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FOREIGN DIRECT INVESTMENT INFLOWS TO SUB SAHARAN AFRICA: DO RESOURCE ENDOWMENT AND MARKET SIZE MATTER?

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ABSTRACT

The study examined whether resource endowment and market size of an economy are significant channels for Foreign Direct Investment (FDI) inflows to Sub Saharan Africa (SSA). It employed the System Generalized Method of Moments (SGMM) in analysing unbalanced panel data of 31 countries covering the period from 1996 to 2015. The primary findings indicate that both resource endowment and market size are significant channels in attracting FDI inflows to SSA. The comparative analysis between rich and poor resource countries confirms suggestive evidence of higher affinity in rich resource countries over poor resource countries in attracting FDI inflows. A similar finding is evident between large and small market size in which countries having large market size exhibit higher attractive level of FDI inflows. The finding implies that, host countries in SSA should make policies underpinning GDP growth including infrastructure development to enhance local market competitive capacity. Similarly, countries endowed with abundant natural resources should enact favourable laws and regulations in guiding effective use of these resources for their national benefits through resource promotion to attract significant FDI inflows.

***Keywords**: Foreign Direct Investment, Resource Endowment and Market Size.*

1.0 INTRODUCTION

Foreign direct investment (FDI) is a type cross boarder investment related with an entity in one country having control or substantial level of influence on the management of a business that is run in another country (World Bank, 2020). FDI inflows have been the most reliable source of funding in developing economies. Financial constraints faced by Sub Saharan African (SSA) countries have been a reason for heavy dependence on FDI as the best alternative source of funding (Anetor, Esho and Verhoef, 2020).

FDI is one of the very important sources of finance and highly needed by African countries for poverty reduction and economic development (Dinara, Iliyas, Zhaksylyk, and Talgat, 2020). It provides such countries with a paramount source of funding for development projects. FDI inflows are associated with transfer of advanced technology, management skills, promote capital formation and growth, diffusion of efficiency spill-overs, job creation and infrastructure development (Mottaleb and Kalirajan, 2010).

In realizing such benefits, many SSA countries devoted more efforts to attract FDI inflows. Sichei and Kinyondo (2012) pointed out the ways adopted by the countries to attract better FDI inflows. These include country regulatory frameworks such as friendly investment policy framework, schemes such as investment promotion bodies, export processing zones (EPZs) and signing of international investment agreements (IIAs).

Despite the efforts, recently SSA has recorded a declining share of global FDI from 5.1 per cent in 2009 to 3 per cent in 2012 as compared to 26.0 per cent for Asia and 11.9 per cent for Central and South America (Darley, 2012). When compared to GDP levels, this figure is far less because the regional share is just 2.44 per cent of global GDP (Juma, 2012). This is contrary to global FDI flows which have incredibly surged to $ 1.76 trillion in 2015, the highest flow ever marked since the global economic and financial crisis of 2009 (UNCTAD, 2016).

Resource endowment and market size are important endogenous factors in determining FDI inflows to recipient economy. However, in the light of FDI benefits, many studies have examined the effect of FDI on growth while few have examined the role of resource endowment and market size as determinants of FDI. This paper fills the void by exclusively investigating the role of resource endowment and market size on inward FDI to SSA given a phenomenon of declining pattern in global share of FDI in the region. The study contributes to the existing literature by employing the System Generalized Methods of Moments (SGMM) to analyse a panel data of 31 SSA countries from 1996 to 2015. This technique enriches the existing body of knowledge with a new, plausible and appropriate insight by capturing the dynamic property of panel data through the SGMM technique that provides the most efficient estimates of all instrumental variables (IV)

econometric strategies. This technique strongly addresses endogeneity issue which may result into bias estimates when not taken into account.

Revealing the empirical evidence on the impact of resource endowments and market size as the key channels in attracting FDI will help SSA policy makers to make appropriate policies on the effective use of resource endowments and market size to effectively drive in FDI for the better realization of significant global FDI share and economic development of SSA member countries.

2.0 LITERATURE REVIEW

2.1 Overview of FDI Inflows in SSA

Most of SSA countries got independence around 1960s, immediately after this period the SSA member countries were characterised by closed economies with the intent of completely getting rid of colonialism. They adopted nationalism policies to ensure self-economic reliance which prevented them from foreign resources dependence (Juma, 2012). In Tanzania, for example, the self-reliance policy was enforced in 1967 by Arusha Declaration (Biersteker, 1980). A similar practice took place in Nigeria in 1972 where the Nigerian Enterprises Promotion Decree was enunciated which called for communal resource ownership discouraging foreign association in most of the economy aspects (Babatunde, Oyeniran, David, and Ibrahim, 2013). The like practices were enforced by other SSA countries including Kenya, Ghana, Uganda, Zimbabwe and Zambia (Ndongko, 1980). Finally, all these ended up by member countries of SSA realizing low levels of FDI inflows across the region between 1970s and 1980s.

In realising the adverse effects of closed economy, SSA countries gradually relaxed their external trade barriers between 1980s and 1990s (UNCTAD, 1998). As a result, from 1990s onwards FDI inflows level was scaling up in many countries. In order to accelerate the pace of FDI inflows some countries, for instance Uganda in 1991, Tanzania in 1997 and Nigeria in 1995 established investment promotion agencies (RU, 2015; UNCTAD, 2011 and Juma, 2012).

