

Intraregional and Interregional FDI in Africa: Market-driven, Natural resources or Efficiency-seeking?

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Abstract

The concentration of FDI in few large and/or resource-rich economies in Africa has received considerable attention in the recent literature and has called into question the development impact of these investment flows. There is however, little work that has considered the drivers of international investment flows, across the different types of economies. This paper provides an empirical analysis of the drivers of intraregional FDI, including markets, natural resources and relative labour costs. It then considers how well they explain investment flows in both resource and non-resource rich countries and whether they can explain the pattern of investments from the OECD and emerging market economies. We use recent bilateral FDI stock data (UNCTAD, 2014) on 46 African countries over the period 2001-2012. Using the Hausman-Taylor IV estimation technique, the results suggest significant differences between the drivers of intraregional FDI and investments from the OECD and emerging market economies. Large markets and lower labour costs are significant in attracting intra-African investments to resource-rich African economies, while investments from the OECD and emerging market economies are driven by large markets to resource rich countries and by the presence of cheap labour to non-resource rich African countries. The availability of high-skilled labour is important in attracting investments from emerging markets to resource rich countries, unlike OECD investments that are explained by lower labour costs. The results suggest that natural resources attract FDI but undermine investments in the non-resource sector.

Keywords: Foreign investments, markets, natural resources, labour costs

JEL classification: O11, O19

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1.0 Introduction

The rise of foreign direct investment (FDI) inflows to Africa in recent years has received considerable attention in the empirical literature. With the emergence of China as a major investment partner in the continent, there is a growing debate about the factors that attract FDI to host African countries. Because of underdeveloped domestic financial markets, particularly in sub-Saharan Africa (SSA), most countries have not been able to mobilize sufficient internal resources to meet domestic investment requirements. FDI is therefore considered as an important vehicle for gaining access to foreign resources in order to bridge the financing gap and complement domestic investments, thereby promoting growth, job creation and alleviating poverty in host countries (UNCTAD, 2013a). In light of these benefits, the attraction of FDI has become an integral part of development policies of most African countries. Several governments in the region have adopted various initiatives to encourage FDI, which include providing generous incentives to foreign firms (UNCTAD, 2014a).

The eclectic paradigm of international production (Dunning, 1993) is widely recognized in the FDI literature as explaining most of the factors driving FDI. The theory argues that FDI arises from three determining factors; ownership (O) specific advantages, location (L) specific advantages and internalization (I) incentive advantages. Drawing from this theory, the literature on FDI has considered four types of multinational enterprises' (MNEs') activities in destination countries- market-seeking, natural resource-seeking, efficiency-seeking and strategic asset seeking (Dunning, 1998; Dunning, 2000; Cleeve, 2008). While most African countries have experienced a rise in FDI inflows in recent years, an important question that has gained attention in the academic literature and dominated policy discussions relates to whether these investments to the continent are mostly attracted by large markets and resource-rich countries at the detriment of small and resource-poor countries. There is the recognition that resource-seeking FDI in the extractive industries will provide little scope for vertical linkages in host countries (Narula and Dunning, 2010).²

² Research studies have indicated that vertical linkages are important mechanisms for transmission of knowledge and technology to domestic agents (Jindra et al, 2009; Farole and Winkler, 2014).

While the literature on the role of markets, natural resources and policy in attracting FDI in Africa is growing (e.g. Asiedu, 2002, 2006, 2013; Asiedu and Lien, 2011; Morisset, 2000; Naude and Krugell, 2007; and Anyanwu, 2012), there is however limited empirical evidence on the factors that determine intraregional investments. A related issue is the question of whether investors from the different types of economies are motivated by different economic considerations in destination countries.

This paper offers the following contribution to the empirical literature on FDI in African economies. We determine whether intraregional and interregional investments are driven by market-seeking, natural resources and efficiency-seeking objectives and explore the question of whether investors from intra-African countries behave differently from interregional investors as they respond to these location factors.³ We further allow for heterogeneity in host countries by determining the drivers of FDI to resource and non-resource rich African countries separately. As Page (2011) argues, there are differences between resource-rich and non-resource rich countries in terms of economic structure. This suggests that the motivations for FDI may vary across host countries depending on the structural characteristics of the economy.⁴ To our knowledge, these issues have not been explored in the literature on FDI in African economies. This paper considers these questions given that the region's share of global FDI inflows remains relatively low compared to other regions in the developing world, in spite of its diversity in resource endowments. Africa is host to natural resources such as hydrocarbons, minerals and timber, and particularly rich in some of the world's precious minerals notably platinum, manganese and gold in South Africa; and diamonds in the Democratic Republic of Congo, South Africa and Botswana (Alden and Alves, 2009). Yet, the region has attracted only a limited share of the world's investment inflows, with an average of 3 percent over the period 2001-2013 compared to Asia (23 percent) and Latin America and the Caribbean (12 percent).⁵

³ Intraregional FDI refers to intra-African investments; interregional FDI describes investments from countries of the Organization for Economic Cooperation and Development (OECD) and emerging markets (excluding emerging African countries).

⁴ The indicators of economic structure include the share of manufacturing in GDP, share of manufacturing in total value added and share of manufacturing in total exports. Non-resource rich countries tend to have performed better than resource-rich countries in these indicators (Page, 2011).

⁵ Own calculations based on UNTAD statistics.

In this respect, therefore, this paper determines whether market size, natural resource endowments and efficiency-seeking are factors influencing intraregional investments. The issue is particularly important given that intraregional FDI are mostly attracted into manufacturing and services sectors unlike the extractive industry. UNCTAD (2014b:40) argues that “*compared with other foreign investment, intra-African projects are concentrated in manufacturing and services; the extractive industries play a very marginal role*”. There is evidence on deindustrialization of the continent over the past two decades, as shown by the decline in the share of manufacturing in total value added from 13 percent in 1990 to 10 percent in 2011 (UNCTAD, 2014a). Given the evidence, the issue of determining the factors explaining intraregional FDI, which has the greatest concentration on manufacturing and services sectors, is critical for growth and long-term development of host countries. Intraregional investments also tend to be concentrated in large and close proximity markets to source countries. While this may reflect sensitivity of these investments to market size and efficiency-seeking objective, our understanding on what drives these investments to resource and non-resource rich host African countries remains limited.

Despite the extensive literature on FDI determinants, there is little consideration to the issue of whether there are differences between intraregional investors and counterparts from the OECD and emerging markets with respect to the factors driving these investors to host African countries. This study fills the gap in the literature. Countries from the OECD differ from emerging market economies in terms of governance, institutional environments and level of economic development. It is argued that companies from emerging market economies especially China and India that are active in the extractive industries such as oil are mostly state-owned (Brown, 2012) compared to investors from African and OECD economies that are largely privately-owned. Given the heterogeneity among the different source economies, it is useful to consider whether intra-African investors behave differently from investors from the OECD and emerging markets with respect to the motivations for FDI. A recent study investigates the motivations behind FDI from traditional and emerging economies to developed and developing host countries (Andre`s et al, 2012). Aleksynska and Havrylchyk (2013) find that investors from the south behave different from Northern investors in terms of market size and income level in host countries. Asiedu (2002) finds that SSA countries behave differently from non-SSA destination countries as FDI to the former is not driven by return on investment and better infrastructure unlike their counterparts in other developing countries. Yet it remains an empirical issue whether intraregional investors behave

differently from their counterparts from the OECD and emerging market economies with respect to market size and the presence of natural resources and lower labour costs in host countries.

Building on this insight, this paper investigates whether intraregional and interregional investments are attracted by market-seeking, natural resources and efficiency-seeking considerations. We also attest to the differences between intraregional and interregional investors in terms of these factors. Analyzing these issues would contribute to deeper understanding of what drives FDI to African economies from the different source economies and provide an important perspective to the current debate over location factors in the region. The evidence is useful to facilitate engagements with different investors in African countries. We use recent bilateral FDI stock data (UNCTAD, 2014) on 46 African countries and the Hausman-Taylor IV estimation to investigate the questions. Results suggest significant differences between the drivers of intraregional FDI and investments from the OECD and emerging market economies.

The rest of the paper is organized as follows. Section 2 provides an overview of the trends in FDI, with section 3 reviewing the literature. The methods and data are described in section 4. Section 5 discusses the results and section 6 concludes the paper.

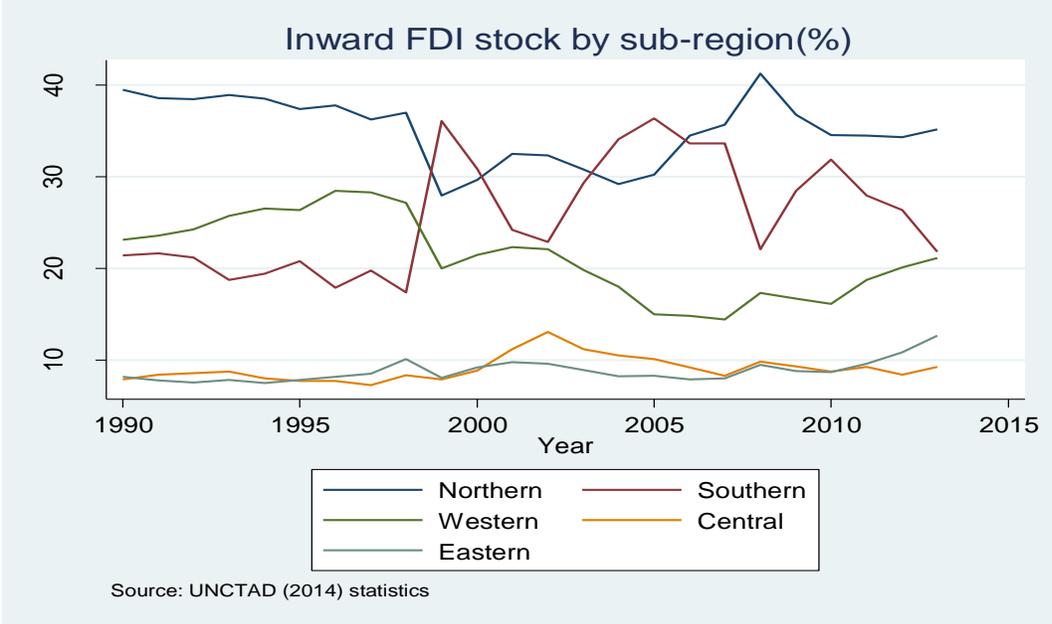
2. FDI in Africa

As noted above, there are differences between resource and non-resource rich African countries in terms of economic structures. This is an indication that foreign investments from the different source economies may be driven by different location factors. In light of these differences, we briefly analyze the trends in FDI positions (stocks) across countries and regions to assess the drivers of these investments in the continent.

