FDI-GROWTH NEXUS IN AFRICA: DOES GOVERNANCE MATTER?

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This study examined the effects of governance on FDI-growth nexus in Africa both at the aggregated and disaggregated level. It adopted the methodology of panel data technique to examine the interrelationship. The results showed that governance in many African countries was quite weak and thus inhibited growth. When governance was interacted with FDI, it brought about positive and increased growth. This finding was robust to different estimation techniques and disaggregated governance dimensions. The paper suggested that African governments that are desirous of attracting more FDI and thus improving on growth must enhance their governance structure.

Keywords: Foreign Direct Investment, Growth, Governance, Panel Data, Africa
JEL classification: C33, F21, O55

1. INTRODUCTION

The role of Foreign Direct Investment (FDI) as a source of capital has become increasingly important to many emerging countries in the world and Sub-Saharan Africa (SSA) countries in particular. FDI inflow has been critical because of its potential and actual benefits to growth, employment generation, technological know-how, enhanced efficiency and competitiveness, supplements to domestic savings and integration into the global economy (Asiedu, 2002). In the developing world, FDI has become the most stable and largest component of capital flows. Consequently, FDI has become an important alternative in the development finance process (Global Development Finance, 2005; Adams, 2009a&b) and a major tool in promoting economic growth in developing countries. Largely, most of SSA do not have access to international capital markets and have to rely on other forms of finance such as FDI and official loans from multilateral organizations. It is therefore imperative for SSA to increase its share of FDI in order to compensate for the decline in other forms of financial assistance in its effort to promote growth in the region (Asiedu, 2002; Mengistu and Adams, 2007).

Though many researchers allude to the importance of FDI in the move towards

economic growth, in recent times, the discussion has basically moved from whether developing countries should attract FDI, to how developing countries can attract FDI (Asiedu and Lien, 2011). In the light of this, many SSA countries have undertaken several policies that are aimed at attracting FDI. For instance, many have initiated economic reforms that are aimed at increasing the roles of the private sector through privatising state-owned enterprises, they have sought to restore and maintain macroeconomic stability through devaluation of overvalued national currencies and reduction of inflation rates and budget deficits. They have equally improved the regulatory framework for FDI by strengthening the rule of law, engaging in trade liberalization, and improving legal institutions, telecommunications and transportation infrastructure amongst others (UNCTAD, 1999). However, despite these reforms, SSA has not experienced the dramatic impact of increase in FDI on its growth as experienced in other parts of the developing world (Asiedu, 2005).

Indeed the empirical evidence to date on the effects of FDI on economic performance is not definite. Some studies indicate a positive impact of FDI on economic growth (Ghura and Hadjimichael, 1996; Bengoa and Sanchez-Robles, 2003; among others) while other studies report otherwise (Carkovic and Levine, 2002; Durham, 2004). On the other hand, some other group of studies suggest that the effect of FDI on a host country's economy is dependent on certain factors such as the country's absorptive capacity in terms of its human capacity, the country's the level of development, (Borensztein *et al*., 1998; Mengistu and Adams, 2007), its sectoral pattern (Dutt, 1997) and its financial development (Alfaro, *et al*., 2006). These studies seem to suggest that for countries in SSA, to reap the benefits that ensue from FDI, if any, may be more difficult than attracting FDI because the policies that promote FDI to SSA also have a direct impact on its long-term economic growth (Asiedu, 2005).

Therefore, given the unresolved nature of the nexus between FDI-Growth, the significance of governance (that is, institutions through which those reforms were channelled) come to mind. Moreover, evidences from recent literature confirm the role of good governance in engendering sustainable economic growth and development (Roy, 2005; Verspagen, 2012). However, many of the previous studies have been undertaken to study the FDI-Growth relationship without examining what the impact of governance is on this relationship and the relative importance of these governance indicators in the SSA region. Consequently, the major research questions this study seeks to answer are: Does governance has any effect on the FDI-Growth nexus in the SSA region? If any, what is the relative importance of governance indicators on the FDI-Growth relationship in SSA? The answers to these questions have important implications to both policy makers and academics, both as support to the findings of previous studies and a basis for future policy decisions.

