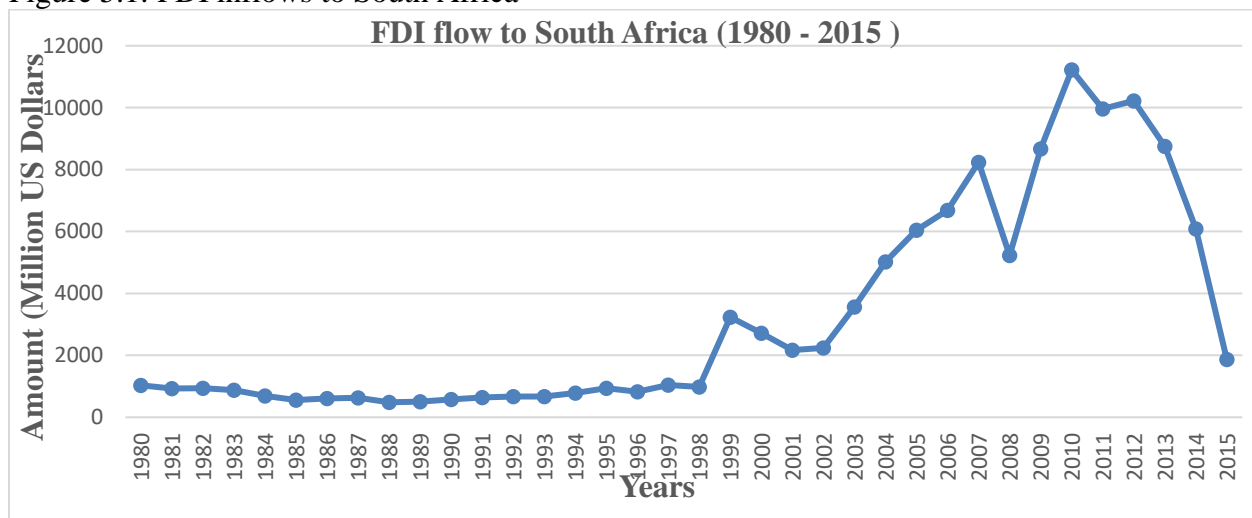
<sup>11</sup> It provides duty free import of production related materials and zero VAT on materials sourced from South Africa

<sup>12</sup> The foreign investor only needs to comply with the exchange control regulation of the country.

slightly from 7% to 5% and from 5% to 3% respectively. There was, however, a significant increase in FDI inflows from other countries, rising from 15% in 2012 to 36% in 2015.

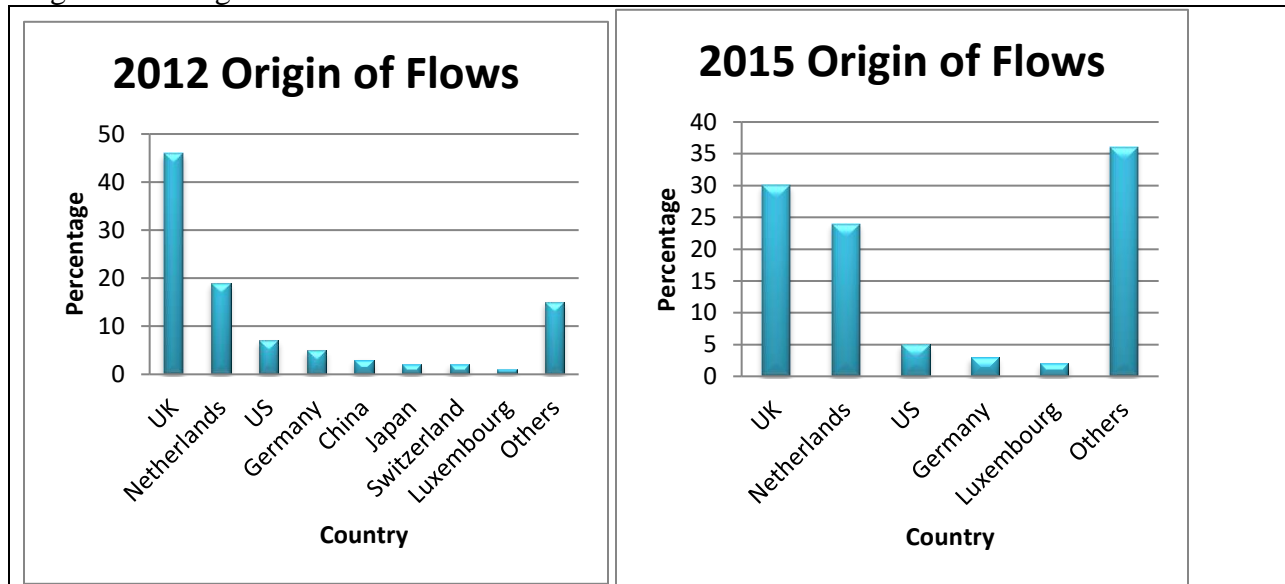
The sectors that received these inflows are shown also in figure 5.3. The sectors that benefit most from the inflows are the financial and mining sectors. These two sectors alone receive about 67% of all inflows in the 2012 year and 77% of the total inflows in the 2015 year. This could be attributed to the availability of precious minerals in the country in the form of gold, coal, bauxite etc. The country has a well-developed and well-functioning financial sector, the best in Africa. This could make it attractive and easy for foreign investors to commit their resources into those areas. It is noted, however, that while FDI flows to the financial sector increased significantly from 36% in 2012 to 41% in 2015, FDI flows to the mining sector for the same periods dropped from 31% to 16% respectively. This could be attributed to the depletion of some of the natural resources thus shifting the interest of investors from mining and manufacturing to the financial sector.

Figure 5.1: FDI inflows to South Africa



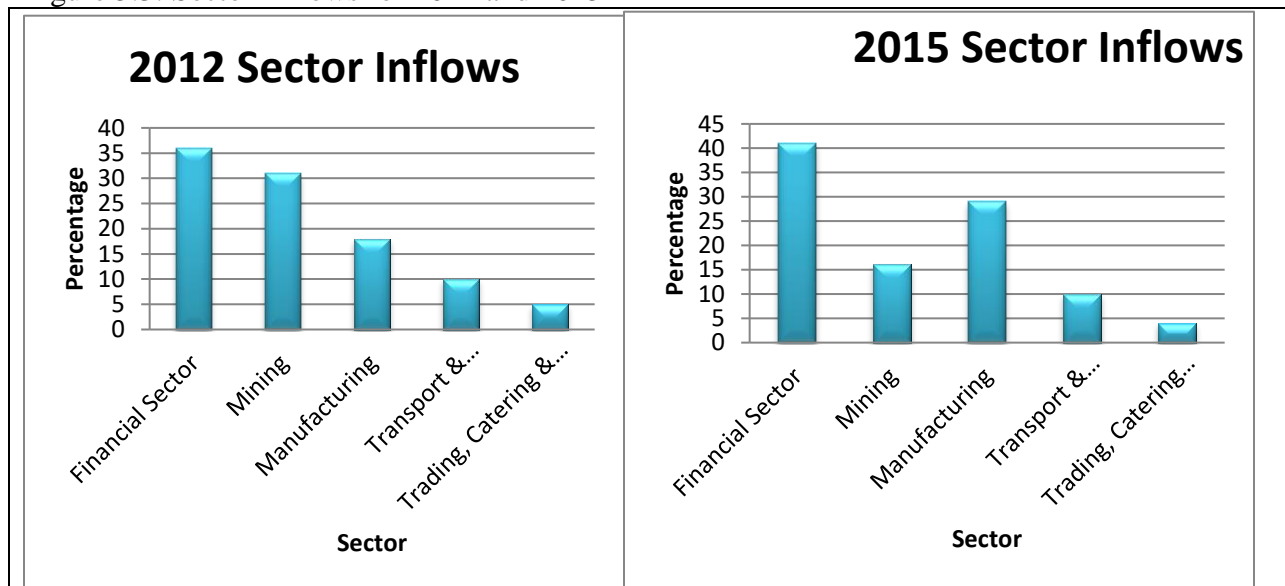
Source: UNCTAD, 2016

Figure 5.2: Origin of Flows for 2012 and 2015



Source: South Africa Reserve Bank, 2016

Figure 5.3: Sector Inflows for 2012 and 2015



Source: South Africa Reserve Bank, 2016

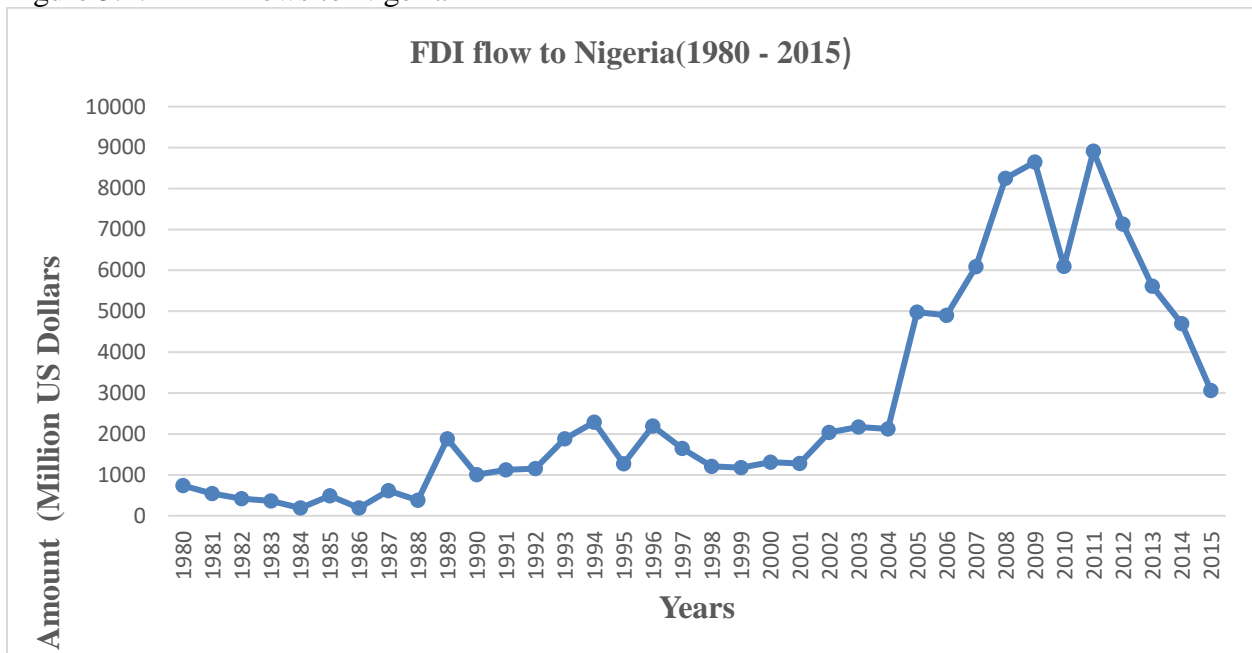
### **5.3 OVERVIEW OF FDI FLOW IN NIGERIA**