In turn, as explained by Asiedu (2002) from 1980 to 1998, FDI inflows to SSA grew by only 59 per cent. However, the global regional comparison indicates that, SSA was the lowest growing FDI region as compared to Latin America and South Asia, Pacific and East Asia, Central Asia and Europe that grew by 455, 740, 942 and 5,200 per cent respectively.

In 2001, the Partnership for Africa's Development (NEPAD) was formed by heads of member states. One of the main objectives was to reduce poverty by half and increase GDP growth rate to 7 per cent as postulated in International Development Goals. In order to realize this, NEPAD declared that, the high rising in demand for financial resources should be obtained from outside the region in the form of FDI Inflows (NEPAD, 2001). It is true that NEPAD target is one of the key factors which accelerated the pace of FDI inflows to SSA experienced in the 2000s. Another reason is the increase in commodity prices, for example in 2005 the oil prices rose to US$ 60 per drum in Nigeria and Angola, at this time both countries experienced the increase in FDI inflows of more than US$10 billion (Asiedu, 2006).

The substantial inflow of SSA FDI was remarkable between 2001 and 2010. In the second half of the decade on average, SSA experienced more than twice inflows of US$ 30.3 billion as compared to US$ 14.9 billion in the first half. In line with this, per capita FDI moved in the same pace from US$ 20.60 in the first half to US$ 37.04 in the second half which is also comparable twice as much (Kamara, 2013). However, Asiedu (2013) asserts that, the total stock from FDI inward projects in SSA scaled up from US$ 29.8 billion in 1980 to US$ 317.2 billion in 2009 which is yet a relatively small increase.

In 2010 the total FDI inflow to SSA was $ 38.1 billion, where this was apportioned as 9, 30, 40 and 21 per cent of total FDI to Eastern, Western, Southern and Central African sub regions respectively. The two main FDI recipients were South Africa and Namibia while FDI inflows dropped by 24 per cent in Southern Africa. South Africa experienced the decrease by over 70 per cent, equivalent to 17 per cent of the highest inflow in 2008. In Angola, inflows dropped by 15 per cent. One of the main issues in Angola was that, oil production was more than its OPEC quota. In the region, oil and gas Transmission Network Codes (TNCs) were divesting their downstream businesses (UNCTAD, 2011).

In 2015, weak commodity prices faced by SSA resulted into the decline in FDI inflows. In West Africa FDI inflows declined by 18 percent mainly contributed by heavy fall in Nigerian investment emanating from currency depreciation. In the same move, the inflows in central Africa sub region dropped by 36 per cent, in Congo for example the inflows dropped from the highest level of US$ 5.5 billion recorded in 2004 to US$ 1.5 billion in 2015. In Eastern Africa the records varied across countries, in Kenya for example inflows increased to US$ 1.4 billion in 2015. This emanated from confidence created to investors by the better investment climate and favourable consumer market. Contrary to Kenya, in Tanzania the inflows fell by 25 per cent. In Southern Africa sub region, the inflows rose by 2 percent. This resulted from huge inflows

recorded by Angola which is the largest FDI recipient in the region (UNCTAD, 2016). Figure 1 provides a pictorial presentation of FDI inflows trend by sub region in SSA from 2009 to 2015.

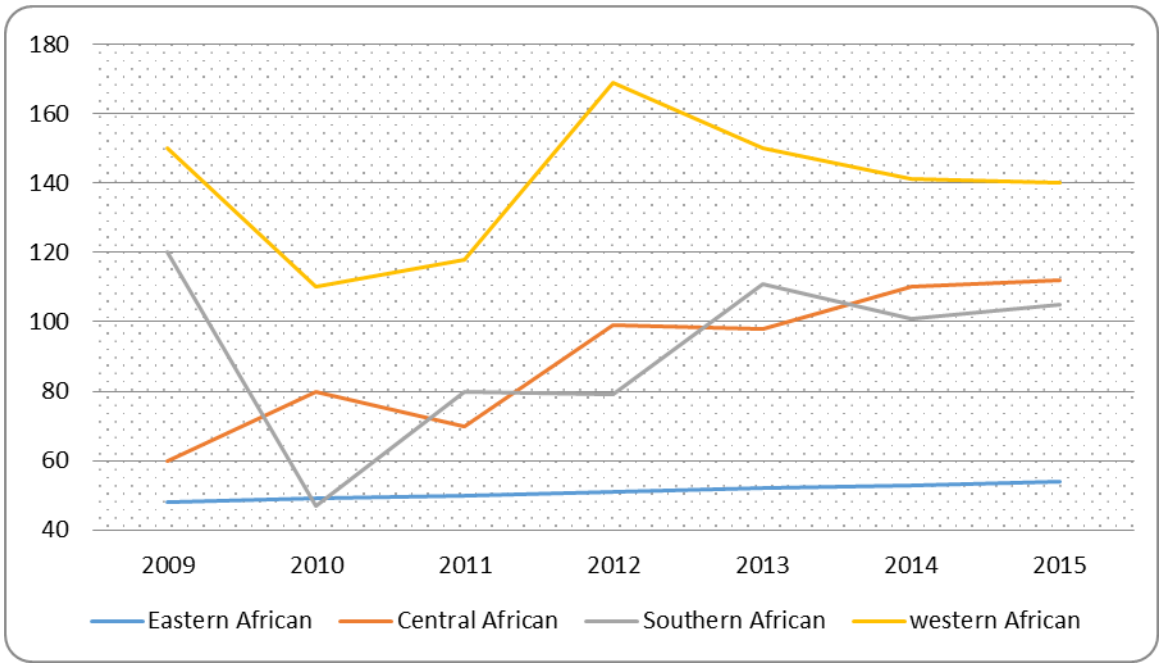

Figure 1: Trend of FDI Inflows in SSA by Sub Region from 2009 to 2015 (in '0' US$ Billion)
Source: UNECA (2016)