Therefore, the current study seeks to examine the impact of governance on the FDI-Growth nexus in SSA. This is in line with (Asiedu, 2002, 2005; Mengistu and Adams, 2007), who assert that focussing on only SSA with its similar social, economic, and political conditions can help reduce any bias due to sample selection. Then the use

of a large panel data set of SSA countries will help to better explain the impact of governance on the FDI-Growth relationship in the region, thus increasing the degrees of freedom and the credibility of the results (Adams, 2009b).

Hence, it is pertinent to understand the effect of governance on the FDI-Growth relationship in the SSA region. A study that re-examines this interrelationship will not only provide appropriate policy focus that will adequately attract FDI to SSA but also provide basis for which of the governance indicators should be reformed and restructured in order to improve the impact of the FDI-Growth nexus in the region.

Following the introductory section, the remainder of the paper is structured into five main sections. The second section covers the background to the study where data on the key variables are discussed. Section three provides a review of theoretical, methodological and empirical literature that pertains to the subject matter. The fourth section presents the theoretical framework and methodology to the study. Section five presents the empirical results and discussions. The final section provides a conclusion of the study and policy recommendation.


2.   BACKGROUND TO THE STUDY

The FDI and Growth nexus in SSA has experienced interesting transformations over the past decades. There have been increases in the volume of FDI inflows to the region though not as remarkable as in other developing regions of the world. There has also been a wider spread of FDI recipient in SSA countries over the past decades. In addition, though earlier discourses on governance issues had not been extensive, in more recent times, it has been a major topic of interest especially as it relates to the development of the region.

Although the trend of FDI in SSA has been dramatic over the years, it has majorly portrayed an upward movement. However, Figure 1 show that SSA has attracted lesser FDI flows than other developing regions of the world. Beginning from the 1970s, FDI flows into SSA stood at an average of $709 million between 1970 and 1974. This was less than 5% of the World FDI inflows and began a more increasing ascent from the 1990s though flows into other developing regions such as Latin America and Caribbean and East Asia and Pacific had increased more steadily, particularly from the 1990s.

At the country level within SSA, this disparity can be observed in Table 1. Inflows of FDI into SSA have been concentrated in a few countries, with the traditionally biggest recipients, Nigeria and South Africa, enjoying a considerable large proportion. For instance, FDI inflows to Nigeria and South Africa alone between the period 1970-1974 was about 80% of the total FDI inflows to SSA while other countries like Democratic Republic of Congo, Kenya, Malawi, Zambia and Zimbabwe were major recipients of the remaining 20%. From the early 1990s, the FDI inflow to SSA increased at a more increasing rate and was spread across more countries. Nigeria still remained a major recipient of the flow of FDI receiving an average of $1,100.3 million between 1990 and

1994 whereas South Africa experienced a decline to an average of $113.5 million in its receipt of FDI during this period. It however resumed its position as a major recipient of the flow by the mid 1990s. Other countries like Angola, Ghana, Kenya, Swaziland and Zambia had increased in their receipts of FDI inflows during this period as well.
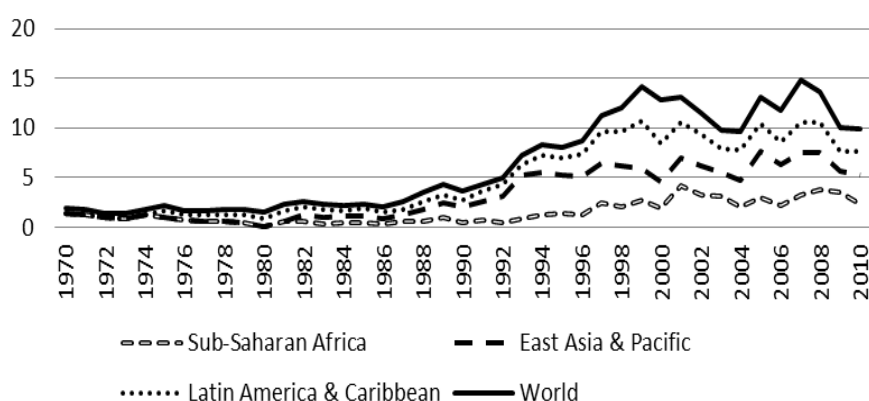
Source: WDI (2011) Database.