From the early 1980's, FDI inflows to Nigeria was erratic until 1989 when it increased significantly to \$1,884 million. During the same period Nigeria consciously created structural liberalisation policies to attract FDI. Some of these policies are the implementation of a structural adjustment programme, the liberalization of financial markets, privatisation and abandoning the import substitution strategy, granting of tax relief and concessions of local material development. It also established a number of institutions, the Export Processing Zones, Nigeria Export-Import bank in 1991, and the Investment Promotion Commission in 1995, allowing 100% ownership by foreigners except in petroleum, arms and drugs businesses. However, FDI experienced another consistent decline from 1995 to 2001. The policies coupled with the resource endowment in Nigeria appear to have eventually paid off as they yielded an in surge of FDI into the country after 2001. This is depicted in figure 5.4.

In spite of the continual decline since 2011, Nigeria is the highest recipient of FDI in SSA. It accounts for about 70% of total FDI into West Africa region and receives about 11% of the total FDI inflows into Africa (UNCTAD, 2006). Nigerian's current lead in the FDI market in SSA market can also be attributed to it being the largest economy in SSA.

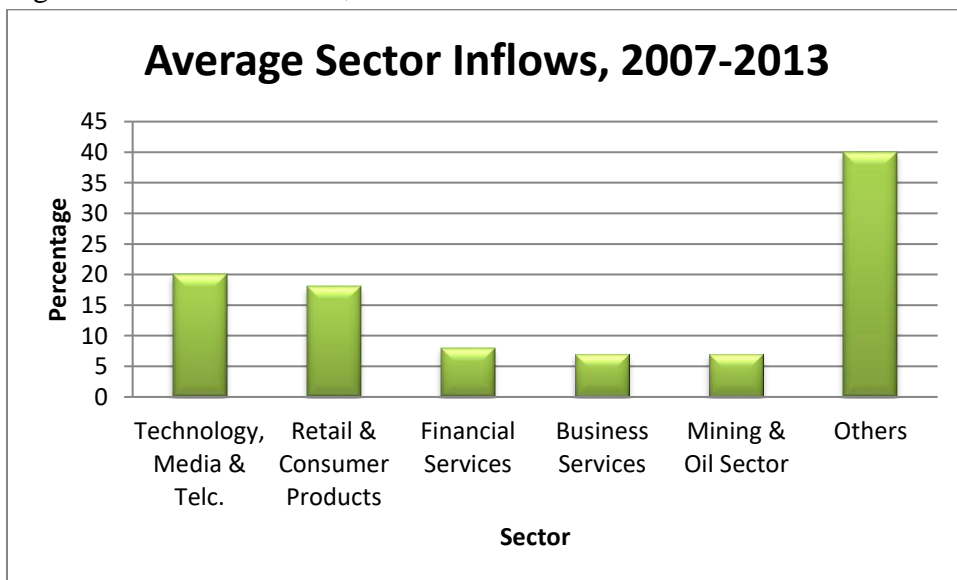
The flow of FDI to Nigeria goes to several sectors of the economy. This is shown in figure 5.5 with the major beneficiaries being the technology, media, telecommunication, retail, and consumer products sectors. Unlike South Africa where the financial sector and mining sector dominate the FDI inflows, in Nigeria the technology and retail sectors are tops and account for 20% and 18% of FDI inflows respectively. The financial sector and the extractive sector account for 8% and 7% respectively. The origins of flows to Nigeria, as shown in figure 5.6, have been dominated by Canada which contributes the highest percentage of 30%, followed by the US, Mauritius, the UK and South Africa. Unlike South Africa's inflows which originate mainly from Europe and the US with no African country being a major foreign investor, in the case of Nigeria, African countries are heavily represented by South Africa and Mauritius as major foreign investors. The limiting nature of the Nigerian data has made it impossible for us to perform trend analysis on the sectorial flows and the origins of flows as we did for South Africa.

Figure 5.4: FDI inflows to Nigeria



Source: UNCTAD, 2016

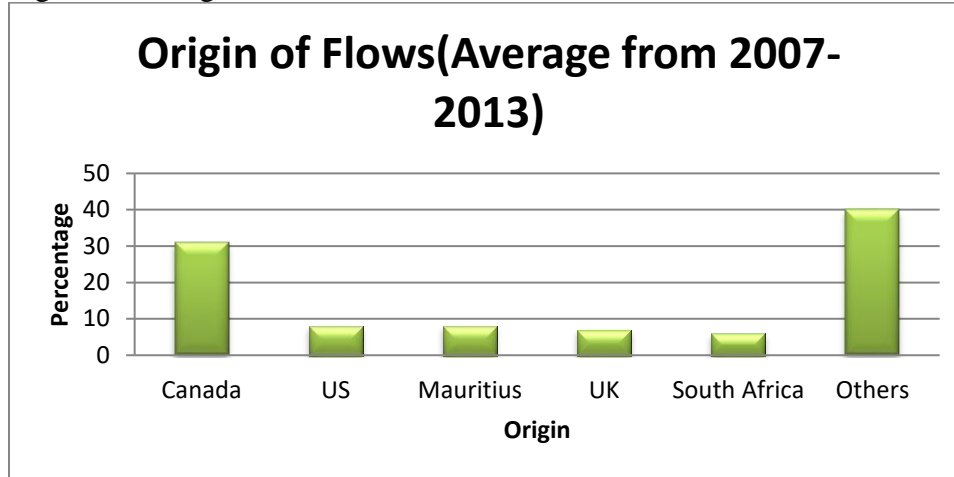
Figure 5.5: Sector Inflows; 2007-2013



Source: EY, 2014



Figure 5.6: Origins of Flows



Source: EY, 2014

## 5.4 REVIEW OF RELATED LITERATURE

### 5.4.1 Theoretical Literature

There is a theoretical debate on the link between FDI and firm innovation. While others are of the view that FDI leads to high innovation, some argue that FDI retards innovation. Yet there is another school of thought that believes that FDI-innovation link is a mixed one. They believe, it can be positive, negative or neutral depending on other underlying factors. We have grouped these debates into three main stances as discussed below.

#### *Positive Relationship between FDI and firm innovation*

Caves (1974) believes that FDI is positive for domestic firms as it transfers advanced technology and enhances innovation through knowledge transfers. The positive impacts of FDI on local firms' innovation are twofold. Firstly, FDI impacts positively on the firms that host it and secondly, it affects other local firms positively in the same economy or sector. Summarising from previous literature (see: Findlay, 1978; Bertschek, 1995; Cheung and Lin, 2004; Aghion *et al.*, 2009 and Lin and Lin, 2010): we have explained here, starting with the host firms themselves, the channels through which FDI impacts positively on their (host firm) innovative activities. One of the possible channels through which host firms are impacted is the transfer of staff with superior knowledge from home firms to host firms or subsidiary firms (Caves, 1974 and Blomstrom and Kokko, 1998).

This normally happen because of the home firm's financial interest in the host firm. This superior knowledge is transferred consciously to the local staff in the host firm by in-house training or transmitted to the local staff within the firm through continual observation by the host firm local staff.

Besides, superior knowledge can also be transferred by way of the home firm accepting host firm staff for skill training in the home firm; training which might not be available locally. During these training sessions, home firms train and reveal all their innovative skills to the host firms due to their (home firms) financial interest in the host firm. Besides, the presence of foreign owners on the management board of host firm through FDI infuse innovativeness into host firm activities as foreign owners bring on board their superior skills and knowledge for the effective and efficient operation of the host firm. Supporting this view, Garcia *et al.* (2013) noted that knowledge transfer is one of the ways through which local firms get innovation and high firm performance from foreign direct investment. Other supporters of this superior knowledge transfer proposition believe strongly that foreign investors are diffusers of innovative practices to host firms (Bellak, 2004; and Sadowski and Sadowski-Rasters, 2006).

Apart from the superior knowledge transfer, host firms also benefit immensely from FDI by way of capital base enhancement. As local firms have access to foreign capital, their capital base is boosted, which can be translated into positive innovation for host firms. This is possible through a number of channels. The host firm is in a financial position to hire qualified workforce and has the ability to adopt the best approaches and techniques needed in its operations (Glass and Saggi, 2002). Through enhanced capital, the host firm is in the position to hire and retain the best brains either locally or from the international job market, which is needed for the conception or expansion of every innovation. In addition to the qualified workforce, some material resources in the form of machinery, patent, license and other best operation mechanisms are needed for some kinds of innovation to take place. With the enhanced capital base, FDI base firms are in a better position to acquire these resources than non-FDI base firms.