2.2 Theoretical Review

Sichei and Kinyondo (2012) classified three types of FDI, the first one is horizontal or market seeking FDI in which investor's interest is in domestic market driven by market magnitude and expansion. The next type is resource seeking FDI in which natural resources located at specific location drive the demand of foreign firms to acquire cheap supply of resources hence FDI inflows to such locality. The last type is efficiency seeking FDI, this occurs when firms want to exploit the foreign economy's means of production through economic integration or wishes to enjoy the cost effective production from another economy.

Electric theory also known as OLI Framework developed by Dunning's (1988) provides basic factors underlying FDI inflows to host countries. From the theory, one of the factors is possession advantage including ownership of production means by host countries which provides a host country a gear to drive in FDI. Another factor is location favour where resource endowments including low wages and special taxes are considered an advantage in attracting FDI to the host country. International linkages is also explained as another factor which opens door for firms to decide on how to partner with foreign economy investment, for example partnership through licensing or franchise (Bilgili, Sevil, Tülüce and Dogan, 2012).

Economies characterised by resource endowment, viable markets, and favourable infrastructure are in better position to attract FDI. However, such factors work differently in different economies (Kahouli and Maktouf, 2015). The increase in domestic market size of the host country may trigger efficient use of natural resources to capture economies of scale advantage. This will attract more FDI inflows to host country (Bilgili *et al.*, 2012).

Boateng, Hua, Shaista and Wu (2015) argue that in the 1990s the macroeconomic policies controlled by the domestic governments play a crucial role as decision making factors applied by Global Multinational Enterprises (MNEs) in investment perspective. ESE (2001) indicates that FDI inflows heavily rely on economic framework including appropriate macroeconomic policies, political stability, market growth and resource endowments. Buckley, Clegg, Cross, Xin, Voss, and Ping (2007) declare that, inflation rate is a proxy for macroeconomic stability determined by government policy as controller. Boateng *et al.* (2015) claim that, high inflation rate deteriorates domestic currency real value to attract FDI. In turn, low inflation rate reflects stable economy that attracts more foreign firms' interest to invest in host domestic economy.

According to Umer and Alam (2013) openness to trade is one of macroeconomic policies that encourage international business linkage of the country's trade operations worldwide and opens up gates across borders to the rest of the world.

2.3 Conceptual Framework

Figure 1 depicts the conceptual model interlinking the functioning of the key variables of this study with other important factors in the economy. Effective macroeconomic policies including interest rate control, fiscal policy, openness to trade and monetary policy developed by the host country's regime have multiple effects to the economy. Favourable interest rates enhance domestic private investments through financial institutions borrowing. Infrastructure development including roads, railway and construction of Export Processing Zones (EPZ) results from expansionary fiscal policy exercised by the regime. Domestic investment is also a result of effectiveness in country natural resource utilization geared by appropriate policies. Stable economy characterized by good commodity prices, strong currency, market size and GDP growth is determined by low inflation rate supported by appropriate inflationary policy. This type of economy has high potential to attract FDI inflows by opening up international boarders through relevant schemes such as licencing and franchise in MNEs.