Figure 1.   FDI Inflows as a Percentage of GDP to SSA, East Asia and Pacific (EAP) and Latin America and Caribbean (LAC), 1970-2010

Table 1.   FDI Net Inflows in Sub Saharan Africa, 1970-2010 (Million Dollars)

Country Name	70-74	75-79	80-84	85-89	90-94	95-99	00-04	05-09	2010
Angola	4.1	0.6	74.8	192.4	218.0	930.0	1930.0	329.9	-3227.2
Benin	3.1	2.4	1.3	12.6	55.2	30.6	45.1	133.1	110.9
Botswana	0.0	30.8	61.4	63.9	-43.0	74.7	447.6	607.4	529.3
Burkina Faso	1.6	2.0	1.6	2.5	5.1	9.6	16.6	146.8	37.1
Burundi	0.0	0.0	0.0	1.0	0.6	0.8	2.3	1.1	0.8
Cameroon	0.0	22.3	121.6	69.6	-20.4	77.3	251.2	217.1	-0.6
Cape Verde	0.0	0.0	0.0	0.7	1.6	25.8	32.8	147.0	111.4
Central African Republic	0.0	5.2	6.0	4.1	-4.2	6.0	12.5	56.6	72.0
Chad	0.0	10.8	1.7	22.0	11.6	32.5	535.7	49.5	781.4
Comoros	0.0	0.0	0.0	2.9	0.4	0.4	0.6	5.1	9.4
Congo, Dem. Rep.	18.5	101.5	-9.7	1.9	0.5	6.1	218.7	890.9	2939.3
Congo, Rep.	0.0	4.1	39.5	16.1	69.4	169.6	177.8	1841.3	2816.0
Cote d'Ivoire	0.0	57.3	46.8	51.5	-0.1	319.9	233.7	376.9	417.9
Djibouti	0.0	0.0	0.0	0.0	1.5	3.2	12.6	130.1	26.8
Eritrea	0.0	0.0	0.0	0.0	0.0	61.9	14.8	-0.2	0.0
Ethiopia	0.0	1.2	0.0	0.0	4.2	131.0	349.8	272.5	184.0