The channels through which FDI impacts positively on other local firms besides firms hosting it are discussed as follows: the entrance of foreign investors lead to high competition thereby producing efficiency and engendering economies of scale for local firms, enabling them to increase productivity. As productivity goes up the firm has resources that it can spare for innovation through

research and development. Competition has long been noted for engendering innovation (Schumpeter, 1942 and Aghion *et al.*, 2001). According to Blomstrom and Kokko (1998), competition due to the foreign entrance also enhances the allocative and technical efficiency of firms and induces innovation, thus it is expected that FDI will lead to firms innovating better. Chung *et al.* (2003) found evidence in the USA to support this argument when they established that through the entrance of Japanese automobile firms into the USA, competition became fierce and through that a lot of innovations were employed by the USA automobile industry in order for them to be competitive in business.

One of the channels through which FDI can impact positively on a domestic firm's road to innovation is through the increase in demand for intermediate products (Rodriguez-Clare 1995). Once there is a high demand for products from local firms, local firms are forced into adopting innovative and efficient ways of producing in large quantity to satisfy the demand in order not to lose their market share. Transfer of knowledge is also one of the means through which FDI impacts positively on local firms. This occurs through imitation by local firms by observations or learning from foreign firms during interactions or reverse engineering of the foreign products (Salomon, 2006). Knowledge again is transferred from FDI based firms to other local firms through transfer of employees.

### ***Negative Relationship Between FDI and Firm Innovation***

In contrast to the positive link between FDI and firm innovation, Vernon (1966) using his "Product Life Cycle theory" believes that a negative relationship can exist between FDI and firm innovation. He argues that multi-national enterprises (MNEs) spend more on innovation in their activities at the introductory stage of the firm's life cycle and move into host countries at the mature stage where less is spent here on research and development. During the introductory stage of a product, much is spent in researching into how to enhance the product and by so doing, the firm does not only develop its processes but it is able to train its staff on how to carry out these processes effectively and efficiently. By way of searching for a bigger market, cheap raw materials and other local advantages, MNEs migrate into host firms where everything is either done in the home country and sent to the host firm for distribution or for final processing where less innovation is needed (Yang *et al.*, 2013). By so doing the FDI led firm stops completely to research at this time because, it is being fed by its mother firm in the ways of carrying out its activities. Thus less

technical issues are left in the hands of the host firm employees who are not able to develop their skills and talents because their mother firm and its officers are doing everything for them. In this case, FDI is obviously retarding innovation in the host firm as no serious research and development activities are done at this level.

Another theory that explains the inverse relationship between FDI and firm innovation is the pull factor theory developed by (Dunning, 1995). This theory argues that foreign investors are sometimes pulled into a host firm due to the higher innovation that the host firm has so as to learn and adopt it into the mother firm. Normally firms that move into host firm with such intension do not spend anything on research and innovation as they do not intend to innovate in the host firms but rather try to replicate same in their home firms. By doing that more research and development is rather concentrated on their home country so as to adopt the superior innovation from the host firms into the home firm. One of the channels such MNEs adopt that aids the destruction of value in the host firms is by way of sending most of the high skills and talented staff from the host firms to the home firm so as to replicate the superior technology and because MNEs are able to pay better remunerations they end up weakening the host firms' ability to innovate by not only taking away their superior innovation but also taking away most of their best brains. This therefore destroys the host firms' ability to innovate and hence the inverse relationship between FDI and firm innovation.

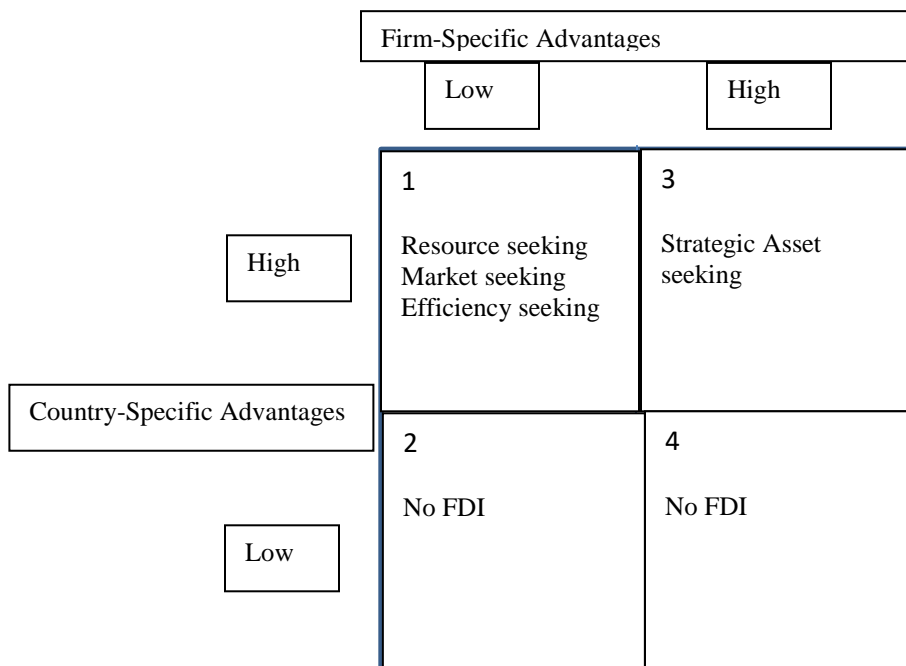
### ***Mixed Relationship Between FDI and Firm Innovation***

One of the theories that explains the possible mixed theoretical link between FDI and firm innovation is the reconciled FSA/CSA framework with Dunning's four motives of FDI illustrated by Yang *et al.*, (2013). The framework is shown in the figure 5.7. In this framework, FSA stands for firm specific advantages referring to the MNEs valuable, non-substitutable and difficult to imitate resources and capabilities (Barney, 1991). These advantages could include: upward technological knowledge, administrative knowledge, reputational resources and institutional routines (Yang *et al.*, 2013). The FSAs is categorized into internationally transferable and non-transferable (Rugman and Verbeke, 2001). While the former is noted to transfer innovation across borders, the latter does not (Verbeke, 2009). On the other hand, CSA stands for country specific advantages and this refers to the whole set of strengths of a host country or firm (Barney, 1991).

These could be in the form of land, labour, capital, entrepreneurship, demand conditions, knowledge base or conducive social and institutional advantages.

The x-axis of the reconciled FSA/CSA framework focuses on whether MNEs' FSAs are weak or strong compared with competitors whereas the y-axis looks at whether or not CSAs of the host country/firm are weak or strong compared with other hosts.

Figure 5.7: Reconciled FSA/CSA Framework



Source: Rugman, 2010

From the figure above, cell 1 is where the FSAs are low while the CSAs are high. Thus FDI is attracted by the CSAs and it does not matter at all whether or not the MNEs have some firm specific advantages or not. In this cell the MNEs' motives of FDI are the resource seeking, market seeking and efficiency seeking. Cell 3 is the strategic asset seeking FDI motivated MNEs activities. This is where the parent company has FSAs but seeks to explore the CSAs that exist in the host firm so as to augment its strengths. In this cell, the MNEs expand into the host firm with the view to searching for advanced resources including upward-technological knowledge, downward marketing knowledge, administrative knowledge or reputational resources. For instance, Almeida (1996) established that in the semi-conductor industry, the objective of MNEs from Europe and

Korea to the USA was to offset a technological deficient in their home countries. Apart from that small Taiwanese MNEs treat FDI as a conduit to link with resources that MNEs need but do not have them at home markets.

Cell 2 and 4 would not attract FDI as CSAs are low. In that case no MNEs will be interested in expanding into such locations/firms. Hence our concentration is on cell 1 and 3 alone. Whereas high CSAs are needed for each of Dunning's four FDI motives to take place, FSAs are not a necessity for the natural resource seeking FDI, market seeking FDI and Efficiency seeking FDI (Rugman, 2010). Thus there is a low probability of host firms benefiting in innovation from FDI inflows which fall into cell 1 category as the MNEs may not have any FSAs to transfer to the host firms with the exception of boosting the capital base of the host firm. Cell 3 category is where more gains and losses exist for the host firms in the FDI inflows. Gains in this cell are enormous if the FSAs are internationally transferable into the host firms. In this case the host firms are able to benefit from the FSAs of the MNEs and hence their innovative capacity will enhance as compared to the non-FDI firms who have no affiliation with any MNEs.

On the contrary, where the MNEs FSAs are non-transferable, the parent country is likely going to gain from the host firms by exploiting the host firms' advantages without transferring any of their advantages to the local firms to boost their innovation. In this instance, FDI inflows will have no significant impact on host firms or at worst destroys firm innovative capabilities by taking away their strategic assets without leaving behind any benefits to the firm. Blind and Jungmittag (2004) also state that the relationship between FDI and innovation will depend on the type of FDI flow. Where the FDI flow is in the form of "green field investment" i.e. new business, the impact on the host firm will be positive as they will have access to more capital. Where it is a takeover deal, it will depend on which firm has superior innovations (the acquired firm or the buyer). If the foreign firm has superior innovations, it will lead to a positive impact on the host firm while the reverse is also true. Another theory that illustrates the mixed relationship is the distance to technology frontier. The theory believes that the larger the technological gap between the host FDI and home FDI, the more likely a positive innovation impact of FDI will be realised. From other perspectives, the impact of FDI on innovation depends mainly on the absorptive capacity of host firms. With a higher absorptive capacity innovation is positively impacted by FDI. However, if absorptive

capacity is low then domestic firms struggle to adopt new and superior technologies and this could negatively affect innovation.