Policy efforts to promote FDI in Africa have largely focused on providing generous incentives instead of creating the enabling domestic environment to attract these investment (UNCTAD, 2013a). This has partly contributed to considerably low share of Africa's FDI in global FDI compared to other regions in the developing world. During the period 2001-2013, the continent's share in global FDI stock averaged 3 percent in 2001-2013 compared to Asia (23 percent) and Latin America and the Caribbean (12 percent). Foreign investments to the continent have been unevenly distributed across countries and the different sub-regions. Figure 1 displays the geographical distribution of FDI stocks across sub-regions. Despite recent political upheavals,

Northern Africa remain a leading host of foreign investments in the continent. The share of the North’s FDI stock averaged 33.99 percent during the period 2001-2013, followed by Southern Africa (28.67 percent), West Africa (18.20 percent), Central Africa (9.86 percent) and East Africa (9.28 percent). Recent privatization reforms and policies designed to improve efficiency have partly contributed to promoting FDI to North Africa, in addition to investments directed to oil exploration in Egypt, Libya, Algeria and Morocco (Loots and Kabundi, 2012). Increased FDI to East Africa in recent years have been driven by resource-seeking investments, in oil and gas exploration in Tanzania, Kenya, Uganda and Mozambique (UNCTAD, 2013b). The West African region continued to attract resource-seeking investments during the period particularly in the oil sector in Ghana. The Southern Region however experienced a downturn in the share of FDI stock, which is partly explained by disinvestments in Angola induced by unfavorable government policy designed to promote local partnerships (UNCTAD, 2014b).

Figure 1: Geographical Distribution of FDI stock across sub-regions (share)



Large and resource rich economies tend to have attracted much of the foreign investments to the continent (UNCTAD, 2013a). During the period 2001-2012, South Africa attracted 63 percent of all FDI flows to sub-Saharan Africa from the EU and 17 percent of US inflows, while Nigeria accounted for 37 percent of US inflows (Cobley et al, 2014). South Africa is the second largest economy in Africa and particularly endowed in some of the world’s most precious minerals. Nigeria and Ghana are large resource-rich countries in West Africa, which collectively represented

71.65 percent of the stock of FDI in the sub-region over the period 2001-2012. The Egyptian economy is the largest in North Africa and remain the leading recipient of FDI to the region. Inward FDI to Egypt are driven by its population size and the presence of cheap labour costs (UNCTAD, 2014).

Countries of the OECD remain the largest investors in African economies. The stock of FDI from three leading investing economies in 2012 (USA, United Kingdom and France) represented 64 percent of total FDI stock to the continent (AfDB et al, 2014). Availability of natural resources is an important factor driving the OECD to the continent. Investors from the USA have directed a significant proportion of investments into mining and extractive industries, which represented 58 percent in 2011 (Cobley et al, 2014). The USA is a major source of FDI in some resource rich countries. The share of US investments in FDI stock averaged 46.23 percent in Algeria and 33.51 percent in Equatorial Guinea during the period 2001-2012. Although not a resource-rich country, Egypt was a key destination of FDI from the USA to the North African region. The share of these investments in the country's FDI stock averaged 16.94 percent over the period 2007-2012. Collectively the United States, Italy, France and Norway contributed a share of 59.82 percent of FDI stock in Algeria during the period 2001-2012. South Africa and Nigeria were the top recipients of foreign investments from the United Kingdom. The share of FDI stock of the UK attracted by Nigeria averaged 14.54 percent during the period 2001-2012. France contributed the largest share of FDI stock in Gabon and the Republic of Congo, which amounted to 64.5 percent of FDI stock in Gabon during the period 2008-2012 and 23.65 percent in the Republic of Congo over the period 2007-2012.

Availability of natural resources remain a key attraction for foreign investors from two emerging economies (China & India) (UNCTAD, 2011). Among the top recipients of Chinese investments in Africa economies are natural resource-rich countries such as South Africa, Nigeria, Zambia, Sudan, Algeria, Niger and Democratic Republic of Congo (Brown, 2012). China has undertaken significant investments in oil or gas production or exploration in countries such as Gabon, Chad, Democratic republic of Congo, Equatorial Guinea, Nigeria and Tanzania (Brown, 2012). India has invested in the oil industry in Sudan.

Although natural resource-driven constitutes a greater share of investments from the OECD and emerging markets, there are suggestions of some efficiency seeking investments to the region.

Efficiency-seeking has been facilitated by the adoption of preferential schemes granted under the United States' African Growth and Opportunity Act (AGOA), the European Union's Everything But Arms (EBA) and China's zero-tariff measures for African least developed countries (UNCTAD, 2013c). Mauritius is a major recipient of efficiency-seeking FDI, which serves as a platform for facilitating interregional FDI to other countries in sub-Saharan Africa. The country seeks to promote these investments through the signing of bilateral treaties with other countries such as Double Taxation Avoidance Agreements (DTAA) and Investment Promotion and Protection Agreements (IPPA) (OECD, 2014). A number of non-resource rich African countries (Mauritius, Lesotho, Swaziland, Madagascar and Kenya) have attracted investments in the clothing and textile industries from garment firms in Asia in order to gain access to the EU markets guaranteed under the multifiber (MFA) agreement and US market under the AGOA preferential scheme (Kaplinsky and Morris, 2009). The investments are less skill-intensive which suggests that they could be driven by lower labour costs in host countries. Recent investments by Chinese companies in the automotive sector in Kenya have been driven by efficiency –seeking considerations (Barton and de Bellefroid, 2015). For example, the Foton manufacturing company was setup to assemble vehicles in Kenya in order to avoid payment of 25 percent import duty on cars (Juma, 2011). Foreign investments to Egypt are partly driven by lower labour costs (UNCTAD, 2014b). Similarly, the garment industry in Madagascar has attracted investments from foreign firms in Mauritius, partly to exploit lower labour costs (Fukunishi and Ramiarison, 2014).

Moving to intraregional FDI, a striking feature of these investments is that they are concentrated in the manufacturing and services sectors rather than the extractive industries (UNCTAD, 2014b). This suggests that intraregional FDI are more likely to be driven by market-seeking and efficiency-seeking intents than natural resource-led. This is reflected in the pattern of these investments, which are attracted by large markets and close proximity markets or neighbouring countries. During the period 2003-2012, intraregional investments were largely driven by transnational corporations (TNCs) from South Africa, Mauritius, Egypt, Nigeria and Kenya (AfDB et al, 2014).

Market-seeking is primarily the key force driving South Africa's outward FDI to other African economies (TNS and DNA, 2012).⁶ Much of the investments from South Africa are largely concentrated in member States of South African Development Community (SADC). Recently,

⁶ Based on survey analysis of 30 large South African firms conducted by TNS Research Surveys and DNA Economics (2012).

these investments have been extended beyond the borders of the SADC region and targeted markets in West Africa. Examples include the Retail Groups such as Shoprite and Woolworths which have expanded to large markets in West Africa such as Nigeria and Ghana (Disenyano & Sogoni, 2014). The South African food and beverage company (SABMiller) has acquired a significant stake in the food industry in Nigeria (Disenyano & Sogoni, 2014). A plausible explanation for concentration of intraregional investments in proximate and large markets is to exploit economies of scale. Intraregional investors from other sources include the Dangote Group from Nigeria, engaged in building materials and financial services especially in the West African sub-region. Companies such as the Comcraft and Sameer Groups from Kenya operate in the service sectors; Sameer Groups is also active in the manufacturing industry (UNCTAD, 2014).

Like investments from the OECD and emerging markets, the distribution of intraregional FDI is not even across African countries. They tend to be concentrated in large markets and resource rich countries. It is clear from table 1 that the two resource rich and the largest economies in Africa (South Africa & Nigeria) were the top hosts of intraregional FDI in 2012.⁷

Table 1: Intraregional FDI stock in Africa (US\$ billion)-Various years

Year/Country	2008	2010	2011	2012
South Africa				163.5
Nigeria				111.4
Morocco			44.5	
Mozambique				13.3
Zambia				12.4
Tanzania			9.2	
Uganda				7.7
Ghana			7.1	
Namibia				5.8
Madagascar			4.9	
Botswana				2.8
Kenya	2.8			
Mali				2.3
Lesotho		1.6		
Burkina Faso				1.2
Senegal				1.2
Malawi		1.2		
Benin				1.0
Togo			0.9	
Rwanda			0.8	
Guinea-Bissau			0.1	

Source: UNCTAD (2014). The table shows intraregional FDI positions of countries for the reported period

Investors from South Africa are the largest contributors of intraregional FDI to African economies. If we consider the geographical distribution in table 2, it is clear that these investments serve as an important source of foreign capital for SADC member countries. Swaziland hosted the

⁷ Intraregional investments to Mauritius were not reported since the country serves as an investment platform for interregional investors (UNCTAD, 2014).

largest share of FDI stocks from South African in 2012 (49.06 percent) and Zimbabwe (34.83 percent). In the case of Mauritius, a close look at the country's distribution of FDI in table 2 reveals that a greater of share these investments in 2012 were held in close proximity markets (Seychelles; 32.57 percent) and large markets (Nigeria; 25.04 percent).

Table 2: FDI stock from South Africa to selected African countries

Year/Country	2009		2010		2011		2012	
	FDI stock (\$ M)	Share (%)						
Botswana	185	6.86	268	9.12	438	12.49	408	11.53
Ghana	725	9.60	1243	12.33	1340	10.05	...	...
Kenya	194	9.22	222	9.73	241	9.21	309	10.74
Malawi	159	15.46	181	15.74	...	...	...	...
Mozambique	1280	32.42	1309	27.46	1861	22.30	2605	18.62
Nigeria	0	0	667	1.11	972	1.40	1944	2.55
Swaziland	238	29.42	406	41.52	461	50.53	470	49.06
Tanzania	2330	28.89	1891	21.58	2178	23.47	...	...
Uganda	332	6.60	349	6.26	364	5.63	389	5.07
Zimbabwe	372	22.57	856	47.18	1199	54.46	906	34.83

Source: UNCTAD (2014) Bilateral & Stats databases. ... represents missing data.

Table 3: FDI stock from Mauritius to selected African countries

Year/Country	2009		2010		2011		2012	
	FDI stock (\$ M)	Share (%)						
Botswana	75	2.78	35	1.19	93	2.65	102	2.88
Madagascar	252	6.38	257	5.86	419	8.53	...	...
Mozambique	288	7.30	974	20.44	597	7.15	810	5.79
Nigeria	0	0.00	1773	2.94	2333	3.37	19125	25.04
Seychelles	488	32.65	575	33.71	560	29.27	677	32.57
Tanzania	379	4.70	434	4.95	650	7.01	...	...
Uganda	295	5.86	388	6.96	493	7.62	499	6.50
South Africa	460	0.33	483	0.27	1400	0.88	1101	0.67

Source: UNCTAD (2014) Bilateral & Stats databases. ... represents missing data.

Overall, the trends reveal that the top recipients of FDI from the different source economies are large and resource-rich African countries. Efficiency-seeking however appears to be a key motivation behind FDI to non-resource rich countries.

3. Literature review: theory and evidence

Over the past few decades, researchers have devoted considerable attention to exploring the drivers of FDI in the wake of the rapid growth in MNE activities due to increased globalization. Faeth (2009) has argued that the determinants of FDI are not explained by a single theory but a variety of theoretical models (9) attempt to explain FDI and the location decisions of MNEs. Given that our paper focuses on determining whether FDI to Africa is driven by market-seeking, natural resource endowments and efficiency-seeking objectives, our analysis will draw from the eclectic (OLI) paradigm (Dunning, 1993), knowledge-capital model (KCM) (Markusen, 1997; Carr et al, 2001) and recent literature on the FDI resource curse (Poelhekke and van der Ploeg, 2010). The eclectic or OLI paradigm is widely respected theory on FDI. This theory has argued that FDI is driven by three types of specific advantages that MNCs have-ownership (O), location (L) and internalization (I) advantages. Ownership specific advantages are derived from firms' possession of tangible and intangible resources which enhance the efficiency of resource usage (Dunning, 1988). Intangible assets include patents, technical knowledge, management expertise, reputation, etc. which ensure that foreign firms gain competitive advantage over their domestic counterparts in destination countries. The extent to which firms may gain ownership advantages depends on location advantages of the home country, which are influenced by factor endowments, institutions and government policies in the home country (Dai, 2010). The O endowments of the firms can be utilized in destination countries at minimal or zero transfer costs (Dunning, 1988; Dai, 2010); and these assets can also be acquired through shared governance and coordination of value adding activities across borders (Dunning and Lundan, 2008).