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Gabon	0.0	22.3	67.6	63.4	-13.5	-225.0	76.9	204.3	170.4
Gambia, The	0.0	2.7	0.1	3.0	10.3	6.1	14.9	66.4	37.4
Ghana	0.0	15.7	10.5	6.9	83.1	143.9	118.0	908.3	2527.4
Guinea	0.0	0.0	0.0	9.9	15.9	24.6	43.7	209.5	101.4
Guinea-Bissau	0.0	0.0	0.5	0.7	2.7	3.5	2.1	12.9	8.8
Kenya	13.6	47.7	28.1	32.7	47.1	58.3	54.3	202.6	185.8
Lesotho	0.0	0.1	3.9	9.4	12.2	251.8	38.0	88.6	117.0
Liberia	0.0	32.9	24.0	1.2	0.0	60.8	95.9	186.9	452.9
Madagascar	9.6	-1.4	2.1	6.6	15.7	21.8	51.3	677.7	860.4
Malawi	11.7	9.0	9.3	4.9	4.1	21.4	44.9	89.3	140.0
Mali	0.7	2.1	4.2	0.4	1.3	46.1	136.2	227.9	147.6
Mauritania	4.1	-10.2	12.9	3.7	6.9	3.7	135.5	271.6	13.6
Mauritius	0.7	3.1	2.0	18.4	21.6	34.4	69.3	224.7	431.0
Mozambique	2.4	-0.3	1.2	3.2	24.8	155.3	264.7	432.4	788.9
Niger	1.2	26.9	14.8	6.1	13.4	6.9	15.0	260.6	946.9
Nigeria	285.2	354.0	157.5	710.5	1100.3	1253.7	1616.8	6524.7	6048.6
Rwanda	1.3	6.3	16.7	17.3	4.0	3.2	5.6	61.7	42.3
Sao Tome and Principe	0.0	0.0	0.0	0.1	-0.1	1.6	3.5	26.0	3.0
Senegal	9.0	18.1	14.3	2.7	27.4	88.1	60.5	233.5	237.2
Seychelles	2.6	6.4	9.7	18.2	19.7	47.3	46.6	199.5	368.9
Sierra Leone	6.8	12.8	0.2	-26.5	4.8	2.1	25.8	74.1	86.6
Somalia	2.4	4.4	-4.8	-3.6	1.7	0.5	-1.0	91.2	112.0
South Africa	286.3	-101.9	175.0	-147.5	113.5	1585.8	2240.7	5414.8	1565.4
Sudan	0.3	3.7	12.1	1.2	13.5	170.4	907.9	2705.4	2894.4
Swaziland	0.9	23.8	9.9	43.4	66.9	61.8	44.1	56.8	92.7
Tanzania	4.0	4.6	6.8	3.2	16.5	223.4	367.9	546.9	433.4
Togo	-8.9	33.5	12.1	10.3	3.0	27.4	50.4	55.2	41.1
Uganda	-0.4	1.8	1.2	-0.2	28.2	153.5	198.9	666.8	817.2
Zambia	23.4	37.2	21.0	82.3	127.3	156.3	240.3	786.0	1041.4
Zimbabwe	25.6	11.4	-0.1	-9.7	13.6	167.4	13.1	73.7	105.4
Sub-Saharan Africa	709.7	804.9	9583.681	1317.061	2188.438	6723.639	11806.92	27561.54	27153.53
World	147525	30027.9	57696.87	128559.5	209274.3	633408.5	938463.6	1681822	1331495

Source: WDI (2011).

It is also interesting to note that the distribution of FDI flows in the region from the 1990s onwards has been more evenly distributed amongst the SSA countries. Between 2000 and 2004, Nigeria and South Africa received only about 32% of total FDI inflows to SSA as against the 80% they both received in the 1970s. Then by 2008, 29 out of the 48 countries in the region recorded increase in FDI inflows (WDI, 2011; Ezeoha and Cattaneo, 2011). Furthermore in 2010, countries like Republic of Congo, Chad, Ghana, Madagascar, Niger and Tanzania, which had in subsequent years experienced only marginal FDI inflows enjoying larger volumes of FDI inflows.

Another country of peculiar feature is Angola, prior to the mid 2000s Angola was one of the top beneficiaries of FDI inflow alongside with Nigeria and South Africa. This has been due to its being a major oil producer (85% of GDP) and investors to Angola have been basically resource-seeking. However, the value for FDI inflows declined from

2005 and hovered around a negative balance of $3.2 billion as of 2010. This means that Angola became a source of more FDI outflows than a recipient of FDI inflows.

This supports the view that the FDI inflow in SSA countries that has been attracted over the years is largely motivated by natural resources and market size (Asiedu, 2005). From the Table, we observe that this view is consistent with the data where countries like Angola and Nigeria that are oil exporting countries, alone attracted about 30% of the total FDI inflow to SSA for the period 2000-2004. Additionally, with the recent discovery of oil in commercial quantities in Ghana we perceive a phenomenal increase in the FDI flows to Ghana, initially between 2005 and 2009 it only hovers around $908.3 million but by 2010 it stood at $2,527.4 million.