#### **5.4.2 Overview of Empirical Literature**

The empirical research on the relationship between FDI and innovation has varied findings. Some studies here established that FDI inflows have a positive impact on innovations of host country firms, whilst others have established different findings. For instance, Bertschek (1995), studied the impact of FDI on local innovation among 1,270 firms in the West German manufacturing industry. With a probit model, it was realized that FDI has a positive effect on product and process innovation as local firms have to increase their efficiency in order to stay in the market. Using more comprehensive data of 2,019 firms in the same economy, Blind and Jungmittag (2004) confirmed this earlier finding. They realised that the inflows of FDI into target firms have high positive significance on both product and process innovation. Lin and Lin (2009) using the technological survey carried out in Taiwan from 2001 to 2002, concluded that FDI leads to technological development. With GMM estimators, Liu and Zou (2008) studied the impact of FDI on domestic firms. They realized that importing foreign technology through FDI leads to domestic innovation.

In their study, Dachs and Ebersberger (2009) established that membership of multi-national enterprise group significantly improves firm's innovative ability by way of assisting the firm to overcome innovation obstacles such as lack of financial resources, lack of technological and market information or organizational problems. In supporting these studies, Ghazel and Zulkhibri (2014) and Khachoo and Sharma (2016) in their separate studies noted that FDI is a good catalyst in innovative abilities of host firms. Khachoo and Sharma (2016) studies however pointed out that the positive FDI-innovation link is seen more in firms residing in identical industries. Again Antonietti *et al.*, (2014) established a positive relationship between FDI and firm innovation only in the service sector of the economy among firms in Italy.

Similarly, Cheung and Lin (2003) found in their study that FDI is positive in driving innovation to domestic firms in China. Iacovone *et al.*, (2008) arrived at the same conclusion when they investigated the impact of the entry of Walmart into Mexico. Closely related to these studies is Vahter (2010), whose study established that there was no evidence of increases in productivity as a result of FDI inflows. It equally found that there was a positive spillover of innovation as a result

of the FDI while Saggi (1999) noted in his study that foreign firms transfer the best technology to local firms through the channel of FDI.

On the other hand, Maaso *et al.*, (2012) found that FDI does not lead to innovation. Their study was carried out in Central and Eastern Europe between the period of 1998 and 2006 with the use of the Tobit model. Using the same Tobit model on German firms, Stiebale and Reize (2010) did not only find that FDI does not lead to innovation transfer but also that it leads to a negative effect on local firms' innovations. Similarly, using a comprehensive dataset of 1799 Spanish manufacturing firms, Garcia *et al.* (2013) established that FDI has a negative relationship with innovative performance of local firms. Using 418 firms from the World Bank Enterprise Survey dataset on SSA, Barasa *et al.* (2018) realized that foreign technology has a negative effect on technical efficiency of firms in SSA.

A host of studies also confirm the endogeneity between FDI and innovation. For instance, De la Potterie and Lichtenberg (2001) using 13 industrialised countries, found that FDI inflow transfers technology to local firms but the effect is felt in countries where research and development is intensive. Another study by Kinoshita (2000) in Czechoslovakia also established that there was an increase in innovation by FDI but this was limited to sectors that had invested in innovative research and development. Thus, Roselt-Martinez and Sanchez-Sellero (2012), using GMM on Spanish manufacturing industry firms found that FDI flows to sectors which are research and development intensive sectors. Using a Tobit model on 30,000 state owned firms in China, Girma *et al.* (2005) found similar results. They realized that FDI has a negative effect on state owned firms that do not export, invest in research and development or had earlier innovation experience. They concluded that research and development are principal components to innovation in firms, thus FDI could be endogenous to innovation.

Sivalogathan and Wu (2014) carried out a study on FDI and innovation in South Asian countries covering a period of 12 years (from 2000-2011). They discovered that R&D is a very significant determinant of innovation capability. Besides, they noted that though FDI impacts positively on firms' innovation, the strength of this positive link depends heavily on the availability of the absorptive capacity and the presence of innovative complementary assets in the host firms. Similarly, Loukil (2016) realized that below certain threshold value of technological development, FDI has negative impact on innovation of host firms but above this threshold, FDI impacts



positively on the innovative ability of host firms in developing countries. This implies that though FDI could be a key channel through which innovation moves from advanced economies to developing economies, there must be some complementary assets to realize this effectively.

From the discussion, there is clearly a high degree of uncertainty surrounding the link between FDI and firm innovation. Nonetheless a part of the literature which has not been fully investigated. This is the endogeneity between FDI and innovation as demonstrated by the “pull factor theory” developed by Dunning (1995). Dunning (1995) argues that foreign investors in recent times are not just pushed into host countries because foreign companies have more economic advantages than the host firms but they are also pulled by the innovations located in the recipient countries so that they can also learn and adopt such innovations into the mother firm at home. This therefore shows that FDI and innovation are endogenous and thus there is need to control for this endogeneity. Failure to control for endogeneity can result in conflicting results.

## 5.5 DATA AND METHODOLOGY

### 5.5.1 Data and Sample

The study employed cross-sectional data of the standardised version of the World Bank Enterprise Survey for our investigation. We used the latest survey on Nigeria 2014 and South Africa 2007. The survey provides firm level data on a sample of service and manufacturing firms across developing countries in the world. The survey uses face-to-face interview preceded by a random sampling technique and consistent methodology of implementation across all surveyed countries. In the survey both qualitative and quantitative information are sought from business owners and managers. The composition of the firms of the two countries is indicated in the table 5.1.

Table 5.1: Composition of the Sample

Country	Survey Year	Number of firms
Nigeria	2014	2310
South Africa	2007	908

### 5.5.2. Construction of innovation index

According to OECD (2005:46), product innovation is the introduction of goods or a service that is new or significantly improved with respect to its characteristics or intended uses while a process innovation is the implementation of a new or significantly improved production or delivery

method. We adopt the World Bank Enterprise Survey database definitions with modifications where product innovation is made up of the combination of two variables: international quality certificate and foreign technology license; while process innovation is made up of three variables: usage of email, possession of website and having audited financial statements. Unlike previous studies we created innovation indexes using multiple correspondent analysis (MCA). MCA is chosen as it is very appropriate for our data. It does not only assign weight according to the significance of the variables in the index but it is well suited for the creation of indexes with categorical components. It is therefore viewed as a generalisation of principal component analysis when the variables are binary or categorical in nature (Asselin, 2002; Abdi and Valentin, 2007). The MCA indexes are created using a standard correspondence analysis on an indicator matrix whose entries are coded categorically. The MCA extracts the first factorial axis which retains the maximum information contained in the matrix. In this instance the index, innovation, is a function of some underlying variables  $K_{ij}$ , such that  $K_{ij}$  represents firm  $i$ 's possession or usage of a particular innovation element or the lack or non-usage of it  $j$  (Booyesen *et al.*, 2008; Johnston and Abreu, 2013 and Akotey and Adjasi, 2015).

Following previous studies (See: Benzi, 1973; Van Kem, 1998, Booyesen *et al.*, 2008 and Akotey and Adjasi, 2015) we adopt the MCA innovation index as stated below in computing the weight of the individual innovation elements:

$$\alpha_i = \sum_{k=1}^k F_{1k} d_{ki} \dots \dots \dots (5.1)$$

Where  $i$ th firm innovation index is  $\alpha_i$ ,  $d_{ki}$  is the  $k$ th value of the categorical variables (with  $k=1 \dots K$ ) indicating the firms' innovation variables included in the index construction.  $F_{1k}$  is the MCA weights generated for the analysis. The weights computed are presented below in table 5.2. At the creation of the innovation index there should not be any reverse variable. In the construction of the index the alpha command was used to detect any reverse variables. If any reverse variable was detected it was dropped. This is because reverse variables have a negative impact on the index (Booyesen *et al.*, 2008). All the indices met the a priori expectation.

Summary statistics of the indexes created are shown below in table 5.3. It is realized from the minimum scale of reliability that there is sufficient credibility on the indexes created and can therefore be relied on for any analysis.

Table 5.2: Weight Generated from the MCA

<b>Variables</b>	<b>South Africa Categories</b>	<b>Weight</b>
<i>Product Innovation</i>		
Internationally Recognized Quality Certificate(IRQC)	Has IRQC	1.291
	Does not have IRQC	-0.775
Technology License(TL)	Has TL	2.408
	Does not have TL	-0.415
<i>Process Innovation</i>		
Email	Uses email in transaction	0.608
	Does not use email in transactions	-1.879
Website	Has a website	1.190
	Does not have a website	-0.938
Audited Financial Statement(AFS)	Are audited by external auditors	0.496
	Are not audited by external auditors	-1.498
<b>Variables</b>	<b>Nigeria Categories</b>	<b>Weight</b>
<i>Product Innovation</i>		
Internationally Recognized Quality Certificate(IRQC)	Has IRQC	2.927
	Does not have IRQC	-0.342
Technology License(TL)	Has TL	2.777
	Does not have TL	-0.360
<i>Process Innovation</i>		
Email	Uses email in transaction	1.719
	Does not use email in transactions	-0.653
Website	Has a website	2.163
	Does not have a website	-0.532
Audited Financial Statement(AFS)	Are audited by external auditors	1.502
	Are not audited by external auditors	-0.484



Table 5.4: Variable Description

<b>Variable</b>	<b>Definition</b>
Export	It is the percentage of sales made through export
Product Innovation	It is an index computed by the usage of Multiple Correspondence Analysis (MCA) technique. It is made up of the following: the possession of International quality certification, and the possession of a Foreign technology license.
Process Innovation	It is an index computed by the usage of Multiple Correspondence Analysis (MCA) technique. It is made of the following: Ownership of Website, Usage of Email to communicate with clients and having Audited financial statements by external auditors.
FDI	Dummy variable equals to one if, at least, 10% of the firm is owned by private foreign individuals, companies or organisations.
Training	Dummy variable equals to one if the firm run formal training for its employees
Age	Log of years in operation
Sales	Log of total annual sales of the firm
Size	It refers to the number of employees of the firm. It is made up of three categorical variables i.e. small=1, medium=2 and large=3. A firm with employees less than twenty is small, a firm with employees greater than or equals to twenty but less than hundred is medium while large is a firm that has up to hundred and above employees.