Location advantages are associated with the host country's possession of natural and created endowments and markets which promote value adding activities of MNEs (Dunning, 2000). MNEs are motivated to direct their activities to a host country or region if it offers location advantages such as gaining access to natural resources, restricted markets, low cost labour, favourable tax treatments (Faeth, 2009). Countries that offer greater location resources or advantages become more attractive destinations when firms decide to engage in FDI (Dunning, 2000; Dunning and Lundan, 2008). Location factors are seen as complementing the competitive or ownership advantages of MNEs as they seek to exploit these resources in destination countries. Internalization advantages are the result of MNEs activities that tend to overcome or exploit market failures in a foreign country (Dunning and Lundan, 2008). With ownership advantages and given location

factors, MNEs can be incentivized to internalize their operations instead of licensing or exporting in order to take advantage of imperfections in markets or government policy induced distortions in host markets and overcome associated disadvantages in allocating resources in these economies (Dai, 2010).

With increasingly competition in global environment, a key objective of firms that engage in FDI is to advance their competitive position, which drives the motives for market expansion or production efficiency (Luiz and Charalambous, 2009). While ownership and internalization factors are important, this paper focuses on the location factors which provides a framework for analyzing the forces driving FDI to African countries. Drawing from the OLI paradigm, the FDI literature has identified four types of incentives that encourage firms to engage in FDI- market-seeking, resource-seeking, efficiency-seeking and strategic-asset seeking (see Dunning, 1998;, 2000; Dunning and Lundan, 2008; Cleeve, 2008).

MNEs undertake market-seeking FDI to supply goods or services to domestic, adjacent or regional markets (Dunning and Lundan, 2008). The investments are intended to sustain a firm's presence in existing markets or exploit new markets (Dunning and Lundan, 2008; Cui et al, 2014), which could take the form of acquisition of domestic assets that would enhance the firm's competitiveness in the specific markets (Cui et al, 2014). While the size of domestic markets and expectations of growth of domestic and regional markets are key forces driving market-seeking FDI, other motivations behind market-seeking FDI include the need for MNEs to follow customers in destination countries, reorientation of production activities in line with domestic market requirements, minimizing production and transportation costs through export platform, and strengthening presence in leading markets served by competing firms (Dunning and Lundan, 2008). The market size reflects the degree of sophistication and breath of the markets in host economies (Sahoo, 2006). When the market size in host economies is relatively small, MNEs may prefer to serve the domestic markets through exports than FDI when the fixed costs associated with investing in these economies exceeds the potential savings in trade costs (Glass, 2008). Thus a larger domestic market creates greater opportunity for increased sales and profitability of multinational firms, which in turn raises the prospects for increased FDI in the domestic economy.

In the new trade theory, ownership and location advantages of the OLI theory are combined with technology and country characteristics which has offered an alternative approach to explaining

FDI and MNE activity (Faeth, 2009). These factors are embedded in the knowledge-capital model (NKC) of MNC activities (Markusen, 1997) which has integrated horizontal and vertical motivations for FDI. Horizontal or market-seeking FDI (Markusen, 1984) occurs when an MNE replicates production activities in multiple countries or close to customers to enhance market opportunities and avoid trade costs. Vertical FDI (Helpman, 1984) arises when MNEs geographically separate the different stages of production activities in order to take advantage of the relative factor-cost differences between the parent and host countries. MNEs undertake unskilled labour intensive activities in destination countries that are characterized by abundant unskilled labour (Faeth, 2009). The size of markets and skill endowments are important variables in the KCM that explain the type of MNE activities. The KCM model predicts that horizontal (market-seeking) activities are dominant when there are similarity between host and source countries in market size and relative skill endowments (Carr et al, 2001). Vertical FDI tends to dominate when there are differences in market size and relative skill endowments between countries (Lankhuizen, 2014).

The role of proximate or surrounding markets in attracting FDI to host countries is well documented (Head and Mayer, 2004; Blonigen, et al, 2007; Amiti and Javorick, 2008; Garretsen and Peeters, 2009; Blanco, 2012). Empirical studies on African economies have shown a significant positive effect of host market size on FDI (Morisset, 2000; Asiedu, 2006; Nude and Krugell, 2007; Anyanwu, 2012; Loots and Kabundi, 2012). The results of these studies are, however, susceptible to heterogeneity bias by using aggregate FDI from different source economies characterized by different institutional environments. A second source of heterogeneity bias could arise from polling resource and non-resource rich countries which are different in terms of economic structures. From the review, we hypothesize that:

H1: Foreign investments from the OECD, emerging markets and intraregional economies are attracted by large markets in resource and non-resource rich African economies.

Resource-seeking FDI activities are conducted to gain access to natural resources, physical resources or human resources such as cheap unskilled or semi-skilled labour (Dunning, 2000; Dunning and Lundan, 2008; Faeth, 2009). With favourable global prices of commodities, MNEs have invested in developing countries to take advantage of resource availability, which has altered the distribution of FDI across countries or regions within countries (Dunning, 1998; Faeth, 2009;

Gonchar and Marek, 2013). Host countries have attracted resource-seeking FDI in extractive industries such as oil, industrial minerals, metals and agricultural products. Production of these resources require complementary capabilities and markets that are offered by MNEs (Dunning and Lundan, 2008).

The empirical literature on the effect of natural resources on FDI shows mixed results. Using the share of fuel and minerals in merchandise exports and a panel of 22 countries in sub-Saharan Africa, Asiedu (2006) shows that natural resources is a significant factor that attracts FDI to host countries. Loots and Kabundi (2012) reached the same conclusion using a dummy variable for oil exporters and panel of 46 countries over the period 2000-2007. By employing a dummy variable for net oil importers and a sample of 53 African countries over the period 1996-2008, Anyanwu (2012) shows strong positive effect of natural resources on FDI to African countries.

Recent strand of empirical literature has shown an adverse effect of natural resources on aggregate FDI. Proponents of the FDI-natural resource curse theory argue that natural resources attract FDI but crowd out non-resources FDI; and aggregate FDI in resource -rich countries would be lower when the effect of the decrease in non-resource FDI offset the increase in resource FDI (Poelhekke and van der Ploeg, 2010). The study uses sector level data on outward FDI from the Netherlands and finds that subsoil assets boost resource FDI but exerts a negative effect on non-resource FDI. Evidence on the adverse effect of natural resources on FDI flows was documented in an early study on the Gulf Cooperation Council (GCC) countries (Mina, 2007). The study is based on a panel of the six GCC countries during 1980-2002 and finds that oil potential (measured by oil reserves) and oil utilization (oil production) exerts a negative effect on FDI flows to the region. More recently, evidence on African economies have shown an adverse effect of natural resources on FDI to the region (Asiedu and Lien, 2011; Asiedu, 2013; Nwaogu and Ryan, 2014). These studies have however not taken into account potential differences in resource seeking motives of MNEs from the different source economies. Investors from the OECD, emerging markets and intra-African countries are governed by different institutional environments. There appears to be some differences between investors from the different economies in terms of the portfolio of investments directed to African economies. Foreign investments from the OECD and emerging markets are skewed in favour of mining and extractive industries, unlike intraregional FDI which is largely concentrated in manufacturing and services sectors.

The adverse effect of natural resources and FDI is explained by a number of factors. Natural resource boom leads to currency appreciation and consequent loss of export competitiveness, which induces crowding out of investment in the non-natural resource tradable sectors (Asiedu and Lien, 2011). Volatility in global commodity prices causes macroeconomic uncertainty which has a dampening effect on foreign investments in the country. While natural resource exploration generates large capital outlay at the onset of extraction, resource revenues generated in subsequent operations are minimal which may not provide sufficient resources to promote investments in the non-resource sectors. Accordingly, most countries in SSA that have attracted significant foreign investment in the extractive industries have not done so in non-resource sectors of manufacturing and services. From the review, we hypothesize that:

H2: the availability of natural resources in host countries has an adverse effect on FDI from OECD and emerging market economies but intraregional FDI are not natural resources-led.

Efficiency-seeking investments are undertaken when MNEs integrate their operations in multiple foreign markets. Such investments are designed to exploit differences between countries such as in factor endowments, demand patterns, cultures, institutional arrangements, economic policies and economic market structures (Dunning & Lundan, 2008). The activities of these MNEs are often concentrated in specific locations in order to exploit economies of scale across borders (Dunning & Narula, 2004). Strategic asset seeking FDI are designed to advance the ownership specific advantages of the firms and sustain or advance global competitiveness (Dunning, 2000; Dunning & Lundan, 2008). The time dimension is important in describing these types of investments. Resource and market-seeking investments are typically initial investments whereas efficiency-seeking and strategic-asset-seeking motives are typically related to sequential investments (Dunning, 1998; Faeth, 2009).

Due to paucity of data on unit labour costs, recent research has considered the difference in real GDP per capita between countries as a proxy for relative labour costs (Busse et al, 2010; Andre`s et al, 2012) or differences in factor endowments (Abdellah et al, 2012). The variable is used to assess vertical motivations for FDI, which explains investments from relatively rich countries to poorer destination countries (Andre`s et al, 2012). Bilateral FDI flows would also increase when the host-source country have similarly high income and the investments are driven by similar demand structures in the source and destination countries (Andre`s et al, 2012). There is limited

work on efficiency-seeking investments in African economies. Recent studies find that lower labour costs promotes FDI in developing countries (Busse et al, 2010) and the Middle East and North Africa (MENA) countries (Abdellah et al, 2012). While efficiency-seeking was not the focus of these papers, there is lack of evidence on whether intra-African investors behave differently from investors from the OECD and emerging markets with respect to this intent. Thus hypothesize that:

H3: the presence of lower labour costs in host countries would attract FDI from OECD, emerging markets and intraregional economies.

H4: intraregional investors behave differently from investors from the OECD and emerging markets with respect to market-seeking, natural resources and efficiency-seeking intents.

Overall, the review reveals that using a single theoretical model would not adequately explain the role of markets, natural resources and efficiency seeking objectives in driving foreign investments from the different regions to African economies. It is useful to consider an integrated framework that captures the location advantages of the OLI paradigm, the predictions of the knowledge-capital model and FDI resource-curse theory.

4. Methods and data

Because the underlying relationships are not all explained by one theoretical framework, we consider an augmented gravity model that draws from the theoretical predictions of the eclectic theory (Dunning, 1993, 1998, 2000), the knowledge-capital model of MNEs (Markusen, 1997; Carr et al, 2001) and the FDI-resource curse literature (Poelhekke and Van der Ploeg, 2010; Asiedu, 2013). It is clear from the literature review that Dunning's eclectic theory provides a framework to analyze most of the motivations behind MNE's engagement in FDI. The knowledge-capital model (KCM) assesses whether MNE activities are driven by horizontal (market-seeking) or vertical motivations whereas the FDI resource –curse literature predicts an adverse effect of natural resources on FDI in host countries.