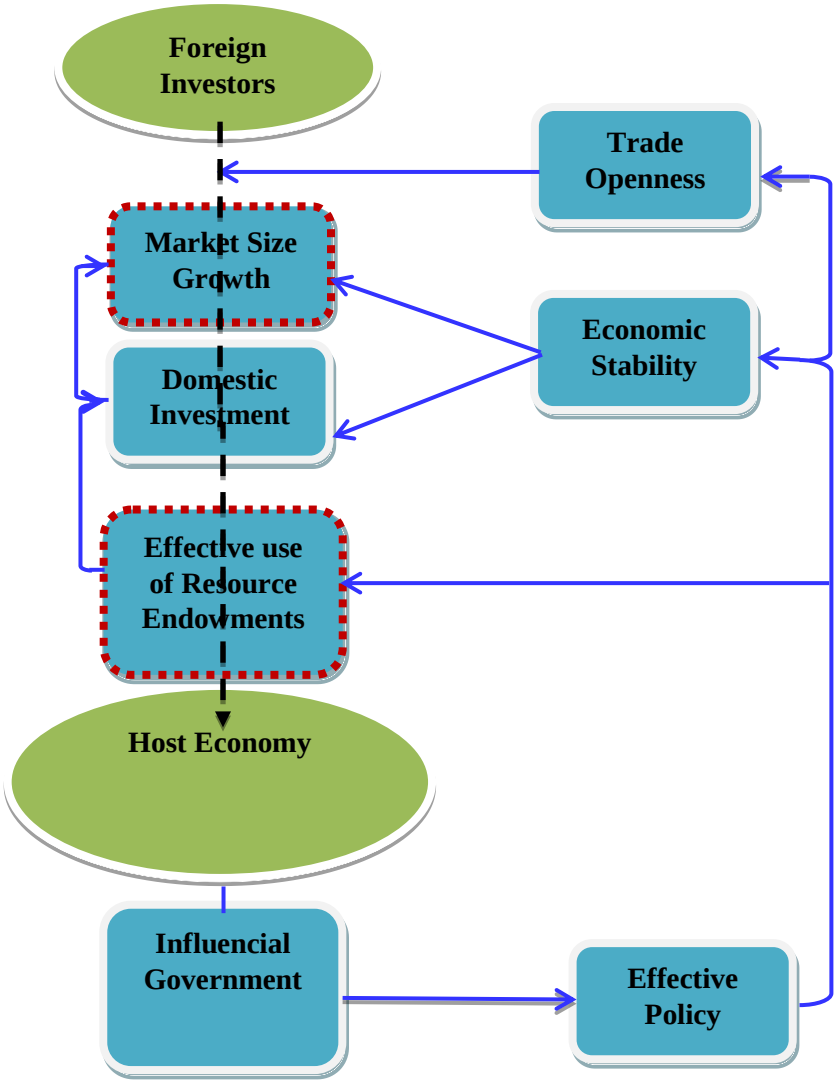

Figure 1: Conceptual Model

Legend: denotes leads to, denotes FDI inflows; denotes variables under study

Source: Researcher's Own Construction

2.4 Relevant Empirical Review

The literature review presented hereunder provides a synopsis of recent similar studies carried out from different economies to examine various determinants of FDI including natural resources and market size.

Asiedu (2006) explored the role of natural resources, market size, government policy, institutions and political instability in Africa using panel data analysis from 1984 to 2000. She used Fixed Effects econometric strategy and found that, large market size, natural resource, low inflation and efficient legal system have positive effect in attracting FDI to African countries.

Poelhekke and Van der Ploeg (2010) in the Netherlands employed cross country estimation model on firm level data to investigate the role of natural resources on FDI. They find that natural resources drive in FDI in the Netherlands.

Ba-Huyen (2014) researched on main factors affecting FDI inflow in Thanh Hoa province, Vietnam by analysing MNEs cross sectional primary data using OLS technique. He revealed that natural resources, infrastructure development, and financial factors have influence to attract FDI.

Rashid and Razak (2016) examined the effect of FDI determinants in agriculture sector from the World developing countries using provincial panel data analysis. They applied Pooled Ordinary Least Square (POLS), Random Effects (RE) and Fixed Effects (FE) models covering the period from 2003 to 2012. They realized that large market size, infrastructure development, favourable policies and low inflation rate exert positive significant impact on FDI inflow to agriculture sector.

Hayat (2014) used Arellano and Bond GMM estimation on time series data from developing countries for the period 1996 to 2015, to investigate the effect of FDI inflows on economic growth and the effect of natural resource on the FDI inflows. The paper found a positive relationship between FDI inflows on economic growth of the recipient country that changes with the changes in the level of natural resource endowment.

Bilgili *et al.* (2012) analysed the determinants of FDI in Turkey using a Markov Regime Switching approach. Specifically they applied state space model (SSM) on quarterly time series data from the first quarter of 1988 to the second quarter of 2010. They found that FDI growth is positively correlated with market size growth.

Kahouli, and Maktouf (2015) investigated on the determinants of FDI and the impact of the economic crisis. They employed a static and dynamic gravity model on 14 investment partners and 39 host countries for the period from 1990 to 2011. They found that market size and openness to trade were positive and significant implying the two have positive effect to FDI inflow.

Hussain and Hussain (2016) researched on the determinants of FDI flows in Pakistan and China. They used autoregressive distributed lag models (ARDL) on yearly time series data from 1980 to 2014. They found that China's market size has positive and significant impact on FDI inflows in Pakistan.

In aforementioned literature few studies investigated the role of natural resource endowment and market size as key endogenous determinants of inward FDI particularly in SSA. As pointed out in the literature, only Asiedu (2006) carried out a similar study in Africa. However, in her study she employed Fixed Effects (FE) analysis on static panel data estimation which does not account for endogeneity problem. This paper therefore, fills the void by providing a reliable investigation on the role of natural resource endowments and market size as key endogenous determinants of inward FDI to SSA. Unlike the study by Asiedu (2006), this study captures a dynamic property of panel data and accounts for endogeneity problem. The exposition is based on the SGMM, the most powerful dynamic panel data estimator that yields efficient estimates of all GMM econometric strategies (Blundell and Bond, 1998).