### 5.5.3 Theoretical Underpinning of the Model

**FDI-** Our a priori expectation is that FDI will have a positive impact on product innovation and process innovation. This is premised on the background that FDI leads to the transfer of superior knowledge from parent companies to host firms (Smarzynska, 2003). FDI furthermore reduces the financial constraints on firms, making them capable of carrying out research and development and also have the ability to hire highly qualified workers which together serve as stimulants to innovation in firms (Kinoshita, 2000). The context of Nigeria and South Africa, as already

discussed, are different from that of other developing countries and likely to provide us with interesting results and addition to the literature.

**Training** - This captures human capital (Seker, 2011). Formal training in the form of refresher courses and competence professional development are channels through which employees are trained on how to adopt modern and up-to-date techniques in performing tasks. This is usually translated into innovative activities at the workplace, especially process innovation which requires workforce that has at least basic computer skills. Girma *et al.* (2005) found a significant positive relationship between training and the adoption of innovation. Based on this, our a priori expectation is that training will have a positive impact on innovation.

**Size**- Size is a key determinant of innovation (Schumpeter, 1942). It is expected that larger firms will have more resources to be able to invest more in research and development leading to innovation. Seker (2011) found results to support this view that large firms are more innovative than smaller firms. On the other hand, it is argued that smaller firms will also need to innovate if they want to growth (Garcia *et al.*, 2013). It is thus very important to control for size in the modeling. Our a priori expectation is that size will have a positive impact on innovation.

**Export**- Exposure to foreign trade forces firms to acquire superior skills and this leads to a reduction of inefficiency and thus higher performance (Chibber and Majundar, 1999). It has also been confirmed by Girma *et al.* (2005); and Pla-Barber and Alegre (2007) that operating in a competitive environment through export compels the firm to innovate in order to survive in the competitive business environment. Export is therefore expected to relate positively with innovation.

**Age**- The relationship between age and innovation is not clear. It can be argued that as firms advance in years they become well-resourced and therefore can have the ability to innovate. On the other hand, it can be argued that firms innovate more at their introductory stage than at the mature stage. Findings from Seker (2011) confirm this assertion that younger firms are more innovative than older firms in developing countries. It is, however, contrary to an earlier study by Girma *et al.* (2005) that established that older firms are more innovative than younger firms. This

variable is expected to control for either of the argument. Our a priori expectation is that age will have a positive or a negative impact on innovation.

**Sales-** The volume of sales realized by a firm can also be a key determinant of its innovation ability. Volume of sales serves as an indicator of the profitability level of the firm. With the availability of funds through profit reserves, firms are able to invest in research and development activities, acquire modern techniques of carrying out their operations and able to hire a qualified workforce that can spur up innovation in the firms. Based on the above we expect sales to impact positively on innovation.

#### 5.5.4 Instrumental Variable

To overcome the endogeneity problem between FDI and innovation in our estimation, we employed the instrumental variable two stage least square (IV2SLS) and instrumental limited information maximum likelihood (IVLIML) estimation techniques. IV has the power to control for all unobservable factors and measurement errors in the model (Baum, 2008). The general model of IV as presented by Stock and Watson (2007), is as follows:

$$Y_i = \beta_0 + \beta_1 X_{1i} + \dots + \beta_k X_{ki} + \beta_{k+1} W_{1i} + \dots + \beta_{k+r} W_{ri} + \mu_i \dots \dots \dots (5.4)$$

$i = 1, \dots, n$  where  $Y_i$  is the independent variable

$\mu_i$  is the error term which represents measurement errors or omitted factors

$X_{1i}, \dots, X_{ri}$  are  $k$  endogenous regressors which are potentially correlated with  $\mu_i$

$W_{1i}, \dots, W_{ri}$  are included exogenous regressors which are uncorrelated with the  $\mu_i$

$\beta_0, \beta_1, \dots, \beta_{k+r}$  are unknown regression coefficients

The coefficients are over identified if there are more instruments than endogenous regressors ( $m > k$ ); they are under identified if  $m < k$  and they are exactly identified if  $m = k$ .

The model in equation 5.4 above is computed in two stages: In the first-stage regression(s): the endogenous variable  $X_{1i}$  is regressed on the instrumental variables ( $Z_{1i}, \dots, Z_{mi}$ ) together with the exogenous variables ( $W_{1i}, \dots, W_{ri}$ ) and we compute the predicted values from this regression.

In the second-stage regression, we regress the dependent variable  $Y_i$  on the predicted values of the endogenous variables and the included exogenous variables.

To produce unbiased results under the IV model, an observed variable which is the instrumental variable is required which has a strong correlation with FDI, our main independent variable, but does not correlate with the error term. We selected labour cost and court fairness as instruments for South Africa and Nigeria respectively. Court fairness, impartiality and incorruptibility means there is rule of law working effectively. Every foreign investor is interested in the safety of their investment and rights as an investor. Therefore, FDI is attracted to countries where the court system guarantees investors rights by way of fair judgment (Lee and Mansfield, 1996 and Globerman and Shapiro, 2003).

Similarly, labour cost is a key determinant of FDI inflows. Theoretically, one of the reasons for foreign investors going abroad to invest is to leverage on cheap labour so as to reduce cost of production (Dunning, 1993). This is particularly apparent where foreign investment is in labour-intensive sectors like the extraction of raw materials and the manufacturing sectors. Hence firms that have lower cost of labour will tend to attract foreign investors than those with high cost of labour. Cost of labour on the other hand will have no correlation with a firm's ability to innovate.

Our first stage regression is an OLS regression but has the selected instruments,  $z_i$ , as additional independent variables. Following the approach of Khadker *et al.*, (2010); Janzen and Carter (2013) and Akotey and Adjasi (2015) the first stage regression is:

$$FDI_i = \gamma z_i + \phi x_i + \mu_i \dots \dots \dots (5.5)$$

Where  $FDI_i$  is equal to one (1) if firm<sub>*i*</sub> has at least 10% of its equity being foreign, otherwise zero (0),  $z_i$  is the selected instruments  $x_i$  is a vector of covariates which affect a firm's innovation ability and  $\mu_i$  is the error term. In the second stage, the predicted values of FDI ( $\overline{FDI}_i$ ) is substituted in equation (5.6) to obtain the outcome equation (Khandker *et al.* 2010).

$$Innovation_i = \alpha X_i + \beta \overline{FDI}_i + \varepsilon_i \dots \dots \dots (5.6)$$

$$Innovation_i = \alpha X_i + \beta (\hat{\gamma} z_i + \hat{\phi} x_i + \mu_i) + \varepsilon_i \dots \dots \dots (5.7)$$



Where  $\hat{Y}Z_i + \hat{\phi}X_i + \mu_i$  is the predicted probability of getting FDI inflows. Under the IV the impact of FDI on innovation is  $\hat{\beta}_{iv}$ .

The validity of our instruments is very crucial in determining the robustness of our results. Every valid instrument must satisfy the condition of instrument relevance and instrument exogeneity. Where an instrument fails to pass the test of relevance the instrument is said to be weak and the results produced from such an instrument will be biased. According to Stock and Watson (2007), the rule of thumb in checking for weak instrument is that in a situation where there is a single endogenous regressor, a first-stage F-statistic less than 10 indicates that the instrument is weak. Stock and Yogo (2005) have, however, provided for a formal test for a weak instrument. In their test, the null hypothesis is that the instruments are weak and the alternative hypothesis is that the instruments are strong. The strong instruments are those for which the bias of 2SLS estimator is at most 10% of the bias of the OLS estimator.

This test entails the comparison of the F-statistic with a critical value that depends on the number of instruments. For a test with a 5% significance level, this critical value ranges between 9.08 and 11.52, so the rule of thumb of comparing F-statistic to 10 is a good approximation to the Stock and Yogo test. To test for the relevance of these instruments chosen, we employed the critical values of Stock and Yogo (2005) and the minimum Eigen value of Cragg and Donald (1993). To reject the null hypothesis and conclude that the instruments are valid, the Cragg and Donald (1993) minimum Eigen value must be greater than the Stock and Yogo (2005) critical value. As shown in Table 5.10 in the appendix for our post estimation tests, our minimum Eigen values of Cragg and Donald (1993) for South Africa are greater than the Stock and Yogo (2005) critical values of Wald test at 15% ,20% and 30%. For that of Nigeria, the minimum Eigen values of Cragg and Donald (1993) are only greater than the Stock and Yogo (2005) critical values of Wald test at only 20% and 30%. However, at 10% both instruments have their minimum Eigen values at less than the critical values. Thus, we conclude that both of the instruments are relevant for both the countries but are weak. Stock and Watson, (2007) established that IVLIML estimator is a better option with weak instruments in producing unbiased results than IV2SLS. The IVLIML tends to be more centered on the true  $\beta$  than IV2SLS. Where the instruments are strong the IV2SLS and IVLIML

estimators coincides in large sample. Following this, we relied on the IVLIML estimation results for our analysis. We could not test for our instruments exogeneity in our models since our models are just identified (our endogenous variables are equal to the instruments) and hence there is no formal way of testing for this (Stock and Watson, 2007).