The gravity model was first used in the international trade literature by Tinbergen (1962) and has become the workhorse of empirical research in analyzing bilateral relationships such as FDI, trade, imports and exports (Shepherd, 2013). The basic gravity model is akin to Newton's Law of gravity and relates bilateral FDI directly to economic mass (GDP) of the host and source countries and

inversely to the trade costs between the two countries. In its log-linear form, the basic gravity model is specified as:

$$\log FDI_{ijt} = \beta_0 + \beta_1 \log GDP_{jt} + \beta_2 \log GDP_{it} + \beta_3 \log \tau_{ij} + \varepsilon_{ijt} \quad (1)$$

Where FDI_{ijt} is bilateral FDI stock from country i to country j at time t; GDP_{jt} and GDP_{it} denote nominal GDP of host and source countries in time t respectively, τ_{ij} is a proxy for trade costs between the countries (geographical distance). Other proxies for trade costs include contiguity, common language, colonial links and landlocked country. In order to analyze the underlying relationships, equation 1 is augmented to include natural resource endowments and relative labour costs. The baseline model is specified as:

$$\ln FDI_{ijt} = \beta_0 + \beta_1 \ln GDP_{jt} + \beta_2 \log GDP_{it} + \beta_3 NRES_{jt} + \beta_4 RGDPDIFF_{jt} + \gamma' Y_{ijt} + \varepsilon_{ijt} \quad (2)$$

$$\varepsilon_{ijt} = u_{ij} + v_{ijt}$$

Where $NRES$ is a measure of natural resource endowments; $RGDPDIFF$ is real GDP per capita difference between source and destination countries (relative labour costs); Y_{ijt} reflects a set of control variables representing pair-specific characteristics (distance and common language); and u_{ij} captures country-pair invariant factors not included in the model such as colonial links and the existence of common border.

The size of markets is predicted to exert a positive effect on bilateral FDI, suggesting that more FDI is attracted by larger economies compared to small host countries. The larger the size of markets the greater the prospects of increased profits from MNE activities which drives foreign investments in the country. A prediction of the horizontal model is that FDI arises when there are similar factor abundance between countries whereas vertical FDI predicts that case of large differences in relative factor endowments (Yeaple, 2003). Because of limited data on skill endowments in host countries, we follow recent literature and use the difference in real GDP per capita between the source and host country as a proxy for relative labour costs or differences in factor endowments (Busse et al, 2010; Abdellah et al, 2012; Andre`s et al, 2013). Relative labour cost variable captures efficiency-seeking motivations for FDI. A positive coefficient on the variable suggests that there are factor-cost differences between the source and host country. This implies that bilateral FDI is driven by lower labour costs. On the other hand, a negative coefficient for the variable implies similarity in relative factor endowments. Here, MNE activities are

motivated by the presence of skilled labour rather than lower labour costs. The literature on FDI-natural resource curse suggests a negative sign for natural resources, reflecting the adverse effect on natural resources on FDI (Poelhekke and van der Ploeg, 2010; Asiedu, 2013).

The baseline model is estimated separately for intraregional and interregional FDI over the period 2001-2012. To assess the robustness of the results on market size, natural resources and relative labour costs, a set of control variables are included in the baseline model. Thus our empirical specification takes the form:

$$\ln FDI_{ijt} = \beta_0 + \beta_1 \ln GDP_{jt} + \beta_2 NRES_{jt} + \beta_3 RGDPDIFF_{jt} + \vartheta' Z_{jt} + \delta' S_{it} + \gamma' Y_{ijt} + \varepsilon_{ijt} \quad (3)$$

$$\varepsilon_{ijt} = u_{ij} + v_{ijt}$$

Where Z_{jt} is a vector of host country control variables which comprises quality of institutions, trade costs, macroeconomic stability, financial development, surrounding market potential, agglomeration economies, quality of infrastructure and episode of internal armed conflict; and S_{it} is a set of source country control variables such as nominal GDP and output cycle. The vector Y_{ijt} includes geographical distance and dummies for the existence of common language, ratified bilateral investment treaties and regional trade agreements.

In order to attest to the differences between intraregional investors and counterparts from OECD and emerging market economies in terms of the variables of interest, we include a dummy variable for investments originating from either OECD or emerging markets and interaction terms on GDP, natural resources and relative labour costs as specified in equation 4:

$$\ln FDI_{ijt} = \alpha + \beta oecd_i + \theta' X_{jt} + \vartheta' oecd_i * X_{jt} + \vartheta' Z_{jt} + \delta' S_{it} + \gamma' Y_{ijt} + \varepsilon_{ijt} \quad (4)$$

$$\varepsilon_{ijt} = u_{ij} + v_{ijt}$$

where $oecd_i$ is a dummy variable coded 1 if FDI originates from the OECD and zero if intraregional; and X_{jt} is a vector of the factors of interest (host GDP, real GDP per capita difference and natural resources). Similarly, we replace aes_i with eme_i where the latter takes a value of 1 if the source of FDI is an emerging market economy and zero if intraregional.

The baseline model (equation 2) and the augmented model of interest (equation 4) are estimated using the pooled ordinary least squares (OLS) and Hausman-Taylor (HT) estimation techniques. One problem with the pooled OLS is that it does not deal with the problem of unobserved heterogeneity and thus potential endogeneity which leads to biased estimates. The Hausman-

Taylor (1981) model is an instrumental variable that addresses the problem of endogeneity and allows for estimation of the parameters of both time-varying and time-invariant regressors. Following the exposition of the HT estimator by Cameron and Trivedi (2010) and Baltagi et al (2014), we specify the HT gravity model of bilateral FDI stock as:

$$\begin{aligned}
 FDI_{ijt} &= X_{1it}\beta_1 + X_{2it}\beta_2 + Z_{1i}\delta_1 + Z_{2i}\delta_2 + \varepsilon_{ijt} \\
 \varepsilon_{ijt} &= u_{ij} + v_{ijt}
 \end{aligned}
 \tag{5}$$

Where X_{1it} is a set of time varying explanatory variables that are uncorrelated with the country-pair fixed effects u_{ij} and the error term v_{ijt} . Specifically, X_{1it} comprises the surrounding market potential of the host country, real GDP per capita difference between source and host country and interaction term, inflation and output gap of source country. X_{2it} is a set of time-varying explanatory variables which are potentially correlated with u_{ij} but not v_{ijt} (corruption, nominal GDP of host and source country, natural resources, interaction terms on host GDP and natural resources, trade costs, financial development, bilateral investment treaty dummy, regional trade agreements dummy, share of total FDI stock in GDP, infrastructure index and internal conflict dummy). Z_{1i} denotes a time-invariant exogenous variable (landlocked dummy); and Z_{2i} captures the time-invariant endogenous variables (bilateral distance and common official language).

Baltagi et al (2014) argue that the Hausman-Taylor model will yield efficient estimates of the parameters if the explanatory variables are properly separated into exogenous and endogenous variables and the model is over-identified. The correlation between the explanatory variables and unobserved effects is addressed through the use of instruments derived internally from information within the model (Cameron & Trivedi, 2010). For identification of the parameters of the model, the approach requires that the number of time-varying exogenous regressors (X_{1it}) should be at least as large as the number of time-invariant exogenous regressors (Z_{2i}) (Cameron & Trivedi, 2010). To guard against the problem of weak instruments, there should be sufficient correlation between the instruments and Z_{2i} . The test for overidentifying restrictions is conducted to ascertain the suitability of the internally generated instruments. The usual approach involves using the Sargan-Hansen test for overidentifying restrictions (Mitze et al., 2008). The null hypothesis of the test indicates that the instruments are valid, implying that there is no correlation between the instruments and the error term. Thus the validity of the instruments is confirmed if the null hypothesis is not rejected.

The market size of the host economy influences the volume of trade between the host and source countries, which suggests that nominal GDP could be potentially endogenous in the model. The resource curse theory predicts that natural resources negatively correlate with the quality of institutions in host economies, implying that natural resources and corruption are endogenous explanatory variables. The existence of ratified BIT may proxy for the quality of institutions in host economies and it is considered to be endogenous in empirical research (Busse et al, 2010). Bilateral distance and the existence of common language and colonial links proxy cultural similarity between the source and host country and affect trade or transaction costs. These variables are correlated with the omitted country-pair-specific effects and thus potentially endogenous (Bergstrand and Egger, 2007; Baltagi et al, 2014). Similarly, the trade costs variable is treated to be endogenous in the model.

Well-functioning domestic financial markets would lower the costs of transactions and thus enhance the efficiency of financial resources allocated to investment projects. It also facilitates internal mobilization of capital from domestic markets to finance the operations of MNCs. Thus countries with well-developed financial markets are more likely to attract more FDI. Similarly, good quality infrastructure reduces transaction costs and enhances the efficiency of FDI (Kinishita and Lu, 2006). We also treat total FDI stock as endogenous given that the stock of FDI in host country may influence the decisions of potential investors, especially when information about the investment climate in destination countries is limited (see Anyanwu, 2012). The internal armed conflict dummy is a potentially endogenous variable. This draws from the armed conflict literature which argues that the effect of armed conflict on FDI depends on commodity prices, which in turn determine the profitability of MNE activities and thus influences investment decisions (see Lee, 2014). There is potential endogeneity bias resulting from self-selection of country-pairs into trade agreements (Baier and Bergstrand, 2007; Baltagi et al, 2014). Thus regional trade agreement dummy is treated as an endogenous variable.

The gravity model of FDI is often estimated in its natural logarithm form rather than level because of skewness of FDI data. This reduces the weights of outliers and the estimated parameters of the continuous explanatory variables can be interpreted as elasticities (Levy-Yeyati et al, 2007; Dinga and Dingova`, 2011). A limitation of this approach is that zero and negative FDI stock values are disregarded. This may result in biased estimates given that zero observations may not be random

and could be driven by investment indivisibilities and fixed costs (Dabla-Norris et al, 2010). Santos-Silva and Tenreyro (2006, 2011) and Westerlund and Wilhelmsson (2011) address the issue of zero trade flows using the Poisson pseudo- maximum likelihood (PPML) estimator. The approach requires that the dependent variable is non-negative (Santos-Silva and Tenereyro, 2011). Our data however contains negative FDI stock values, which cannot be discarded since these observations could be reflecting existing institutional framework that discourages FDI.⁸ To retain zero and negative observations on the dependent variable, we adopt a semi-log transformation proposed by Levy-Yeyati et al (2007) which takes the form:

$$LFDI = sign(FDI)\log(1 + |FDI|) \quad (4)$$

The first part of the transformation ($sign(FDI)$) returns a component equals -1 when FDI stock is negative, 0 when it is zero and 1 when greater than zero. This transformation ensures that zero and negative values on bilateral FDI stock are preserved after taking the natural logarithm of the variable.

4.2 Data

The dependent variable is defined in terms of bilateral FDI stocks rather than FDI flows since stocks values captures other forms of capital such as reinvested earnings, capital generated from domestic capital markets and disinvestments etc. (Narula, 2010). The data on bilateral FDI stock is obtained from the UNCTAD (2014) database⁹. GDP of host and source countries is measured in current US and obtained from the World Bank's World Development Indicators (WDI). Data on real GDP per capita (constant 2005 US\$) is also sourced from the WDI. Natural resource endowment is measured by the sum of the share of fuel exports, and ores and metal exports in merchandize exports (Asiedu, 2006; Asiedu and Lien, 2011; Nwaogu and Ryan, 2014). We also use the sum of the share oil rents and mineral rents in GDP as an alternative measure of natural resources¹⁰. Data on the variables are collected from the World Bank's WDI. Appendix 1 provides a summary description of the variables used in the regression.