3.0 METHODOLOGY AND DATA

3.1 Theoretical Framework

The approach used in the study is based on exposition of Blundell and Bond (1998) on the SGMM dynamic panel data estimation. The approach is a reliable econometric strategy used in panel data estimation due to the following advantages over other techniques; First, the approach gives advantage of accommodating the whole panel of dataset, therefore unobserved fixed effects of specific entities can be captured to provide actual estimates of the pertinent variables in the model (Hsiao, 1986). Second, other panel data estimation such as Pooled Ordinary Least Square and the Fixed Effects do not account for endogeneity problem Arellano and Bond (1991). Although the first difference GMM estimation of Arellano

and Bond (1991) accounts for omitted unobservable effects and endogeneity problem it does not account for weak instrument issues which are addressed by the SGMM (Blundell and Bond, 1998).
Consider the following equation;

$$y_{it} = \beta_1 y_{it-1} + \beta_2 J_{it} + \beta_3 \boldsymbol{X}_{it} + \underbrace{\gamma_i + U_{it}}_{Z_{it}} \quad (1)$$

Where y is dependent variable, y_{t-1} is lagged dependent variable (serves as instrumental variable), J is a treatment explanatory variable under, $\boldsymbol{X}$ stands for a vector of other control variables, β is coefficient of respective variable. U stands for error term, γ entity specific effect which is time invariant, while i and t show entity and time respectively. Z_{it} denotes the sum of unobservable and observable effect.

To address the issue of unobservable entity specific effect which is time invariant the First difference is carried out to make the following differenced equation;

$$\Delta y_{it} = \beta_1 \Delta y_{it-1} + \beta_2 \Delta J_{it} + \beta_3 \Delta \boldsymbol{X}_{it} + \Delta \gamma_i + \Delta U_{it} \quad (2)$$

Thus;

$$y_{it} - y_{it-1} = \beta_1 (y_{it-1} - y_{it-2}) + \beta_2 (J_{it} - J_{it-1}) + \beta_3 (\boldsymbol{X}_{it} - (\boldsymbol{X}_{it-1}) + (\gamma_i - \gamma_i) + (U_{it} - U_{it}) \quad (3)$$

Since unobservable entity specific effect (γ) is time invariant it is eliminated through this transformation and finally we have;

$$y_{it} - y_{it-1} = \beta_1 (y_{it-1} - y_{it-2}) + \beta_2 (J_{it} - J_{it-1}) + \beta_3 (\boldsymbol{X}_{it} - \boldsymbol{X}_{it-1}) + (U_{it} - U_{it-1}) \quad (4)$$

However, the resultant equation cannot be estimated using OLS since y_{it-1} and $(U_{it,} U_{it-1})$ are now correlated (endogeneity problem), thus OLS estimates β_1 is inconsistence and biased even if period T is infinitely large. The appropriate estimation of this equation is differenced GMM estimator; however, the same suffers from weak instruments (Blundell and Bond, 1998). Therefore, the SGMM which accounts for weak instruments issue is inevitable under the following assumptions;

1. Standard structure for the error term applies and thus initial moment condition y_{it} is predetermined, that is, $E[y_{it}, U_{it}] = 0$ for $i = 1....N$ *and* $t = 3...T$.
2. We assume that the core independent variables in the model (in this case natural resource and market size) are endogenous.
3. Further assumption is that $E[\gamma_i \Delta y_{it}] = 0$, $E[\gamma_i \Delta J_{it}] = 0$, $E[\gamma_i \Delta X_{it}] = 0$ for $i = 1,..,N$. Collectively the following set of additional moment conditions are customized for the SGMM set up:

$$\begin{aligned} E\,[Z_{it} \Delta y_{it-1}] &= 0 \quad \text{for } t = 3,..., T, \text{ and } i = 1,..,N, \\ E\,[Z_{it} \Delta J_{it-1}] &= 0 \quad \text{for } t = 3,..., T, \text{ and } i = 1,..,N, \\ E\,[Z_{it} \Delta \boldsymbol{X}_{it-1}] &= 0 \quad \text{for } t = 3,..., T, \text{ and } i = 1,..,N. \end{aligned} \quad (5)$$

The study used unbalanced panel data from 1996 to 2015 to empirically explore the impact of resource endowment and market size on FDI inflows to 31 SSA countries. This period was selected because it is rich in data because it is the period in which most countries in SSA received significant amounts of FDI inflows. Partly, this emanates from privatization strategy adopted by some countries in the 1990s which attracted enormous amount FDI inflows (Nellis, 2006). The list of countries included in the sample is indicated in Table 1.

Table1.1: List of SSA Countries in the Sample

S.N	COUNTRY	S.N	COUNTRY	S.N	COUNTRY
1	Benin	!2	Guinea-Bissau	23	Seychelles
2	Botswana	13	Kenya	24	Sierra Leone
3	Burkina Faso	14	Madagascar	25	South Africa
4	Cabo Verde	15	Malawi	26	Swaziland
5	Cameroon	16	Mali	27	Tanzania
6	Central African Republic	17	Mozambique	28	Togo
7	Chad	18	Namibia	29	Uganda
8	Cote d'Ivoire	19	Niger	30	Zambia
9	Equatorial Guinea	20	Nigeria	31	Zimbabwe
10	Gabon	21	Rwanda		
11	Ghana	22	Senegal		

A total of 620 observations were captured by the sample over this period after data cleaning. During data management 35 observations were winsorized as outliers equivalent to 5%. Thus, the remaining 585 observations were used for regression analyses. The data set employed for the study was accessed from World Development Indicators (WDI) free download online source[1] published in 2017. The following are the variables used to examine the impact of resource endowment and market size on FDI inflows in SSA.

i. Dependent Variable

The dependent variable used in the study is FDI net inflows as percentage of GDP which was regressed on the following explanatory variables.

ii. Treatment Variables

The study used total reserve of minerals (in current USD) as proxy for resource endowment denoted as *RES*. To assess the size of individual country market size, real GDP (in USD) was employed as market size proxy expressed as *MKT*.

iii. Control Variables

Government expenditure *GEXP* as percentage of GDP and Gross Capital Formation proxy for local investment *LINV* as percentage of GDP were included as control variables. Additionally, the annual inflation rate in percentage *INF* and trade[2] as percentage of GDP denoted as *POL* were used as proxy for macroeconomic stability and the degree of openness to FDI respectively.