## **5.6 EMPIRICAL FINDINGS**

### **5.6.1 Descriptive Statistics**

Table 5.5 shows the descriptive statistics of firms in the two countries. On average both countries have higher process innovation than product innovation at firm level as seen in the table. Expectedly, South African firms perform better in both innovation indexes. It has about the highest average mean of the product innovation (1.14) and process innovation (1.96). Nigeria recorded the least average performance of 0.11 and 0.89 indexes for the product and process innovations respectively.

There is a great gap between South Africa and Nigeria in terms of a firm's age. While the average age in Nigeria is approximately 18 years and 10 months that of South Africa is approximately 26 years and 3 months. The size of firm measured by the number of employees is varied with South Africa having the highest average number of employees of 104 employees while Nigeria has the least with an average number of 43 employees. This means that while the majority of firms in South Africa are classified as large firms, most of the firms in Nigeria are medium size firms

Table 5.5: Summary Statistics

<b>Nigeria</b>					
<b>Variable</b>	<b>Mean</b>	<b>Std. Dev.</b>	<b>Min.</b>	<b>Max</b>	<b>Obs.</b>
Product Innovation	0.11	0.94	0	2.91	1003
Process Innovation	0.89	0.89	0.16	3.06	2343
Training	0.30	0.46	0	1	2346
FDI	0.13	0.34	0	1	2387
Export	12.14	19.13	0	100	2153
Age	18.86	41.52	1	169	2396
Total Employees(Size)	43.46	231.09	2	5000	2232
Sales	2.12e+09	3.06e+10	0	1.00e+12	2452
<b>South Africa</b>					
<b>Variable</b>	<b>Mean</b>	<b>Std. Dev.</b>	<b>Min.</b>	<b>Max.</b>	<b>Obs.</b>
Product Innovation	1.14	0.99	0	2.80	680
Process Innovation	1.95	0.92	0.26	2.90	936
Training	0.43	0.50	0	1	936
FDI	0.12	0.33	0	1	935
Export	5.21	9.61	0	100	937
Age	26.29	18.33	9	150	936
Total Employees(Size)	104.10	446.15	5	9600	908
Sales	7.90e+07	4.26e+08	90,000	7.20e+09	937

### 5.6.2 Regression Results

For all our estimations, we made use of STATA 12 software in generation our results. Tables 5.6 to 5.9 show our regression results for both IV2SLS and IVLIML estimations on the linkages between FDI and innovation for our two selected countries, Nigeria and South Africa respectively. We, however, rely on the IVLIML for our discussions and analysis as our post estimation tests shown in the appendix indicate that our instruments are weak and hence IVLIML is preferred to the IV2SLS. From our results, it is evident that there is a link between FDI and innovation. In Nigeria, there is a positive significant relationship between FDI and both product and process innovation. The positive link between FDI and innovation established in Nigeria could be attributed to two things.

Firstly, with the inflows of FDI into host firms, capital level of the firms is enhanced relieving such firms from financial constraints which is a key challenge to most firms in Africa. With the availability of finance, these firms are able to devote some funds to research and development activities which stimulate innovation in the long run. Having enough funds through FDI inflows also means that these firms are able to acquire high technology tools and equipment together with

hiring the best human resources who can propel innovation in such firms. Secondly, the inflow of FDI does not only boost the financial strength of the host firms but it comes with it the transfer of superior knowledge from source firms. This is possible as MNEs are said to have better technology than non-MNEs firms (Markusen, 2002). This relationship between FDI and innovation in Nigeria is a confirmation of previous studies which realized that through improved efficiency and more capital availability brought by FDI inflow, FDI firms perform better in innovation than non-FDI firms both in process and product innovations (see: Bertschek 1995; Blind and Jungmittag, 2004; Lin and Lin, 2009; Lin and Zou, 2008 and Saggi, 1999). This is contrary to other earlier studies which found FDI to have a negative impact on innovation ability of firms (see: Stiebale and Reize, 2010 and Garcia *et al.*, 2013).

The results can also be explained by the position of Nigeria in the Global Innovation Index. Nigeria has been ranked 123rd position globally on the ability to innovate and placed 20<sup>th</sup> in the SSA region. Given that most of the inflows to Africa are not from Africa but other advanced world, it is thus plausible to believe that most of the FDI are flowing into Nigeria from countries which have better innovative capacity than Nigeria hence the positive impact realized from the inflow of FDI on the Nigerian firms. Again, according to the Global Innovative Index (2015), Nigeria is poorly ranked as far as access to domestic credit by private sector (116<sup>th</sup> position), adoption of R&D activities in firms (80<sup>th</sup> position) and access to ICT (127<sup>th</sup> position) are concerned. This therefore means the inflows of FDI into Nigeria firms strongly boost access to capital by the host firms. Thus the enhanced capital base of the host firms together with superior knowledge from FDI inflows, the host firms are able to increase their spending on both R&D and ICT access which are serious catalyst in provoking innovation in firms.

FDI has no significant impact on both product and process innovation in South Africa. It is in support of Maaso *et al.* (2012) which established that FDI has no impact on innovation in Central and Eastern Europe. It is also in tandem with the findings of Kinoshita (2000), De la Potterie and Lichtenberg (2001), and Garcia *et al.* (2005) who established that the positive impact of FDI on innovation is only possible in firms where research and development is intensive. In our case, South Africa is advanced, especially in the area of process innovation and this could explain the insignificant effect. It is in line with both “the distance to technology frontier (DTF)” and “pull factor (PF)” theories. The DTF believes that the greater the difference in technology development

between the home and host country of FDI, the greater the pressure to adopt the new technology and the reverse is true (Findlay, 1978).

Similarly, PF argues that foreign investors are sometimes pulled into a host firm due to the higher innovation that the host firm has so as to learn and adopt it into the mother firm (Dunning, 1995). In the case of South Africa, there may be no technology gap at all with the home firm of the FDI. In some cases, where FDI is coming from other developing world countries, South Africa could be ahead of such foreign investors' home countries in terms of innovation and this could be accounting for such insignificant relationships. For instance, on domestic credit to private sector, South Africa is ranked 16<sup>th</sup> globally (Global Innovation Index, 2015). This implies that South Africa is doing better than most countries in the world thus the inflow of FDI may not be seen significantly as far as private firm capital base is concerned unlike most African countries where access to credit is a main challenge to private firms' performance (Global Innovation Index, 2015). Again South Africa has demonstrated its dominancy when it comes to R&D (36<sup>th</sup> position) and access to ICT (86<sup>th</sup> position) globally. This shows that South African firms are doing very well in research and development already and thus MNEs moving into South Africa may not concentrate again on these areas but also channel their resources into other areas that may need to be boosted for better performance in the firm thus the non-significant of the inflows on the host firms' innovation.

On the control variables, formal training organized for staff is found to be statistically significant and positive with innovation especially in South Africa for both process and product innovations, thus training of staff leads to enhancement in innovation of firms in South Africa. The size of the firm is noted to have a link with innovation in both countries. It is realized that medium size and large firms are significantly positive than small firms. It therefore means that larger firms are more innovative than smaller firms.

Similarly, older firms are found to exhibit higher innovation than younger firms in South Africa with product innovation. With regard to export of products, there is a linkage though a mixed one. While the linkage between export and innovation is positively significant on both product innovation and process innovation in South Africa, it is only negatively significant with process innovation in Nigeria. This positive linkage between product innovation and export is attributed to the high standards that exporting firms are expected to meet to enable their products be

acceptable to the host countries. As expected, sales are found to strongly impacts innovation positively in both countries.

Table 5.6: Instrumental variables Two Stage Least Square Regression for Nigeria

Independent Variable	(1) Product Innovation	(2) Process Innovation
FDI	2.922**(1.443)	1.688*(0.927)
Log of Age	-0.0007(0.0009)	-0.0004(0.0006)
Log of sales	0.0803***(0.0144)	0.0783***(0.0098)
Training	0.0917(0.0823)	0.277***(0.0586)
Export	-0.0126(0.0084)	-0.0093*(0.0054)
<u>Firm Size</u>		
Medium	0.182**(0.0874)	0.524***(0.0595)
Large	0.373(0.305)	1.016***(0.192)
Constant	-1.044***(0.192)	-1.553***(0.144)
Wald $\chi^2$ (7)	157.33	586.28
Prob> $\chi^2$	0.0000	0.0000
Observations	1,778	1,829
R-squared	0.126	0.115

Standard errors in parentheses

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

Table 5.7: Instrumental Variables LIML Regression for Nigeria

Independent Variable	(1) Product Innovation	(2) Process Innovation
FDI	2.922**(1.443)	1.688*(0.927)
Log of Age	-0.0007(0.0009)	-0.0004(0.0006)
Log of sales	0.0803***(0.0144)	0.0783***(0.0098)
Training	0.0917(0.0823)	0.277***(0.0586)
Export	-0.0126(0.0084)	-0.0093*(0.0054)
<u>Firm Size</u>		
Medium	0.182**(0.0874)	0.524***(0.0595)
Large	0.373(0.305)	1.016***(0.192)
Constant	-1.044***(0.209)	-1.553***(0.144)
Wald $\chi^2$ (7)	157.33	586.28
Prob> $\chi^2$	0.0000	0.0000
Observations	1,778	1,829
R-squared	0.126	0.115

Standard errors in parentheses

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

Table 5.8: Instrumental variables two stage least square regression for South Africa