⁸ Recent disinvestments in Angola are induced by government policy that requires foreign affiliates to team with local partners but projects are not successfully implemented due to lack of local partners (UNCTAD, 2014b)

⁹ UNCTAD's Bilateral FDI Statistics (2014) is available at <http://unctad.org/en/Pages/DIAE/FDI%20Statistics/FDI-Statistics-Bilateral.aspx>

¹⁰ Oil rents is used in some empirical studies as a measure of natural resources (Poelhekke and Van der Ploeg, 2010; Asiedu, 2013). However, due to limited number of oil exporting countries and the diversity in natural resource

The study uses an unbalanced panel of 46 host countries and the gravity model is estimated over the period 2001-2012. To guard against potential heterogeneity bias arising from the differences in economic structures between the resource and non-resource rich countries, we divide the sample of host countries into resource-rich countries (24 members) and non-resource rich countries (22). Similarly, we split interregional source countries into members of the OECD and emerging markets. This gives a sample of 21 OECD, 17 emerging markets and 33 intraregional source countries which yields 8952 observations¹¹. We note that not all source countries have invested in all the host countries. The separation of host countries into resource and non-resource rich in sub-Saharan Africa was based on the criterion that resource exports exceeded 25 percent of total merchandise exports in 2005-2010 (Thomas and Trevino, 2013). Mozambique was included in the list of resource-rich countries due to recent extraction of gas deposits in the country. The lists of both host and source countries are displayed in appendix 2.

Table 4 reports the descriptive statistics of the variables used in the regression. It is clear that the greater share of foreign investments to the region (78.2 percent) during the review period originated from the OECD and emerging markets. This suggests that interregional investors play a prominent role in providing foreign resources to host African countries. The statistics show considerable heterogeneity among host countries in terms of natural resource endowments, ranging from resource-poor to resource-rich countries. Given these differences, we report separate correlation matrices of the variables with respect to investments from the OECD, emerging markets and intraregional economies (appendix 2). The results show strong positive association between market size of host countries and bilateral FDI stock from the different sources. The coefficient on natural resources suggests significant negative association with FDI stock. Similarly, relative labour cost negatively correlates with FDI stock from emerging markets economies. To deal with the problem of weak instruments in the Hausman-Taylor IV estimation, we display the correlation coefficients between the time-invariant common language dummy (endogenous) and the time-varying exogenous variables (inflation rate, market potential and output

endowments across host economies, we combine oil rents with mineral rents to generate an alternative measure of natural resource endowments.

¹¹ The sample of host countries used in the regression varies depending on the specification and the measure of natural resources used. Korea Republic and Turkey were excluded from member countries of the OECD and classified as emerging markets. Also, intraregional countries include emerging African economies.

cycle). The matrix indicates strong association between common language and the exogenous variables except the case of FDI from emerging markets when correlation between surrounding market potential and common language appears to be weak. The market potential variable captures third country effects which may induce bias in the results if ignored from the analysis.

Table 4: Descriptive statistics

Variable	Obs	Mean	Std.Dev.	Min	Max
Intraregional Investors' dummy	8952	0.218	0.413	0	1
Bilateral inward FDI stock (US\$ millions)	6841	459.91	3025.27	-1527	80439
Host nominal GDP (US\$ billions)	8952	47.84	86.77	0.0766	463.0
Source nominal GDP (US\$ billions)	8952	1580	3175	0.409	16245
Fuel, ores & metals (%)	8244	34.46	33.05	0	99.67
Oil & mineral rents (%)	8952	9.236	16.32	0	93.11
Real GDP per capita difference (US\$)	8952	22006	20435	-12767	87427
Trade costs	8952	0.0141	0.00541	0.00285	0.0477
Surrounding market potential	8952	38.83	48.20	2.355	369.2
Domestic credit (%)	8952	27.17	24.60	0.449	100.8
Control of corruption	8952	-0.421	0.598	-1.706	1.250
ICT infrastructure	8952	7.983	10.72	0.0300	59.75
Distance (Km)	8952	6503	3603	257.3	19103
Inflation rate (%)	8952	10.18	13.53	-32.81	142.5
Output cycle	8952	26.27	2.268	20.02	30.29
Total inward FDI stock (%)	8952	0.457	0.834	-0.0672	8.875
Bilateral investment treaty dummy	8952	0.218	0.413	0	1
Regional trade agreements dummy	8952	0.214	0.410	0	1
Common language dummy	8952	0.610	0.488	0	1
Landlocked dummy	8952	0.214	0.410	0	1
Internal armed conflict dummy	8952	0.0950	0.293	0	1

5. Results and discussion

We analyze the role of markets, natural resource endowments and efficiency-seeking considerations in driving FDI to host countries by first taking a careful look at the results of the baseline model (equation 2). To assess the robustness of the results, we include a set of conditioning variables in the baseline specification (equation 3) and split the sample of host and source countries in order to avoid potential heterogeneity bias. We then determine whether there are significant differences between the factors explaining intraregional FDI and investments from the OECD and emerging markets using equation 4.

The results of the baseline model for intraregional and interregional FDI are estimated using the OLS and Hausman-Taylor techniques. In the baseline specification, the basic gravity model was augmented by allowing for natural resource-seeking and efficiency-seeking motives of FDI in addition to market-seeking consideration. To allow for the identification of the HT model, two additional proxies for trade costs (common language and landlocked dummies) and the surrounding market potential variable were included and the results are reported in table 5. The

analysis is based on the results of the HT model, given that the estimates of the pooled OLS are biased and inconsistent. We focus on columns 3 (intra-regional) and 4 (inter-regional) as the HT results based on aggregate data (column 2) may suffer from heterogeneity bias. However, the results of the OLS regression are reported to provide insights into the magnitude and direction of the bias.

Table 5: Determinants of Intra-regional and Inter-regional FDI (Baseline results)

Variables	(1) Total (OLS)	(2) Total (HT)	(3) Intra (HT)	(4) Inter (HT)
Log Host GDP	1.697*** (0.086)	4.243*** (0.373)	4.208*** (0.665)	4.015*** (0.408)
Fuel & ores & metals exports	-0.072*** (0.004)	-0.060*** (0.012)	-0.083*** (0.024)	-0.058*** (0.013)
Real GDP per capita difference (x10 ⁻³)	0.008 (0.006)	0.015*** (0.005)	0.166** (0.072)	0.040*** (0.006)
Log source GDP	0.975*** (0.063)	1.142*** (0.062)	1.351*** (0.148)	1.352*** (0.077)
Log distance	-1.323*** (0.167)	-1.616*** (0.170)	-2.119*** (0.306)	0.250 (0.256)
Common language dummy	0.665** (0.274)	-12.855 (18.354)	-10.237 (7.402)	-10.662 (14.160)
Landlocked dummy	-0.944*** (0.311)	4.870 (9.924)	7.266 (5.665)	2.846 (8.626)
Log market potential	0.302*** (0.107)	-1.767 (1.200)	-0.011 (1.722)	-1.903 (1.283)
Constant	-42.164*** (2.576)	-92.278*** (9.599)	-96.707*** (12.915)	-110.792*** (9.095)
Observations	6,155	6,155	1,290	4,865
R-squared	0.135			
Number of countries		39	31	38
Sargan-Hansen statistic ($\chi^2(1)$)		1.131(0.2875)	0.416(0.5191)	0.306(0.5801)

Note: ***, **, * denote significance at the 1, 5 and 10% respectively.

The results show that market-seeking is an important motive behind intra-regional and inter-regional investments in Africa. As shown in columns 3 & 4 (HT model results), the coefficient on host GDP has the expected positive sign and statistically significant at the 1 percent level, which is in line with our hypothesis that foreign investments to African countries are driven by market-seeking considerations. Large markets offer more profitable investment opportunities compared to smaller markets (Jaumotte, 2004). The larger the markets the more sales are generated by MNEs which attracts other firms to invest in the economy (Yeaple, 2003). While our result on markets agrees with the findings of previous studies that have used aggregate data on FDI flows (Asiedu, 2006; Anyanwu, 2012; Loots and Kabundi, 2012), the paper differs from these studies as we use disaggregated FDI and provide evidence on the size of markets as a significant factor driving intra-regional and inter-regional investments to African countries.

We find that foreign investments to the region are driven by efficiency-seeking motives. The coefficient on real GDP per capita in columns (3 & 4) show a significant positive effect on bilateral FDI, which suggests that availability of cheap labour (efficiency-seeking) would increase the attractiveness of host countries to intraregional and interregional investments. The result provides evidence in support of suggestions that the adoption of preferential trade agreements granted under the United States' African Growth and Opportunity Act (AGOA), the European Union's Everything But Arms (EBA) and China's zero-tariff measures for African least developed countries has facilitated some efficiency-seeking investments in Africa (UNCTAD, 2013c). The results are in line with Busse et al (2010) that show that investments to developing countries are driven by lower labour costs. This paper, however, extends existing studies by providing evidence on how intraregional and interregional FDI are driven by efficiency seeking objectives to African countries.

The coefficient on fuel, ores and metal exports shows a significantly negative impact on bilateral FDI stock for both intraregional and interregional FDI. The result is suggestive of the fact that natural resource endowment has an adverse effect on aggregate FDI, in line with the theoretical predictions of the FDI-resource curse literature. Poelhekke and van der Pleg (2010) argues that natural resources promotes resource FDI but crowds-out non-resource FDI; and aggregate FDI in host countries decreases when the crowding-out effect dominates. The result corroborates recent evidence on the adverse effects of natural resources of African economies (Asiedu, 2013; Nwaogu and Ryan, 2014). The evidence further agrees with arguments that foreign investments from the largest investors (EU, USA and China) are mostly concentrated in mining and extractive industries. With the exception of few countries such as South Africa, most resource -rich countries in SSA have attracted limited FDI in manufacturing and services sectors.

As surveyed in the literature, the mechanisms through which natural resources could exert an adverse effect on FDI include loss of competitiveness through appreciation of the local currency, macroeconomic instability induced by adverse movements in global commodity prices and natural resource revenue volatility. Earlier studies on African countries however suggests that natural resources exert a positive effect on FDI. Using the share of fuels and mineral in total exports as a measure of natural resources, Asiedu (2006) finds significant positive effect on FDI in Africa. Some studies have used a dummy variable for oil exporting countries as proxy for natural resources

and the results show that more FDI is attracted by oil expecting countries in Africa (Loots and Kabundi, 2012; and Anyanwu, 2012). Unlike these studies, this paper provides evidence on how natural resources adversely affects FDI from both intraregional and intraregional sources using recent bilateral FDI data.

Moving to the gravity variables, the coefficient on geographical distance between the host and source countries (column 3) shows a significant negative impact on intraregional FDI. Because geographical distance is used as a proxy for trade costs, the result suggests that trade costs inhibit intraregional FDI and agrees with the predictions of the gravity model. Intraregional FDI are mostly directed to neighbouring countries, especially TNCs from South Africa and Nigeria (UNCTAD, 2014b). Thus the negative significant coefficient suggests that the TNCs from intra-African countries could be sensitive to trade costs. Until recently, outward FDI from South Africa were mostly attracted by member countries in the Southern African Development Community (SADC). However, the result in column (4) does not show any significant effect of geographical distance on interregional FDI. The result could be explained by the fact that geographical distance may become less important when FDI is driven by resource-seeking considerations (Gonchar and Marek, 2013).