3.2 Estimation Model

Based on aforementioned theoretical framework, the following estimation model was developed;

$$FDI_{it} = \beta_1 FDI_{it-1} + \beta_2(J)_{it} + \beta_3 \boldsymbol{X}_{it} + \sigma_i + U_{it} \quad (6)$$

Where; *FDI* = foreign direct investment as percentage of GDP,

FDI_{it-1} = predetermined instrumental variable of lagged FDI,

J = is a set of treatment variables (resource endowment and host country's domestic market size defined as real GDP),

X = a vector of control variables including inflation, trade openness, government expenditure, local investment and other instrumental variables.

β_0 is constant term, B_i*'s* are coefficients to be estimated, U_{it} is error term, while σ, $_i$ and $_t$ represent country fixed effect, nth observation and time respectively.

4.0 Empirical Results

In order to provide intensive investigation on the effect of natural resource endowment and market size on FDI inflows to SSA, three steps of analysis were carried out using the SGMM. The first one was to estimate the overall effect of natural resource endowment and market size on FDI. The second one was to investigate the effect of natural resources on FDI

[1] The source is www.worldbank.org/datacatalog/wdi.

[2] Trade is the sum of export and imports of particular country

inflows based on resource poor and resource rich countries. Lastly, the effect of market size on FDI inflows was investigated based on division of countries on large and small market sizes.

4.1 Baseline Results

In this step, the focus was given to the core variables which are *MKT* and *RES*, Thus, FDI was regressed on *RES* and *MKT*. To account for omitted variables bias, the study controlled for *INF*, *OPP*, *GEXP* and *LINV* whose effects are fixed as proxy for the effect of any other effective variable not captured in the model. The dynamic property of panel data is indicated by the FDI lagged once (FDI_{it-1}) which included in the model as predetermined explanatory variable. Time invariant fixed effects of each country are eliminated by the first difference to allow for country heterogeneity effect.

However, the variable (FDI_{it-1}) is correlated with error term $U_{it-1.}$ *(endogeneity problem*) which violates the OLS finite sample properties, therefore the system GMM estimator (which bears strong instrumental variables) developed by samples Blundell and Bond (1998) becomes suitable panel data estimation strategy that provides the most efficient estimates in compliance with the finite sample properties over all other GMM estimation techniques (Blundell and Bond, 1998). Additionally, it is assumed that *INF* and *OPP* are endogenous variables. In order to effectively address endogeneity three more variables $INF_{it-1,}$ OPP_{it-1} and MKT_{t-1} are created as instrumental variables while other variables remain instruments by themselves. The results are presented in Table 1.2. The key finding indicates strong evidence that both *MKT and RES* variables have significant and positive effect to FDI inflows to SSA. The coefficients of *RES* are positive and statistically significant at one per cent significance level throughout all estimation models. Similarly, *MKT* coefficients are consistently positive and statistically significant at five per cent significance level throughout all estimation models. Overall, it shows that natural resource endowment and market size are both key endogenous determinants in attracting FDI inflows to SSA.

Table 1.2: Baseline Results

	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	FDI	FDI	FDI	FDI	FDI	FDI
FDI_{t-1}	-0.0640***	-0.0556**	-0.0557**	-0.0558**	-0.0559**	-0.0525**
	(0.023)	(0.024)	(0.024)	(0.024)	(0.025)	(0.025)
RES	11.9455***	12.5761***	12.7550***	12.8476***	12.9181***	12.6943***
	(1.813)	(1.875)	(1.904)	(1.931)	(1.957)	(2.003)
MKT	3.9902**	4.0115**	4.1346**	4.2316**	4.2015**	4.3878***
	(1.580)	(1.590)	(1.617)	(1.651)	(1.671)	(1.700)
MKT_{t-1}	0.3186***	0.3309***	0.3299***	0.3286***	0.3278***	0.3329***
	(0.023)	(0.025)	(0.025)	(0.025)	(0.026)	(0.026)
POL	-8.3828***	-10.0860***	-10.2234***	-10.2639***	-10.1993***	-10.7083***
	(1.699)	(1.811)	(1.842)	(1.865)	(1.881)	(1.918)
POL_{t-1}	-0.0541	-0.0458	-0.0446	-0.0457	-0.0455	-0.0507
	(0.035)	(0.036)	(0.036)	(0.037)	(0.037)	(0.038)
INF	0.0205	0.0295	0.0281	0.0262	0.0267	0.0251
	(0.032)	(0.032)	(0.032)	(0.033)	(0.033)	(0.034)
INF_{t-1}	4.1734**	4.3525***	4.5075***	4.6106***	4.6291***	4.6945***
	(1.653)	(1.665)	(1.695)	(1.727)	(1.749)	(1.773)
LI	1.2023***	1.0691***	1.0660***	1.0660***	1.0705***	1.1190***
	(0.369)	(0.360)	(0.364)	(0.369)	(0.374)	(0.374)
GCON	0.2858***	0.2740***	0.2749***	0.2760***	0.2768***	0.2759***
	(0.021)	(0.021)	(0.022)	(0.022)	(0.022)	(0.022)
CONS	-71.0235***	-66.8611***	-67.7072***	-68.0895***	-69.8120***	-64.9662***
	(10.018)	(10.216)	(10.547)	(10.592)	(10.601)	(10.897)
Observations	429	419	410	400	391	381