Independent Variable	(1)	(2)
	Product Innovation	Process Innovation
FDI	-34.08(120.2)	-1.694(1.074)
Log of Age	0.138(0.757)	0.0919(0.0587)
Log of sales	1.301(4.037)	0.216***(0.0429)
Training	0.111(0.834)	0.199***(0.0612)
Export	0.139(0.469)	0.0132***(0.0049)
<u>Firm Size</u>		
Medium	-1.879(8.290)	0.340***(0.105)
Large	2.619(7.723)	0.580***(0.140)
Constant	-15.09(49.00)	-1.940***(0.557)
Wald $\chi^2$ (7)	665.57	451.76
Prob> $\chi^2$	0.0000	0.0000
Observations	936	936
R-squared	0.156	0.147

Standard errors in parentheses

\*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1

Table 5.9: Instrumental variables LIML regression for South Africa

Independent Variable	(1)	(2)
	Product Innovation	Process Innovation
FDI	-1.205(1.024)	-1.694(1.074)
Log of Age	0.138**(0.0560)	0.0919(0.0587)
Log of sales	0.217***(0.0409)	0.216***(0.0429)
Training	0.281***(0.0583)	0.199***(0.0612)
Export	0.0151***(0.0046)	0.0132***(0.0049)
<u>Firm Size</u>		
Medium	0.326***(0.100)	0.340***(0.105)
Large	0.590***(0.134)	0.580***(0.140)
Constant	-3.011***(0.531)	-1.940***(0.557)
Wald $\chi^2$ (7)	665.57	451.76
Prob> $\chi^2$	0.0000	0.0000
Observations	936	936
R-squared	0.322	0.147

Standard errors in parentheses

\*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1

## 5.7 CONCLUSION AND POLICY RECOMMENDATIONS

Innovation in firms has been a huge catalyst in productivity and hence, a booster for economic growth (Bloomstrom and Sjöholm, 1999). This study set out to investigate empirically the impact that FDI has on firm innovation in Nigeria and South Africa. The study made use of the latest surveys of the World Bank Enterprise Survey dataset available for Nigeria and South Africa. Using IVLIML estimation techniques, the study established the following:

For Nigeria, it is noticeable that FDI has contributed positively to the innovative ability of their firms both through product and process innovation. This positive impact is realized through the transfer of superior knowledge, technology transfer and the injection of capital into host firms. It is thus appropriate for policy makers in these countries to create a congenial atmosphere for foreign investment to be attracted. This could be done by way of tax holidays, protection of investor interest by way of enforcement of the rule of law in businesses, construction of the needed infrastructure such as roads, electricity, telecommunication facilities and a stable economy devoid of conflicts and wars.

At the firm level too, good corporate governance principles could be institutionalized so as to attract inward FDI. It is obvious from the discussion that the guarantee of investor interest is a key determinant of inward FDI. The protection of investor interest could be guaranteed in two ways. One is the effective functioning of rule of law in the country while the other way is the establishment of effective internal control mechanisms by the firm which is championed by the adoption of good corporate governance principles. Furthermore, the availability of cheap labour attracts the flow of FDI into a firm.

We noted that FDI has no significant impact on product and process innovation in South Africa. This we believe could be partly attributable to the kind of foreign firms that acquire ownership in firms in South Africa. As indicated by Dunning (1995), some firms of less innovation can acquire ownership in other firms in order to learn their technology but not to transfer any new technology to the host firms. It is therefore possible that FDI flows to South Africa are not necessarily coming from higher technology-based countries than South Africa.

In situations where inward FDI is flowing from countries of comparable innovation or less innovation than South Africa, it will be possible to realize no impact of the FDI on host firm



innovation or in the worst scenario, where the foreign investors only have an aim of investing in the host firm in order to learn and sometimes poach some of their best brains back to the home firm, a negative impact can be seen. It is thus recommended that FDI attraction activities in South Africa should be geared towards countries that are more advanced in terms of innovation abilities than South Africa so as to enable the host firm benefit holistically in terms of transfer of innovation and superior managerial skills in addition to capital accumulation.

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### Appendix 3

Table 5.10: Post Estimation Tests on the Instrumental Variable Model

<b>First Stage Regression Test</b>				
<b>South Africa</b>				
<i>Product Innovation</i>	Critical Values			
<b>Stock and Yogo (2005)</b>	10%	15%	20%	30%
2SLS size of nominal 5% Wald test	16.38	8.96	6.66	5.53
LIML size of nominal 5% Wald test	16.38	8.96	6.66	5.53
<b>Cragg and Donald (1993)</b>	Minimum Eigen Value Statistics=11.3473			
Summary Statistics	R-sq=0.1441; Adj R-sq=0.1256; Partial R-sq=0.0392; Prob>F=0.0000			
<i>Process Innovation</i>	Critical Values			
<b>Stock and Yogo (2005)</b>	10%	15%	20%	30%
2SLS size of nominal 5% Wald test	16.38	8.96	6.66	5.53
LIML size of nominal 5% Wald test	16.38	8.96	6.66	5.53
<b>Cragg and Donald (1993)</b>	Minimum Eigen Value Statistics=11.3473			
Summary Statistics	R-sq=0.1441; Adj R-sq=0.1256; Partial R-sq=0.0392; Prob>F=0.0000			
<b>Nigeria</b>				
<i>Product Innovation</i>	Critical Values			
<b>Stock and Yogo (2005)</b>	10%	15%	20%	30%
2SLS size of nominal 5% Wald test	16.38	8.96	6.66	5.53
LIML size of nominal 5% Wald test	16.38	8.96	6.66	5.53
<b>Cragg and Donald (1993)</b>	Minimum Eigen Value Statistics=8.077			
Summary Statistics	R-sq=0.1441; Adj R-sq=0.1292; Partial R-sq=0.0250; Prob>F=0.0048			
<i>Process Innovation</i>	Critical Values			
<b>Stock and Yogo (2005)</b>	10%	15%	20%	30%
2SLS size of nominal 5% Wald test	16.38	8.96	6.66	5.53
LIML size of nominal 5% Wald test	16.38	8.96	6.66	5.53
<b>Cragg and Donald (1993)</b>	Minimum Eigen Value Statistics=8.077			
Summary Statistics	R-sq=0.1441; Adj R-sq=0.1292; Partial R-sq=0.0250; Prob>F=0.0048			



## CHAPTER SIX

### SUMMARY, CONCLUSION AND RECOMMENDATIONS

#### 6.1 INTRODUCTION

This study sought to examine the impact of FDI inflows on the economic activities of firms in SSA. It specifically investigated the links between FDI and firm value, FDI and CSR and FDI and firm innovation. A contextual study was also carried out to determine the trends and nature of FDI flows to Africa in general.

The first empirical essay which investigated the link between FDI and firm value addresses two critical issues usually ignored in testing the effect of FDI on firm value. One is the issue of correctly measuring firm value. Most studies use accounting performance measures thus masking the real economic dimensions of value (see: Tallman and Li, 1996; Hitt *et al.*, 1997; Lu and Beamish, 2001; Kuntluru *et al.*, 2008, Azzam *et al.*, 2013 etc.). This study departs from others by incorporating a market based performance measure which captures the economic dimensions of performance. Another issue in examining the link between FDI and firm value is that of possible endogeneity between FDI and firm value. It could be the case that high performing firms may be the ones attracting high FDI inflows. In this case such endogeneity must be controlled for. Unfortunately, few firm level studies control for this. In this study we have been able to control for any possible endogeneity with the use of system GMM thereby making our results more robust and consistent.

Our second empirical essay examined the impact of FDI on the CSR performance of host firms. This study essentially made two significant contributions to literature. Firstly, it is the first study to empirically examine the relationship between inflows of FDI and CSR (using a unique data set-the Public Investment Corporation (PIC) Governance Survey) in South Africa and secondly we control for contemporaneous cross-correlation effects from the firms in the panel set as well as endogeneity between FDI and CSR. The PIC governance survey contains rich contextual data on CSR in South Africa and was collected on the top 100 capitalized listed firms on the Johannesburg Stock Exchange(JSE).

Unlike previous studies (see: Goyal 2006; Frynas, 2008; Gonzale-Perez *et al.*, 2011; Margolis and Walsh, 2013 and Nyuur *et al.*, 2016), where CSR is measured by using only governance, or only legal or only environmental or only philanthropic issues or the combination of them in a limited manner, the PIC data comprehensively captured CSR under three broad areas: governance, social and environmental. Under governance, issues captured in the survey include: board composition, the performance of the board of directors, the qualification and performance of executive management, remuneration of board of directors, treatment of shareholders, internal control mechanisms, disclosures and reporting, corporate culture and sustainability reports. The issues documented by the survey on the social aspects include: the firm commitment to the UN Global Compact, human right issues, ownership and employment equity, health and safety, corporate responsibility and percentage of disabled employees. On environment, the survey had issues on: total greenhouse gas emission, mitigating factors on environmental pollution, environmental performance of its contractors and suppliers, adoption of environmental friendly technologies, promotion of environmental responsibility, etc.

Finally, we investigated empirically whether or not FDI leads to innovation in host firms. This study also made some great contributions to the literature in the following ways: unlike previous studies we create an innovation index using a multiple correspondent analysis (MCA) approach which captures innovation holistically. We use process and product innovation as proxies for innovation sourced from recently classified unique World Bank Enterprise Survey (WBES). With the exception of Bertschek (1995), Liu and Zou (2008), Stiebale and Reize (2010), Seker (2011) and Maaso *et al.*, (2012) who used product and process innovation and sale of new product as proxies for innovation, most of the previous studies on the subject matter have used R&D and patent protection as proxies for innovation. It is, however, argued that such proxies are inputs that require a time lag to generate innovation and hence do not represent innovation properly (Beveren *et al.*, 2010). This could account for some of the inconsistencies in earlier empirical studies.