The result show a significant positive effect of the source country's GDP on intraregional and interregional investment. This implies that the market size of source countries has an enhancing effect on intraregional and interregional FDI. As noted, intraregional investments to other African countries are largely driven by TNCs from South Africa, Kenya and Nigeria (UNCTAD, 2014b) which represent the largest economies in Southern, East and West Africa respectively. Other proxies of trade cost (common language and landlocked dummies) and host surrounding market potential variables, which were added to augment the gravity specification and ensure the identification of the HT model, show not significant effects on intraregional and interregional FDI as reported in columns (3 & 4) respectively.

The baseline specification offers promising results which are consistent with much of the literature on FDI but there are issues that should be noted. First, there are possible omitted variables that could lead to biased estimates, such as agglomeration economies, institutional quality, infrastructure quality, macroeconomic instability and the effect of external factors on bilateral FDI stock. The second relates to potential heterogeneity bias arising from pooling resource and non-

resource destination countries, which are characterized by economic structures. Thus, it is worth considering which factors are relevant to promoting FDI to destination countries by splitting the sample of host countries, while capturing the effects of conditioning variables. We use the sum of the share of oil and mineral rents in GDP as an alternative measure of natural resource endowments.

Breaking the sample down by resource and non-resource rich countries, we report the results of intraregional FDI in table 6. Column (2) shows a significant positive effect of the host country market size on intraregional FDI to resource-rich countries after controlling for the conditioning variables. The coefficient is economically significant. The magnitude of the coefficient implies that a 1 percent rise in nominal GDP of host countries will lead to 6 percent increase in intraregional FDI, *ceteris paribus*. The result confirms that intraregional FDI is driven by market-seeking motives. The result is in line with the trend analysis that suggests that intraregional investments have been directed to large markets, especially TNCs from South Africa that have gone beyond the SADC region and extended activities in large West African markets. Egypt in Northern Africa, has attracted consumer-oriented industries due partly to the size of the country's population (UNCTAD, 2014b).

The results in column 3 show a significant positive coefficient of real GDP per capita difference on intraregional FDI, which confirms that these investments are driven by efficiency-seeking motives. As discussed in the trend analysis, a number of countries especially non-resource rich African economies have attracted efficiency-seeking investments in recent years. These include Egypt and Madagascar which are driven by the presence of cheap labour in these countries. Mauritius has promoted efficiency-seeking investments through the signing of bilateral treaties. Foreign investments attracted into the clothing and textile industries in African economies have defined by efficiency seeking investments to the region.

Focusing now on fuel, ore and metals exports variable in column (2), the results also confirm the adverse effect of natural resources on intraregional FDI. The result is surprising given that intraregional FDI are mostly concentrated in manufacturing and services sectors. This is possibly reflecting the resource seeking investments undertaken by some mining companies especially from South Africa, such as Anglo Ashanti, Exxaro Resources and Goldfields that have directed investments to the extractive industries in Ghana, Mali, Zimbabwe and Democratic Republic of

Congo (Disenyano & Sogoni, 2014). The results on market-seeking, natural resources and efficiency-seeking motives of intraregional FDI are qualitatively the same when oil and mineral rents variable is used as an alternative measure of natural resources (column 3). Column (4) suggests that intraregional investments to non-resource rich countries are not driven by market-seeking and efficiency –seeking considerations. The results should be interpreted with caution given that they may suffer from small sample bias.

Table 6: Determinants of Intraregional FDI (resource and non-resource rich countries -HT model)

Variables	(1) Total	(2) Resource rich	(3) Resource rich	(4) Non-resource rich
Log Host GDP	5.687*** (0.962)	6.326*** (1.032)	6.341*** (1.008)	2.337 (2.483)
Fuel & ores & metals exports	-0.053** (0.026)	-0.050* (0.026)		
Oil & mineral rents			-0.117** (0.056)	
Real GDP per capita difference (x10 ⁻³)	0.141* (0.075)	0.186** (0.086)	0.160* (0.087)	0.041 (0.164)
Log source GDP	0.601 (0.578)	-0.226 (0.732)	-1.962*** (0.649)	1.963* (1.014)
Log distance	-1.803*** (0.394)	-1.832*** (0.429)	-1.874*** (0.434)	-1.866* (1.010)
Common language dummy	-14.572 (10.996)	-8.796 (9.324)	-4.794 (8.260)	6.865 (16.413)
Landlocked dummy	12.221 (8.276)	9.889 (9.332)	10.903 (8.284)	-1.331 (11.222)
Log market potential	1.885 (2.183)	0.796 (2.449)	0.320 (2.302)	0.624 (2.756)
Regional trade agreements dummy	0.738 (0.660)	0.699 (0.769)	0.657 (0.778)	0.836 (1.369)
Output cycle	0.903 (0.587)	1.710** (0.757)	3.542*** (0.666)	-0.225 (0.990)
Inflation	0.059*** (0.021)	0.065*** (0.023)	0.033 (0.021)	0.011 (0.053)
Control of corruption	0.513 (1.382)	1.320 (1.480)	1.143 (1.473)	-3.001 (3.772)
Log trade costs	1.732 (1.707)	3.562* (1.914)	1.971 (1.998)	-3.913 (3.723)
Total FDI stock	-3.046 (2.111)	-1.847 (2.258)	-2.781 (2.205)	1.303 (1.505)
Log domestic credit	-0.708 (1.036)	-0.373 (1.251)	-1.384 (1.141)	-0.225 (2.244)
Bilateral investment treaty dummy	3.399*** (0.906)	2.466** (1.131)	2.415** (1.141)	4.330*** (1.618)
Log ICT infrastructure	-0.897** (0.375)	-0.756* (0.411)	-0.184 (0.402)	-0.870 (0.916)
Internal armed conflict dummy	2.409** (1.183)	2.264 (1.513)	1.824 (1.388)	1.945 (2.025)
Constant	-132.911*** (21.487)	-140.626*** (22.917)	-150.184*** (22.665)	-93.495 (63.046)
Observations	1,290	928	952	374
Number of countries	31	18	20	14
Sargan-Hansen statistic ($\chi^2(1)$)	1.036(0.7925)	2.123(0.5473)	6.687(0.0826)	1.097(0.7778)

Note: ***, **, * denote significance at the 1, 5 and 10% respectively.

With respect to the control variables, we include output cycle of the source country to capture the effect of business cycle fluctuations in source countries on FDI. Output cycle affects bilateral FDI

through income and substitution effects. Levy-Yeyati et al (2007) argue that higher earnings generated by firms during economic expansions can promote investment in the source and host countries, which implies a positive income effect on bilateral FDI. By contrast, the substitution effect suggests a negative effect of output gap on FDI. This reflects the argument that foreign investors consider the differences in relative rates of return between the source and host country when foreign investment becomes less (more) attractive in periods of expansions (recessions) in the home country (Levy-Yeyati et al, 2007; Dabla-Norris et al, 2010). It is clear from the coefficient on output gap variable in columns (2 & 3) that economic expansion in the source countries would promote intraregional FDI. The result indicates a procyclical behaviour of intraregional FDI, suggesting that strong economic performance in the major source countries is needed to promote intra-African investments to other African countries.

The existence of ratified bilateral investment treaty between source and host countries is a proxy for the quality of institutions and could reduce investment uncertainty since FDI issues are addressed in these agreements (Busse et al, 2010). The coefficient on the variable as shown in columns (2- 4) show strong positive effect on bilateral FDI. This indicates that promoting bilateral investment treaties offers an avenue through which intraregional FDI could be enhanced.

As noted above, the use of aggregate data on interregional FDI may mask important differences between the OECD and emerging countries since investors from these economies are characterized by different governance and institutional structures. To avoid potential bias in the results, we split the sample and determine whether investments from the OECD and emerging markets are driven by market-seeking, natural resources and efficiency seeking motivations after controlling for the effects of control variables. Table 8 presents the determinants of foreign investments to resource and non-resource rich African countries from emerging market economies. The results as shown in columns (2 & 3) suggest that foreign investments from emerging markets to resource rich countries are market-seeking. The size of the coefficient is economically significant. It shows in column (2) that 1 percent increase in host countries GDP will increase foreign investments from emerging economies by 3.5 percent, *ceteris paribus*. Columns (2& 3) show that the coefficients on share of fuel, ore and metal exports in merchandize exports and share of oil and mineral rents in GDP are significantly negative. The result suggests an adverse effect on natural resource endowments on investments from emerging economies in line with previous evidence on

aggregate interregional FDI. This is expected given that foreign investments from China and India (major source countries) are largely driven by natural resource seeking investors.

Unlike the results on aggregate interregional results reported in table 5 (column 4), columns (2&3) in table 7 show significant negative coefficient on real GDP per capita difference. This is an indication that foreign investments from emerging economies are driven by the presence of skilled labour rather than lower labour costs in host resource rich countries. For instance, foreign firms engaged in diamond extraction require local skilled labour in processing diamonds if they are to set up part of the production activities in host countries.

Table 7: Determinants of Emerging markets' FDI (resource and non-resource rich countries- HT model)

Variables	(1) Total	(2) Resource rich	(3) Resource rich	(4) Non-resource rich
Log Host GDP	2.369*** (0.811)	3.451*** (1.079)	2.661*** (0.961)	1.618 (1.179)
Fuel & ores & metals exports	-0.065*** (0.022)	-0.062** (0.026)		
Oil & mineral rents			-0.094** (0.046)	
Real GDP per capita difference (x10 ⁻³)	-0.006 (0.018)	-0.052** (0.022)	-0.056*** (0.022)	0.060* (0.032)
Log source GDP	2.986*** (0.470)	3.615*** (0.655)	3.671*** (0.636)	1.090** (0.552)
Log distance	0.261 (0.603)	1.184 (0.876)	0.670 (0.846)	-1.116 (0.868)
Common language dummy	-0.680 (6.037)	-4.878 (5.393)	-2.084 (5.861)	2.158 (13.805)
Landlocked dummy	-0.431 (3.488)	0.592 (3.344)	-0.226 (3.524)	0.462 (7.815)
Log market potential	-0.029 (1.118)	-1.536 (1.406)	-0.956 (1.371)	1.101 (1.795)
Regional trade agreements dummy	2.862*** (1.084)	-0.635 (1.644)	0.038 (1.608)	3.690** (1.579)
Output cycle	-1.813*** (0.487)	-2.931*** (0.688)	-2.691*** (0.674)	0.446 (0.552)
Inflation	0.027 (0.018)	0.020 (0.021)	0.000 (0.017)	0.005 (0.039)
Control of corruption	-1.305 (1.303)	1.201 (1.563)	0.170 (1.511)	-5.106*** (1.948)
Log trade costs	-0.128 (1.415)	3.040* (1.797)	0.454 (1.955)	-2.589 (1.831)
Total FDI stock	1.443 (1.891)	1.399 (2.216)	-1.002 (1.847)	0.892 (0.632)
Log domestic credit	-2.868*** (0.799)	-2.497** (1.013)	-2.493*** (0.859)	-2.958** (1.388)
Bilateral investment treaty dummy	2.755*** (0.666)	1.907* (1.013)	1.809* (0.989)	3.391*** (0.897)
Log ICT infrastructure	0.652* (0.351)	0.252 (0.448)	0.522 (0.405)	1.336*** (0.493)
Internal armed conflict dummy	0.133 (0.902)	0.620 (1.125)	0.416 (0.966)	-0.650 (1.406)
Constant	-71.836*** (19.160)	-72.006*** (24.914)	-72.189*** (22.294)	-69.738** (28.504)
Observations	1,752	1,104	1,236	768
Number of countries	36	19	23	20
Sargan-Hansen statistic ($\chi^2(1)$)	3.469(0.3248)	1.864(0.6012)	1.555(0.6697)	2.291(0.5142)

Note: ***, **, * denote significance at the 1, 5 and 10% respectively.