In terms of GDP growth, Figure 2 shows that there is a major decline in the world growth rate in the 1970s, 1980s and the very recent global economic crisis in 2009 all had adverse effects on the SSA region. From the 1970s GDP of the SSA region grew at the rate of about 2.8 percent and kept declining until the mid 1990s when it had a marginal increase to 0.84 percent and has been rising steadily though with another sharp decline in 2009 (-0.5%) with the global economic crises. These movements have however been with significant positive contributions from a substantial number of the SSA countries.
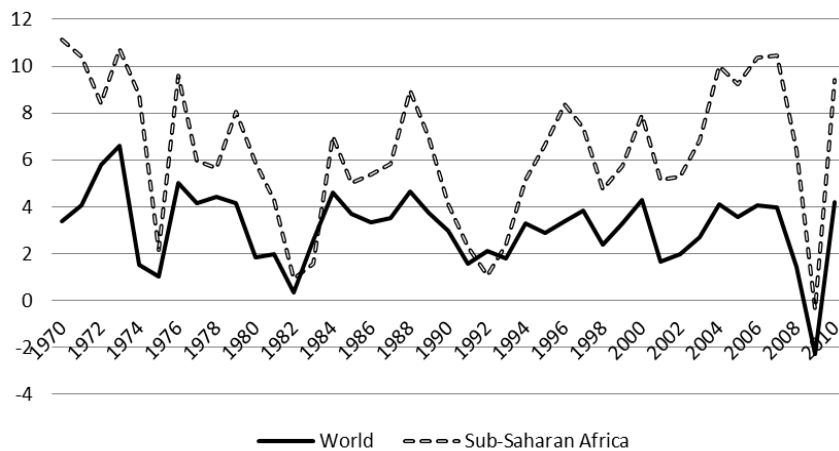
Source: WDI (2011) database.

Figure 2.   World and SSA GDP Growth Rate, 1970-2010

Growth in countries such as Botswana, Cape Verde, Mauritius, Seychelles and Swaziland have been experiencing progressive increases in the growth rate of GDP from the 1970s. Botswana had an average growth rate of GDP of 15.9% between 1970 and

1974; this declined slightly to 7.14% between 1980 and 1984, rose to 9.33% between 1995 and 1999 and stood at 5.9% in 2010. Seychelles had a similar experience with growth rate of GDP between 1970 and 1974 standing at 5.91%, dropping to -3.14% between 1980 and 1984 then rising to 3.99% between 1995 and 1999 and finally staying at 7.15% in 2010. Fosu (2010) explains that these statistics demonstrate that, when SSA's growth through the mid-1970s was basically supported almost equally by both investment and growth of total factor productivity (TFP) and when economic growth fell substantially in the early 1980s and again in the early 1990s, it was mainly due to the deterioration in TFP. Furthermore, the primary source of the growth recovery in the late 1990s was TFP improvement.

FDI inflows to SSA countries have contributed to the development of the region. For instance, countries like Republic of Congo, Chad, Liberia, Seychelles, and Niger in 2010 reported the percentage of FDI inflow in their total GDP to be over 10%. The share of FDI inflow to Republic of Congo between 1985 and 1989 was 0.8%, it increased to 7.3% between 1995 and 1999 and by 2010 it stood at 23.7% of total GDP; for Chad for the same periods it was 1.9%, 2.1% and 10.3% respectively; for Niger it was 0.25%, 0.36% and 17.1% respectively over the same period. For countries that have been major recipients of FDI, FDI inflows as a percentage of GDP has only been marginal over the past four decades for Nigeria it has not been more than 5% of GDP, for South Africa it has ranged between -0.17% and 1.9%. As noted earlier, the explanation of the recent progressive increases in FDI flows to the region is attributed to the importance of FDI as a source of finance to augment the low income levels and domestic savings within the region, required in the pursuit of the Millennium Development Goal (MDG) of poverty eradication and its attraction to resources-endowed countries or countries with large market size (Asiedu, 2005). However, the impact of FDI inflow on growth the region has not been impressive; this may be because of challenges such as, ethnic conflicts, political instability, adverse security conditions, and protracted civil wars that have plague the region and have aggravated the economic performance of several of the SSA countries.

Various studies (Asiedu, 2002; Alfaro *et al*., 2004; Carkovic and Levine, 2002) have asserted that FDI has a conditional relationship with growth among developing countries and in SSA in particular. The view suggests that FDI supports growth in some instances and not in some others. The effectiveness of FDI depends on certain factors such as good infrastructure, macroeconomic stability, openness to FDI, an educated labour force, effectiveness of the legal system of the recipient country. In addition, less corruption and political stability of the recipient country are important in ensuring the effectiveness of FDI. Unfortunately, governance concerns for SSA has been appalling due mainly to the legacy of repressive regimes in several SSA countries, as well as bloated and inefficient public administrations, ineffective judicial systems, and complex administrative and institutional frameworks (Ghura and Hadjimichael, 1996). Also, the inappropriate economic policies pursued by governments of several SSA countries have also contributed to the weak effectiveness of FDI on aggregate economic performance.