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

4.2 Robustness Checks

4.2.1 Resource Endowment

In this step, the focus was given to the core variable *RES*, based on countries defined as rich and poor resource countries. Rich resource countries are those endowed with abundant natural resources above threshold level set up by IMF. According to IMF (2013) there are 20 countries in Sub-Saharan Africa identified as resource-rich countries of which this study includes 14[3] countries. This classification is based on 25 per cent of natural resource of the total exports as threshold

[3] The sample includes Botswana, Cameroon, Central African Republic, Chad, Equatorial Guinea, Ghana,

value set by IMF. The rule of thumb is that all countries attaining this value and above are considered as resource rich countries. The remaining 17 in the sample are countries recording less than 25 per cent threshold value of natural resource of the total exports which are considered as resource poor countries[4]. In both cases *FDI* is regressed on *RES* controlling for *INF, OPP, GEXP and LINV* while FDI_{t-1}, INF_{t-1} *and* POL_{t-1} are instrumental variables. The results are presented in Table 1.3.

Table1.3: Resource Endowment

Variables	(1)	(2)	(3)	(4)	(5)	(6)
	Resource Rich			Resource Poor		
FDIt-1	0.1542***	0.1542***	0.1541***	0.6729***	0.6579***	0.6439***
	(0.033)	(0.033)	(0.031)	(0.066)	(0.068)	(0.069)
RES	1.0022**	1.0022**	0.9023**	0.5567**	0.6231**	0.6181**
	(0.444)	(0.444)	(0.427)	(0.245)	(0.252)	(0.269)
INF	0.0345	0.0345	0.0234	0.0207	0.0196	0.0177
	(0.044)	(0.044)	(0.040)	(0.032)	(0.033)	(0.033)
INFt-1	-0.0257	-0.0257	-0.0120	-0.0427	-0.0428	-0.0404
	(0.052)	(0.052)	(0.040)	(0.029)	(0.030)	(0.030)
POL	0.1537***	0.1537***	0.1685***	0.0115	0.0120	0.0155
	(0.026)	(0.026)	(0.024)	(0.024)	(0.024)	(0.024)
POLt-1	-0.2318***	-0.2318***	-0.2315***	0.0300	0.0289	0.0265
	(0.017)	(0.017)	(0.016)	(0.023)	(0.023)	(0.023)
LI	0.4627***	0.4627***	0.4224***	0.0836**	0.0993**	0.1181***
	(0.049)	(0.049)	(0.044)	(0.040)	(0.041)	(0.043)
GEXP	0.0757***	0.0757***	0.0783***	-2.5117***	-2.4764***	-2.4417***
	(0.026)	(0.026)	(0.024)	(0.257)	(0.262)	(0.263)
CONS	-0.9479	-0.9479	2.9803	-1.3915	-3.0942	-3.3957
	(10.711)	(10.711)	(10.038)	(5.502)	(5.709)	(5.953)
Observations	255	265	292	258	248	239

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

The first three columns in Table 1.3 present resource rich countries. The coefficient estimates of the primary variable *RES* presented in the second row are positive and statistically significant at five per cent significance level throughout all three estimations. This implies that in resource rich countries, resource endowment is one of the key factors in attracting FDI inflows. The possible reasons could be the attractive favourable investment climate underpinned by abundant natural resources endowed by these countries highly demanded by external investors as factor inputs in manufacturing sector. Availability of adequate resources attracts foreign countries in search of affordable resources for appropriate investments (Sichei and Kinyondo, 2012).

The resource poor countries are represented by column four to six in Table 1.3 in which the key variable *RES* is presented in the second row. Similarly, in resource poor countries the coefficient estimates of *RES* are positive and statistically significant at five per cent significance level throughout all three estimations. This implies that even in resource poor countries, resource endowment is one of the key factors in attracting FDI inflows. The findings substantiate with the previous findings of the baseline model verifying consistency of the finding that natural resource endowment is the key channel in FDI inflows to SSA. However, the coefficient estimates of the poor resource countries exhibit lower magnitudes (0.5567, 0.6231 and 0.6181) which are almost a half way compared to the ones in rich resource countries (1.0022 and 0.9023). This implies that, although both segments enjoy the advantage of natural resource channel in FDI inflows, poor resource countries experience a significantly lower level of FDI inflows compared to countries rich in natural resource endowment.

4.2.2 Market Size

This section presents results based on countries having large and small market sizes. A sub sample of large market size is represented by countries recording on average the real GDP value above the sample mean real GDP value of USD

Mali, Namibia, Niger, Nigeria, South Africa, Tanzania, Zambia and Zimbabwe.