Moving to the results on non-resource rich countries, column (4) shows that investments from emerging markets are driven by efficiency-seeking motives. The coefficient on real GDP per capita shows a significant positive effect on investments from these economies. This contrasts the evidence presented in columns (2 & 3) on resource-rich countries and supports our argument that the results on aggregate FDI could mask significant differences between host and source countries. Efficiency seeking is evident in Chinese investments in the Kenyan automotive industry (Barton & de Bellefroid, 2015). The vehicle assembly company Foton, for example, was setup to avoid import duties on cars (Juma, 2011).

A striking result in column (4) is the positive but insignificant coefficient on host GDP. This is explained by export market-oriented nature of investments attracted by most non-resources rich countries. Several non-resource rich countries engaged in clothing and textile production served as export platform for Asian garment firms in order to access the EU and USA markets under the MFA and AGOA schemes. A look at the control variables suggests that some of these factors are relevant for explaining investments to resource and non-resource rich countries. Columns (2 & 3) show significant negative coefficient of output cycle on investments from emerging economies. As discussed above, the significant negative coefficient suggests that these investments are countercyclical. Given the market size of key drivers of foreign investments from emerging markets (China and India), expansion in economic activities in these countries could lead to lower foreign investments in host African countries as the home countries become more attractive.

We find in both resource and non-resource rich countries that domestic credit extended by banks to the private sector exerts negative significant effect on FDI from emerging market economies. The variable is a measure of the level of development of domestic financial markets. Host countries with more developed financial markets are likely to be attractive destinations for FDI since resources can be mobilized internally from the local economy to fund MNE operations in host countries and also increases the efficiency of investments through reductions in transaction costs. A plausible explanation for the unexpected result the increased investment in underdeveloped financial markets especially Malaysian investments in the banking industry in West Africa. Anyanwu (2012) finds a negative effect of financial markets development on FDI flows to African economies.

The results show that the existence of ratified bilateral investment treaty between the source and host countries promotes emerging markets' investments to resource and non-resource rich countries. The coefficient on ICT infrastructure in column (4) is positive and significant, indicating the relevance of ICT infrastructure in attracting investments from emerging markets to non-resource rich countries. Infrastructure development reduces transaction costs and promotes investments in host countries. In light of the development of mobile phone transactions, ICT infrastructure is becoming increasingly important especially in East Africa such as Kenya and Uganda. Chinese companies have also invested in the ICT industry in Ethiopia (Brown, 2012). Regional trade agreement dummy show a significant on FDI, which suggests that the agreement promotes investment by reducing uncertainty. As column (4) shows, the coefficient on corruption variable is strongly significant but the negative sign suggests that these investments are not deterred by the quality of institutions in host African countries. The variable is included to control for the quality of institutions in host countries. Greater host corruption induces investment uncertainty which arises from insecure property rights and increased risk of expropriation (Driffield et al, 2014). The result are however contrary to predictions.

A similar analysis is done for investments from the OECD economies. Table 8 reports the results of the determinants of investments from the OECD. Results in columns (2 & 3) show that the effects on the variables of interest are qualitatively the same as the results displayed in column (4), table 5 on aggregate interregional FDI. The results suggest that TNCs from the OECD to resource rich countries are motivated by large markets and efficiency-seeking considerations. The coefficient on both measures of natural resources in columns (3 &4) show an adverse effect on natural resource abundance in OECD investments. As discussed in the trends, large and resource rich countries have been the major recipients of foreign investments from the EU and USA. The results provide evidence in support of these arguments. While resource rich countries have attracted resource-seeking investments from the OECD, non-resource FDI appears to have been crowded out. Evidently, most resource rich countries in SSA have attracted little investments in manufacturing and services sectors.

Table 8: Determinants of OECD FDI (resource and non-resource rich countries- HT model)

Variables	(1)	(2)	(3)	(4)
	Total	Resource rich	Resource rich	Non-resource rich
Log Host GDP	3.181*** (0.591)	3.901*** (0.790)	3.316*** (0.748)	2.383* (1.280)
Fuel & ores & metals exports	-0.043** (0.017)	-0.051*** (0.019)		
Oil & mineral rents			-0.131*** (0.036)	
Real GDP per capita difference (x10 ⁻³)	0.077*** (0.012)	0.075*** (0.016)	0.076*** (0.015)	0.087*** (0.018)
Log source GDP	1.836*** (0.194)	1.570*** (0.296)	1.762*** (0.296)	1.939*** (0.255)
Log distance	-0.798* (0.416)	-0.299 (0.568)	0.134 (0.567)	-1.714*** (0.596)
Common language dummy	-8.663* (5.034)	-0.383 (3.875)	-1.132 (6.315)	0.678 (137.315)
Landlocked dummy	3.342 (3.262)	1.686 (3.328)	-0.048 (4.952)	-5.337 (76.940)
Log market potential	0.847 (1.009)	-0.026 (1.283)	0.167 (1.467)	-4.448 (3.060)
Regional trade agreements dummy	0.208 (0.600)	0.979 (0.970)	1.123 (0.983)	-0.544 (0.772)
Output cycle	-0.265 (0.167)	-0.292 (0.256)	-0.296 (0.260)	-0.056 (0.219)
Inflation	0.022 (0.014)	0.024 (0.016)	0.014 (0.013)	0.014 (0.032)
Control of corruption	0.336 (1.030)	1.891 (1.334)	1.403 (1.293)	-1.372 (1.479)
Log trade costs	2.194** (1.073)	3.403** (1.432)	0.366 (1.566)	0.586 (1.384)
Total FDI stock	2.485* (1.336)	2.777 (1.709)	1.940 (1.402)	-0.189 (0.574)
Log domestic credit	-1.353** (0.603)	-1.029 (0.769)	-1.338** (0.663)	-1.398 (0.985)
Bilateral investment treaty dummy	0.261 (0.363)	-0.332 (0.517)	-0.021 (0.508)	1.270** (0.508)
Log ICT infrastructure	-0.088 (0.258)	-0.236 (0.338)	-0.011 (0.320)	0.594 (0.408)
Internal armed conflict dummy	0.684 (0.685)	0.988 (0.917)	0.280 (0.779)	-0.881 (0.991)
Constant	-88.105*** (13.920)	-98.141*** (18.776)	-105.595*** (17.730)	-64.279 (58.668)
Observations	3,030	1,744	1,973	1,455
Number of countries	38	19	23	22
Sargan-Hansen statistic ($\chi^2(1)$)	1.014(0.7978)	2.594(0.4586)	1.156(0.7629)	0.197(0.9781)

Note: ***, **, * denote significance at the 1, 5 and 10% respectively.

Column (4) indicates that market-seeking and efficiency-seeking are key objectives of investors from the OECD to non-resource rich African countries. Investors from the EU to African economies are partly driven by the presence of lower wages (Barton and de Bellefroid, 2015). Mauritius is a major recipient of these investments as the country is used as a platform to facilitate investments in other African countries.

Looking at the control variables, column (4) show positive significant coefficient of BIT, suggesting that the existence of a ratified BIT between the host and destination countries would promote FDI to non-resource host countries. This is show in the case of Mauritius that promotes efficiency seeking investments through the signing of bilateral agreements. The coefficient on trade costs is only significant in column (2) when fuel, ore and metals variable was used as a measure of natural resource endowments. Likewise, domestic credit to the private sector show a negative significant coefficient only in column (3) when oil and mineral rents are employed as proxy for resource abundance. Overall, the Sargan-Hansen test for overidentifying restrictions suggests that the internally generated instruments used are valid in all the different specifications.

Having determined how market size, resource-seeking and efficiency seeking influence foreign investments from the different source economies, we explore the issue of whether interregional investors behave differently from their counterparts from the OECD and emerging market economies. A careful look at the evidence on these factors suggests that there are differences between the groups of investors. Efficiency-seeking is an important objective of intraregional investors in resource rich countries compared to investors from emerging markets who are motivated by the presence of skilled labour. Our results show that efficiency seeking is a relevant factor driving foreign investments from the OECD and emerging market countries to non-resource rich destinations unlike intraregional investments. Moreover, as noted above, intraregional investments are more concentrated in manufacturing and services sectors than extractive industries, compared to foreign investments from the OECD and emerging market economies (UNCTAD, 2014b). We also note that resource-seeking investments from emerging markets (especially China and India) in the oil and gas industry in destination countries are mostly undertaken by state-owned companies (Brown, 2012), unlike intraregional investors that are largely privately-owned. In light of these differences, we attempt to ascertain whether intraregional investors behave differently from investors from emerging markets and the OECD.

To analyze the differences between investors from intraregional and emerging markets, we derive the marginal effects of market size, real GDP per capita and natural resources separately from estimating equation 6:

$$\ln FDI_{ijt} = \beta_0 + \beta_1 eme + \beta_2 \ln GDP_{jt} + \beta_3 \ln GDP_{jt} * eme + \beta_4 NRES_{jt} + \beta_5 NRES_{jt} * eme + \beta_6 RGDPDIFF_{jt} + \beta_7 RGDPDIFF_{jt} * eme + \vartheta' R_{jt} + \varepsilon_{ijt} \quad (6)$$

Where *eme* is a dummy variable coded 1 if FDI originates from emerging markets and zero if intraregional country. R_{jt} denotes a vector of control variables. The inclusion of the interaction terms implies that the marginal effects of the variables of interest depend on the respective coefficients without the interaction terms and coefficients on the interaction terms. For example, the marginal effect of one percent change in nominal GDP on FDI from intraregional and emerging markets is given by $\beta_1 + \beta_4 * eme$:

$$\frac{\delta \ln FDI}{\delta \ln GDP} = \beta_2 + \beta_3 * eme$$

Meaningful conclusions about the differences between the groups of investors can be drawn from determining whether the estimated marginal effects are statistically different from zero (Brambor et al, 2006). The confidence interval for a unit change in the variable are also derived. Table 9 displays the marginal effects of host GDP, natural resources and real GDP per capita difference between emerging markets and host countries.

Table 9: Differences between Intraregional & Emerging markets (marginal effects)

Variable	Natural resource rich countries				
	<i>eme</i> = 0		<i>eme</i> = 1		
	Coef.	Std. error	Coef. ^a	Std. error	Conf. Interval
Log Host GDP	5.197***	0.768	4.324***	0.748	2.858; 5.790
Real GDP per capita difference (x10 ⁻³)	0.006	0.013	-0.044**	0.019	-0.082; -0.006
Fuel & ores & metals exports	-0.059***	0.019	-0.046**	0.019	-0.085; -0.008
	Non-resource rich countries				
	<i>eme</i> = 0		<i>eme</i> = 1		
	Coef.	Std. error	Coef. ^a	Std. error	Conf. Interval
Log Host GDP	2.770**	1.274	2.575*	1.221	0.181; 4.969
Real GDP per capita difference (x10 ⁻³)	0.070***	0.020	0.065**	0.029	0.028; 0.141

Note: ***, **, * denote significance at the 1, 5 and 10% respectively.