It is broadly accepted amongst development economists that countries with relatively good governance tend to grow faster, while countries with relatively bad governance tend to grow more slowly. Accordingly, elements of good governance are expected to play a crucial role in determining the direction of FDI inflow and growth rate of an economy. However, despite its likely role in influencing FDI and economic performance, the qualitative nature of governance makes it difficult to measure accurately. Regardless of the measurement challenges, series of governance indicators such as the Country Policy and Institutional Assessment (CPIA) indicator, the International Country Risk Guide (ICRG) indicator, the political right and civil liberties index (Freedom House), the corruption perception index (Transparency International), the Worldwide Governance Indicators (WGI) have been developed by different organisations (Ngov, 2011). The WGI[1] which is one of the most carefully constructed and most widely used indicator (Maurseth, 2008) aims at aggregating existing sources about governance to construct new and more reliable composite indicators. It shows the estimated governance scores ranging between approximately -2.5 and 2.5 and the percentile rank of ranging from 0 (lowest) to 100 (highest) ranks. The WGI is made up of aggregate indicators of six broad dimensions of governance: *Voice and Accountability, Political Stability and Absence of Violence/Terrorism, Government Effectiveness, Regulatory Quality, Rule of Law and Control of Corruption.* The six aggregate indicators are based on 30 underlying data sources reporting the perceptions of governance of a large number of survey respondents and expert assessments worldwide and they cover a wide range of countries.

3.   REVIEW OF THE RELEVANT LITERATURE

The impact of FDI on economic growth is one of the highly contentious topics in development economics and many reasons exist in the literature to explain this relationship.   Three main theoretical perspectives have been observed to be the foundation for empirical studies on the FDI-Growth relationship: the modernization and dependency theories under the traditional schools and the eclectic paradigm under the integrative school (Wilhelms, 1998; Nair-Reichert and Weinhold, 2001; Chowdhury and Mavrotas, 2003; and Mengistu and Adams, 2007).

The modernization school asserts that there is a natural order through which countries ascend to what is seen as higher developmental stages. They suggest that developing countries in following the path of developed countries, overcome endogenous barriers to exogenously motivated development through industrialization, liberalization, and opening up the economy. The ability to overcome these barriers will depend on how endowed the country is with production factors such as labour, capital, and natural resources (Wilhelms, 1998). The theories view FDI as a prerequisite and

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[1] The database is only available from 1996.

channel for sustainable growth and development by providing external capital that helps in supplementing domestic savings and promoting capital accumulation that ultimately brings about growth to the economy.The modernization school rests on the neoclassical theories (The Solow Growth Model, the Augumented Solow model) and the endogenous or new growth Models (Wilhelms, 1998; Mengistu and Adams, 2007; Adams, 2009b).

In contrast to the modernization theories, the dependency theories propose that dependence on foreign investment is detrimental to economic growth and increases income inequality in the long-run. The dependency school seeks to achieve more equal wealth, income, and power distributions through self-reliant and collective action of developing nations. To the dependency theorists, underdevelopment is caused primarily by exploitation from the industrialized nations. Though they admit that in the short run, increases in FDI enable higher investment and consumption and thus creates direct and immediate economic growth. However, as FDI builds up and foreign projects take hold, there will be adverse effects on the rest of the economy that reduce economic growth. This assumption is based on the opinion that an economy controlled by foreigners would not develop organically but in a disproportionate style (Tsai, 1994; Adams, 2009b).

The Integrative School integrates the concepts embedded in the modernization school and dependency school in defining its own framework. The Eclectic Paradigm of FDI by John Dunning[2] under this school addresses the organisational issues of the multinational corporations (MNCs) relating to foreign production. It integrates the industrial organization hypothesis, the internalization hypothesis and the location hypothesis without necessarily stating how they interrelate.