[4] The sample includes Benin, Burkina Faso, Cabo Verde, Cote d'Ivoire, Gabon, Guinea-Bissau, Kenya, Madagascar, Malawi, Mozambique, Rwanda, Seychelles, Senegal, Sierra Leone, Swaziland, Togo and Uganda

5.07e+09 consisting of nine[5] countries. A sub sample of small market size is represented by countries recording on average the real GDP value below the sample mean real GDP value of USD 5.07e+09 consisting of 22[6] countries. The first three columns in Table 1.4 present the results of large market countries where the variable of interest is *MKT* presented in the second row which indicates positive and statistically significant estimates at one per cent significance level throughout all three estimations. The results imply that, large market size exhibit a positive effect in attracting FDI inflows to host countries in SSA. The small market sample is presented by column four to six in Table 1.4 in which the key variable *MKT* is presented in the second row. Similarly, in small market size the coefficient estimates of *MKT* are positive and statistically significant at five per cent significance level throughout all three estimations. This implies that even in small market countries, market size is one of the key factors in attracting FDI inflows. The finding substantiate with the previous finding of the baseline model verifying that, market size is the key channel in FDI inflows to SSA. However, the coefficients magnitudes of large and small market size are non-symmetrical where those of large market size sample is far higher (2.5837, 2.4955 and 2.4766) compared to the ones in small market size (0.2910, 0.2936 and 0.3172). This implies that, although both countries enjoy the advantage of market channel in FDI inflows, countries exhibiting small market size experience a significantly lower level of FDI inflows compared to countries having large market size.

Table1.4: Market Size

Variables	(1)	(2)	(3)	(4)	(5)	(6)
	Large Market			Small Market		
FDIt-1	0.1277***	0.1282***	0.1371***	0.6226***	0.6285***	0.6529***
	(0.026)	(0.026)	(0.026)	(0.063)	(0.064)	(0.066)
MKT	2.5837***	2.4955***	2.4766***	0.2910**	0.2936**	0.3172**
	(0.642)	(0.649)	(0.644)	(0.145)	(0.146)	(0.159)
INF	0.0224	0.0239	0.0255	-0.0392**	-0.0382**	-0.0463***
	(0.031)	(0.031)	(0.031)	(0.018)	(0.018)	(0.018)
INFt-1	-0.0121	-0.0099	-0.0076	0.0122	0.0128	0.0176
	(0.029)	(0.029)	(0.029)	(0.013)	(0.013)	(0.013)
POL	0.1337***	0.1367***	0.1391***	0.0066	0.0065	0.0076
	(0.016)	(0.016)	(0.016)	(0.013)	(0.013)	(0.014)
POLt-1	-0.1157***	-0.1168***	-0.1204***	-0.0116	-0.0062	-0.0104
	(0.012)	(0.012)	(0.012)	(0.013)	(0.013)	(0.014)
LI	0.2748***	0.2730***	0.2749***	-0.0416	-0.0409	-0.0283
	(0.026)	(0.026)	(0.026)	(0.030)	(0.029)	(0.029)
GCON	-0.8089***	-0.7883***	-0.8062***	0.0803***	0.0683***	0.0727***
	(0.212)	(0.211)	(0.209)	(0.023)	(0.023)	(0.023)
CONS	4.9622	2.7174	2.1091	-11.7609***	-11.2172**	-12.1606**
	(8.657)	(8.668)	(8.643)	(4.534)	(4.567)	(4.800)
Observations	123	114	104	405	396	386

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

5.0 CONCLUSION AND POLICY IMPLICATIONS

This paper attempts to answer the question whether resource endowment and market size matter as channels for FDI inflows to SSA by using the SGMM econometric technique not previously used in similar studies. The results reveal that effective use of natural resource and large domestic markets are the key factors in attracting FDI inflows to SSA. These findings are substantiated with the previous findings of Asiedu (2006) and consistent to the findings of Boateng *et al.* (2015).

A comparable analysis indicates that rich resource countries have higher potential in attracting higher level of FDI inflows relative to poor resource countries. The higher affinity of these countries could be due to resource seeking behaviour of overseas investors which rest on countries which are resource abundant. The findings indicate that countries possessing large markets have higher potential of FDI inflows relative to those having small market size. The probable reason could be favourable investment climate enjoyed by these countries through market opportunities providing high attraction to external investors in the potential investment opportunities.

[5] The sample includes Cameroon, Cote d'Ivoire, Equatorial Guinea, Ghana, Kenya, Nigeria, South Africa and Tanzania

[6] The sample includes Benin, Botswana, Burkina Faso, Cabo Verde, Central African Republic, Chad, Gabon, Guinea-Bissau, Madagascar, Malawi, Mali, Mozambique, Namibia, Niger, Rwanda, Senegal, Seychelles, Sierra Leone, Swaziland, Togo, Uganda, Zambia and Zimbabwe

Thus, even small countries in SSA can positively drive in FDI by improving resource use and market growth to the optimal level. The importance of large market size to FDI inflows implies that, individual host countries should make policies which may increase investment promotion and diversification of their investment opportunities in order to attract more investors from outside. One way to do this is through policies fostering infrastructure development such as communication, transportation, energy, water systems and GDP growth to enhance local market competitive capacity. Countries endowed with significant level of natural resources should enact favourable laws and regulations in guiding effective use of these resources for national benefits through resource promotion to attract significant FDI inflows.

The research area remaining for future study is to examine whether FDI inflows crowds-in, crowds-out or has neutral effect to local investment in SSA. This will help policy makers to come up with friendly policy to counteract the effects for the balanced economies of scale.

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