The results show that the marginal effect of these variables are significantly different from zero in resource rich countries (coefficients with superscript a) and corresponding confidence intervals displayed. Similarly, we find statistically significant marginal effects of host GDP and real GDP per capita difference variables on foreign investments to non-resource rich countries. Thus we can infer from these findings that intraregional investors behave differently from investors from emerging economies in light of market size and labour costs in non-resource destination countries; and market size, natural resources endowments and presence of skilled labour in resource-rich countries. Overall, we find that market size has a significant positive effect on FDI from these economies. It is shown that natural resources exert an adverse effect on FDI. Foreign investors

from these countries are attracted by the presence of skilled labour in resource-rich countries and lower labour costs in non-resource rich destination countries.

A similar analysis is undertaken to determine whether investors from intra-African countries are different from OECD investors. Table 10 reports the marginal effects of the variables of interest on the investments to resource and non-resource rich destination countries.

Table 10: Differences between Intra-regional & OECD (marginal effects)

Variable	<i>Natural resource rich countries</i>				
	<i>eme = 0</i>		<i>eme = 1</i>		
	Coef.	Std. error	Coef. ^a	Std. error	Conf. Interval
Log Host GDP	4.929***	0.646	4.818***	0.634	3.575; 6.061
Real GDP per capita difference (x10 ⁻³)	0.034***	0.010	0.093***	0.015	0.064; 0.122
Fuel & ores & metals exports	-0.052***	0.016	-0.061***	0.016	-0.092; -0.030
	<i>Non-resource rich countries</i>				
	<i>eme = 0</i>		<i>eme = 1</i>		
	Coef.	Std. error	Coef. ^a	Std. error	Conf. Interval
Log Host GDP	2.669**	1.163	2.367**	1.112	0.188; 4.546
Real GDP per capita difference (x10 ⁻³)	0.040***	0.013	0.087	0.018	0.051; 0.123

Note: ***, **, * denote significance at the 1, 5 and 10% respectively.

We find significant differences between these investors in response to market size, natural resources and labour costs in host resource-rich countries; and market size and labour costs in non-resource rich host countries. The findings suggests that the size of markets has an FDI enhancing effect in both resource and non-resource rich host countries. The presence of natural resources exerts an adverse effect on aggregate FDI from these sources; and lower labour costs is a factor driving OECD investments to resource and non-resource rich host countries.

6. Conclusion

While the literature on the determinants of FDI is extensive, there is however, limited evidence on what drives intraregional FDI to African countries and whether investors from the different source economies are motivated by different location factors. This paper has offered the following contribution to the literature on FDI and to the debate over the driving forces of these investments to African economies. We have explored the question of whether markets, natural resources and efficiency-seeking considerations are relevant factors driving foreign investments from different source economies. We further attested to the differences between intraregional investors and their counterparts from the OECD and emerging market economies with respect to these factors in resource and non-resource rich host African countries. This paper considers these issues given that Africa's share of global FDI inflows remains relatively low compared to other regions in the developing world, in spite of its diversity in resource endowments.

The results show considerable heterogeneity across different source and host countries. While investments from emerging markets are motivated by the presence of skilled labour in resource rich countries, we find that investors from African economies are attracted by low labour costs. The presence of cheap labour is a relevant factor attracting OECD investments to both resource and non-resource countries, unlike intra-African investments to non-resource rich countries that appear not to be driven by labour costs. The results suggests that market-seeking is a key motivation behind investments from the different types of economies to resource-rich African countries. Investors from the OECD are also attracted by large markets in non-resource destination countries. Our analysis finds an adverse effect of natural resources on FDI from the different source economies.

Drawing from the results, we conclude that market size, presence of skilled labour and lower labour costs are relevant factors driving FDI to destination countries. Natural resources attract FDI but undermine investments in the non-resource sector. With respect to the control factors, our results show that the existence of ratified bilateral investment treaties do promote FDI from the different sources to non-resource rich countries. Similarly, improvements in ICT infrastructure will attract foreign investments from emerging markets to non-resource rich economies in Africa.

Our analysis suggests that FDI to African economies would be enhanced through policy measures that ensure sustained growth and long-term development, and promote market-determined or flexibility in the wage bargaining processes. Policies designed to facilitate long-term development should include measures to promote skills development and increase investment in infrastructure in order to attract higher quality investments, especially in manufacturing and higher productivity services sectors. The evidence on the adverse effect of natural resources on FDI further underscores the importance of promoting foreign investments into productive non-resource sectors. The revenues generated from natural resources should be utilized into productive investments to attract higher quality FDI to the region. Ultimately, these measures would facilitate economic diversification, reduce vulnerability of natural resource rich countries to adverse external shocks and promote structural transformation. Additional policies to attract FDI should include the adoption and ratification of investment promotion treaties at the bilateral and/or regional level.

Because of limited data on intraregional FDI, the estimation strategy adopted here does not allow for the lagged effects of the variables of interest on bilateral FDI given also that the panel is unbalanced. This however does not compromise the reliability of the results. We consider important issues for future research. While the determinants of FDI were explored for both natural resource and non-resource rich countries, the issues were not analyzed at the sectoral level due to data unavailability. Future research should determine whether spatial interdependence matters for explaining sectoral composition of FDI in host African economies. Firm level analysis would also provide insightful findings on the patterns of intraregional investments in African economies.

Appendix 1: Description of variables

<i>Variable</i>	<i>Description</i>	<i>Source</i>
FDI –Dependent	Bilateral Inward FDI stock to host economies from source countries	UNCTAD (2014)
GDP	Gross domestic product (current US\$)	World Bank (WDI)
Relative labour costs	Difference in real GDP per capita between source and host countries (constant 2005 US\$).	WDI
Natural resources	Sum of fuel (% of merchandise exports) and ores and metals (% of merchandise exports); sum of oil rents (% of GDP) & mineral rents (% of GDP).	World Bank (WDI)
<i>Controls</i>		
Surrounding Market potential	$SMP_i = \sum_{j=1}^i \frac{GDP}{dist_{ij}}$ sum of inverse-distance-weighted real GDP per capita of host countries in sample, excluding host country.	WDI and CEPII (see Nwaogu & Ryan, 2014)
Control of corruption	Estimate- over the range -2.5 (weak) and 2.5 (strong) governance performance.	World Bank (Kauffman)
Trade cost	Inverse of trade openness	Own calculations using WDI data
Financial development	Domestic credit to the private sector by banks (% of GDP).	WDI
Infrastructure	Information, Communication and Technology (ICT) index	AfDB (2013)
Output cycle	Log difference between real GDP and its log-linear trend	Own calculations using WDI data (see Dabla-Norris et al, 2010)
Inflation	GDP deflator (annual %)	WDI
Agglomeration	Share of total inward FDI stock in GDP (%)	UNCTAD & WDI
Distance	Distance between cities weighted by the share of principal cities' population in total population.	CEPII
BIT	Dummy= 1 if bilateral investment treaty between source and host country entered into force, 0 otherwise.	UNCTAD
RTA	Dummy=1 if free trade agreement between host and source entered in force, or host belong to a customs union or an economic integration agreement, 0 otherwise.	WTO
Common official Language	Dummy=1 if host country shares common official language with either South Africa, Kenya or Nigeria, 0 otherwise.	CEPII
Landlocked	Dummy=1 if host country is landlocked, 0 otherwise.	CEPII
Internal armed conflict	Dummy=1 if armed conflict is internal, 0 otherwise.	UCDP Dyadic Dataset Version 1 (2014)

Appendix 2: List of countries

Source country sample
OECD -Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Ireland, Italy, Japan, Luxembourg, Netherlands, Norway, New Zealand, Portugal, Spain, Sweden, Switzerland, United Kingdom and United States of America.
Emerging Markets - Brazil, China, Cyprus, Hong Kong China, Croatia, India, Korea, Kuwait, Lebanon, Malaysia, Pakistan, Qatar, Russia, Saudi Arabia, Singapore, Turkey and United Arab Emirates.
Intraregional Economies - Angola, Burkina Faso, Botswana, Cameroon, Cote d'Ivoire, Democratic Republic of Congo, Egypt, Equatorial Guinea, Ethiopia, Gabon, Ghana, Kenya, Liberia, Libya, Madagascar, Mali, Morocco, Mauritius, Mozambique, Malawi, Namibia, Nigeria, Sudan, Senegal, Swaziland, Seychelles, Togo, Tanzania, Tunisia, Uganda, South Africa, Zambia and Zimbabwe.
Host country sample
Natural resource-rich -Algeria, Angola, Botswana, Cameroon, Central African Republic, Congo Republic, Democratic Republic of Congo, Chad, Equatorial Guinea, Gabon, Ghana, Guinea, Libya, Mauritania, Mozambique, Namibia, Niger, Nigeria, Sudan, Sierra Leone, Tanzania, South Africa, Zambia and Zimbabwe.
Non-resource rich -Burundi, Cote d'Ivoire, Comoros, Cape Verde, Djibouti, Egypt, Eritrea, Ethiopia, The Gambia, Kenya, Liberia, Lesotho, Morocco, Madagascar, Mauritius, Malawi, Senegal, Sao Tome and Principe, Swaziland, Seychelles, Tunisia and Uganda.

Appendix 3: Correlation matrix

3a: Intra-regional sample

	1	2	3	4	5	6	7	8	9
1. ln FDI	1								
2. ln GDP	0.21*	1							
3. Real GDPPC diff	-0.05	-0.20*	1						
4. Fuel ores & metals	-0.11*	0.34*	0.12*	1					
5. Oil & mineral rents	-0.19*	0.24*	0.04	0.68*	1				
6. Language	0.03	0.06*	-0.17*	-0.28*	-0.18*	1			
7. ln inflation	0.05	-0.01	0.10*	0.07*	-0.00	0.20*	1		
8. ln market potential	0.10*	0.40*	-0.59*	-0.10*	0.07*	0.18*	-0.23*	1	
9. Output cycle	0.16*	-0.05*	0.09*	0.05*	0.20*	-0.26*	-0.05*	-0.07*	1

3b: OECD sample

	1	2	3	4	5	6	7	8	9
1. ln FDI	1								
2. ln GDP	0.27*	1							
3. Real GDPPC diff	0.031	-0.04*	1						
4. Fuel ores & metals	-0.16*	0.40*	-0.04*	1					
5. Oil & mineral rents	-0.15*	0.21*	-0.10*	0.68*	1				
6. Language	0.10*	-0.05*	0.08*	-0.31*	-0.34*	1			
7. ln inflation	0.05*	0.05*	0.05*	0.02	-0.03	0.14*	1		
8. ln market potential	0.10*	0.31*	-0.19*	0.14*	0.44*	-0.06*	-0.17*	1	
9. Output cycle	0.12*	-0.06*	-0.16*	0.03	0.04*	-0.05*	-0.02	-0.03	1

3c: Emerging markets

	1	2	3	4	5	6	7	8	9
1. ln FDI	1								
2. ln GDP	0.17*	1							
3. Real GDPPC diff	-0.08*	0.05*	1						
4. Fuel ores & metals	-0.06*	0.42*	-0.06*	1					
5. Oil & mineral rents	-0.06*	0.20*	-0.13*	0.70*	1				
6. Language	-0.04	-0.06*	0.11*	-0.36*	-0.38*	1			
7. ln inflation	0.05*	0.07*	0.06*	0.033	-0.01	0.14*	1		
8. ln market potential	0.08*	0.33*	-0.19*	0.10*	0.37*	-0.012	-0.12*	1	
9. Output cycle	0.15*	-0.11*	-0.40*	-0.00	0.08*	-0.21*	-0.06*	-0.04	1

Note: ‘*’ denotes significant at 5%.

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