To obtain consistent results, we use an instrumental variable limited information maximum likelihood (IVLIML) estimation technique which has the ability to control for endogeneity problem in our models. As noted above, the link between FDI and firm innovation could be a bi-directional one thus the problem of endogeneity emanating from simultaneity is eminent in such a study. Besides, the IVLIML has the power to produce efficient results when there are weak instruments

and heteroscedasticity problems in the model. Most previous studies have failed to control for endogeneity and this could account for some of the inconsistencies in their findings.

## **6.2 SUMMARY OF THE FINDINGS**

The main finding in respect of the link between FDI and firm value is that FDI has a positive significant impact on firm value in all the three countries (South Africa, Nigeria and Ghana) as revealed by the study. This positive relationship between FDI and firm value in the selected countries can be attributed to; technological transfer, managerial transfer, innovation transfer and skills transfer in favour of the host firms through inflows of FDI.

On the empirical relationship between FDI and CSR in South Africa, FDI is found to have a strong positive impact on firm CSR performance. The positive link established between FDI and CSR in this study can be explained by the superior knowledge transfer and capital base link theories. When CSR is decomposed further into its major components, FDI positively impacts on social and environmental components but has no impact on governance components. Besides, most of the listed firms are found to be doing well in the governance and social components of the CSR. On the contrary, the majority of the listed firms are performing below average in their environmental commitments. This possibly could be attributed to the fact that listed firms are expected to abide by the King Corporate Governance Codes to remain listed thus forcing such firms to do better on the governance and the social components while neglecting their environmental responsibilities since that is purely voluntary.

The third empirical issue we examined is the impact FDI has on firm innovation. The study found that while FDI positively influences firm innovation in Nigeria, the study found no evidence of any impact of FDI on firm innovation in South Africa. This positive impact is realized through the transfer of superior knowledge, technology transfer and the injection of capital into host firms. On the part of South Africa where no impact is found, we believe could be partly attributable to the kind of foreign firms that acquire ownership in firms in South Africa. As indicated by Dunning (1995) some firms of lesser innovation can acquire ownership in other firms in order to learn their technology but not to transfer any new technology to the host firms. It is therefore possible that FDI

flows to South Africa are not necessarily coming from higher technology-based countries than South Africa.

On the contextual studies, we noted from our study that FDI flow to Africa has improved in recent times but its share in the developing world's FDI is still very low. The flow of FDI into the region is also heavily determined by the world commodities market. The sector that receives the larger portion of FDI in the region has shifted from the primary sector to the services sector in this era. While a few countries are seen receiving a number of mergers and acquisition as forms of FDI, African FDI inflows are dominated by greenfield flows.

### **6.3 CONCLUSION**

The combined evidence from the separate but related papers reveals quite strongly that hosting of FDI is not only beneficial to nations at the macro level, but it is vital also at the micro level in SSA. It enhances firm value, firm CSR performance and firm innovation.

### **6.4 RECOMMENDATIONS**

The thesis made some policy recommendations that would enable countries in SSA to not only attract FDI but also be able to accrue all the associated benefits that come with FDI flows.

Governments should reform regulatory framework in the region. This will include the streamlining procedures for business visas and entry of foreign workers, enhancing foreign investor legal protection by way of developing bilateral investment treaties. Reforms are also seriously needed in the land administration system of the region to allow foreign businesses to be able to acquire and develop land easily and quickly for their business. This is crucial as the current systems of land administration in most SSA countries are beset with challenges ranging from double sales, undue delays in processing of title documents, indeterminate boundaries and lack of master plans which all culminate in frequent land disputes in the region.

For African countries to be in a better state to attract FDI there is the need also for the reconstruction and modernization of key infrastructure, including electricity, water, transport networks and telecommunication in the region. This could be done by way of public private partnership since most countries in the region lack the needed capital to develop their infrastructure. The financial

market is also key in the smooth attraction of FDI, hence policies should be put in place to develop the financial market in the region. As noted from the study, most FDI flows to the region are greenfield with a few cases of mergers and acquisitions. It is thus advocated that privatisation of most businesses in the region will give way not only to more mergers and acquisition, but it will help reduce the high level of governmental controls in entities, which can also reduce corruption and bureaucracies in the systems.

Administration procedures is said to be a serious hindrance to FDI inflows especially in developing countries (Emery *et al.*, 2000) of which SSA is not an exception. Efficient administrative procedures and rules on ownership should be fashioned by policy makers. This can be done by putting in mechanisms to shorten the duration needed to get tax registration, company formation, expatriate work permits, access to land, approval of tax incentives and connection to utility services for businesses, especially foreign ones. Attractive tax incentives and tax holidays must be put in place to woo foreign investors into the region. Tax incentives can also be used to direct businesses as to where to invest and also to encourage investing in R&D and training of employees. Apart from these, restrictions on the repatriation of profits and local content requirements could be relaxed to some extent so as to give some degree of control to foreign investors on their investment.

At the firm level too, good corporate governance principles could be institutionalised so as to attract inward FDI. It is obvious from the discussion that the guarantee of investor interest is a key determinant of inward FDI. The protection of investor interest could be guaranteed in two ways. One is the effective functioning of rule of law in the country while the other way is the establishment of effective internal control mechanisms by the firm which is championed by the adoption of good corporate governance principles. Moreover, cost of labour, which also influences the flow of FDI into a firm can be checked by the existence of proper internal controls. Where proper controls are put in place, efficiency of operations is guaranteed with no idleness, hence cost of labour can be low.

Besides, as established by prior studies, research and development is critical to innovation even in the presence of FDI in host firms (see: De la Potterie and Lichtenberg, 2001; Kinoshita, 2000 and Garcia *et al.*, 2005), thus we recommend that firms should institute vibrant research and development to enable FDI flow to translate fully into innovativeness in host firms. It is also noted that both

theoretical developments (Cohen and Levinthal, 1989; Blomstrom *et al.*, 2000) and empirical evidence (Borensztein *et al.*, 1998) demonstrate that the development of local capabilities is vital in benefiting from FDI. Thus, formal training for staff on the job as indicated has a lot of positive impact on innovation, especially in South Africa, Firms should institutionalise formal training for their staff periodically so as to unearth their staff's innovative skills. Firms should put in place regular training and retraining policies for all their staff. This will make staff more efficient, technology friendly and ready to adapt to changes in businesses and procedures which enhance firm value, innovation, CSR performance and other expected firm benefits. Devoting sizeable investment into the R&D will allow the firm to carry out research to enable it to adopt the best processes and procedures and the most efficient ways of performing a task. It can also be done by way of reducing import tax on machinery and equipment for businesses.

We noted that FDI has no significant impact on product and process innovation in South Africa. This we believe could be partly attributable to the kind of foreign firms that acquire ownership in firms in South Africa. As indicated by Dunning (1995) some firms of lesser innovation can acquire ownership in other firms in order to learn their technology but not to transfer any new technology to the host firms. It is therefore possible that FDI flows to South Africa are not necessarily coming from higher technology-based countries than South Africa.

In situations where inward FDI is flowing from countries of comparable innovation or lesser innovation than South Africa, it will be possible to realise no impact of FDI on host firm innovation or in the worst-case scenario, where the foreign investors only have an aim of investing in the host firm in order to learn and sometimes poach some of their best brains back to the home firm, a negative impact can be seen. It is thus recommended that FDI attraction activities in South Africa should be geared towards countries that are more advanced than South Africa so as to enable the host firm benefit holistically in terms of transfer of innovation and superior managerial skills in addition to capital accumulation.

## **6.5 LIMITATIONS AND SUGGESTIONS FOR FUTURE RESEARCH**

FDI and firm economic activities have a variety of relationships that could be determined empirically. With the constraints of the data available, however, this study is not able to investigate all the relationships between FDI and firm economic activities. This study is restricted to firm value, CSR performance and firm innovation. In addition, this study relies solely on enterprise survey data,

a public investment corporation governance matrix, and McGregor's data of listed firms only. For the enterprise survey not all SSA countries have data available. Moreover, with the enterprise survey, not all the targeted countries have data up to at least two observations. Hence it is only the cross-sectional studies that were carried out, ignoring any time varying trends, that could be studied. With the listed firm data, it is only premier firms that are represented, since most, small firms in Africa are unable to list on the stock market, due to the stringent requirements of stock markets. Similarly, the public investment corporation governance matrix only covers some listed firms in South Africa. Furthermore, not all SSA countries are used in the study. The study used only selected countries within SSA. Notwithstanding the limitations observed above, the findings from the study are not in any way invalidated.

For future research, we recommend that alternative data such as primary data could be considered so to be able to include more countries, more firms and possibly more years. For the limitation of the data, essay one could not include many countries in our study especially those that have not got vibrant stock markets. Future study should not only consider adding more countries to study this link, but they should investigate empirically the channels through which FDI impacts positively on firm value in SSA as well as examining the phenomena, sector by sector to see if the results will remain the same. On the second essay, we were able to investigate the FDI-CSR link among South African firms alone for a shorter period of time (only three years). For future studies, it will be nice to extend this to other African countries too and add more firms and periods to observe the situation. CSR among FDI firms in South Africa may be doing better because, CSR adoption is already high and hence MNEs are on the alert to succeed in their operations hence they are compelled by the already existing environment to carry out more CSR activities than non-FDI firms. It will therefore be interesting to study this link in other African countries where CSR is not deeply rooted to see if the results are same. On our third essay, we used only cross sectional data and hence we have not been able to observe time effect on our results. The impact of FDI on host firms sometimes does not manifest immediately but takes a long time to be seen in host firms. It is very imperative for future research to consider using panel data to examine the time effect on the findings and also to investigate why the negative link realized in South African firms.

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