The literature is filled with different evidences of the impacts and effects of FDI on growth. Similarly, with the advent of the importance of the role institutions play in growth debates, more recent evidences of the impacts of governance on growth have emerged in the literature. However in both cases, the conclusive position of growth/development economists is indistinct.

Many empirical contributions have explored the relationship that exists between FDI and growth. For example, on the determinants of FDI, Tsai (1994) found that domestic market size and trade balance are key determinants of FDI, as well as economic growth. Also, Asiedu (2002) observed that factors that drive FDI include trade openness, return on investment, and infrastructural development. She however pointed out that these factors have a differential impact on FDI to SSA. Bengoa and Sanchez-Robles (2003) found economic freedom to be a positive determinant of FDI inflows. Taking it further, evidences supporting the positive impact of FDI on growth in the literature are observed; for instance, Ghura and Hadjimichael (1996), Borensztein *et al.* (1998), Durham (2004), Bengoa and Sanchez-Robles (2003), Alfaro *et al.* (2004), Dupasquier and Osakwe (2005), Mengistu and Adams (2007). However, the impact of FDI on growth is seen to be based on a number of factors such as sectoral patterns (Dutt, 1997), minimum level of

[2] See Moose, I (2002, p.36).

existing human capital (Borensztein *et al.*, 1998), degree of complementarity and substitution between FDI and domestic investment (de Mello, 1999) and local financial markets(Alfaro *et al.*, 2004). Conversely ambiguous impacts of FDI on growth are observed (Carkovic and Levine, 2002; Alfaro, 2003). Particularly in the case of SSA, the region is observed to still trail other regions in FDI performance (Odenthal, 2001) despite its improvements and reforms in its institutions, policies infrastructure and liberalization (Asiedu, 2003). Though SSA has been able to increase the inflow of FDI, the increase has not led to a corresponding positive effect on economic growth (Adams, 2009a; Abdulkadir, 2010).

Similarly evidences exist that show that governance has a positive impact on growth (Knack, 2002; Kurtz and Schrank, 2007; Fayissa and Nsiah, 2013; Verspagen, 2012). The study of the relationship that exists between governance and growth is an emerging one borne out of the ever-increasing interest in the concept of governance by developed nations and international development agencies due to the role governance plays in the promotion of growth and development. Although the literature has made important advances in uncovering the political, institutional and social determinants of economic growth, the governance-matters approach to development is not without problems (Avellaneda, 2006). The first problem with studying this relationship is that of measurement. Kurtz and Schrank (2007) in trying to observe this interaction between governance and growth observed that the dominant measures of governance are problematic because they suffer from perceptual biases, adverse selection in sampling and conceptual conflation with economic policy issues. Over the years, a number of measures have been adopted in capturing governance ranging from Transparency International's Corruption Perception Index (CPI), Freedom House's Freedom in the World Country Rating, the World Bank Group's International Country Risk Guide (ICRG) Indicators and Country Policy and Institutional Assessment (CPIA) Indicators and more recently, the World Governance Indicators which is a systematic approach for measuring institutions. It is developed as a large set of aggregate indicators of governance and is expected that it would enhance the quality and widen the scope of the studies on the determinants and consequences of good and bad governance (Kaufmann *et al.*, 2005). Although this new dataset is suitable for mapping out governance profiles and gaps across countries, it is equally limited in its use for making causal inferences about the relationship between institutions and growth[3] (Avellaneda, 2006).

Given the newly emerging nature of the studies on this relationship, diverse methods have been adopted in studying the relationship though the most prevalent method seems to be the form of critical review adopted by Ndulu and O'Connell (1999) and Avellaneda (2006). This may be because of the problems that arise with measuring governance as have been earlier mentioned. Other techniques that have by the same token been used include the two-stage estimation procedure using probit estimates and

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[3] The data only covers the period 1996-2010.

basic linear equation used by Globerman and Shapiro (2002); broad cross-country analysis used by Knack (2002) where he gradually accumulated indicators and evidences of links between governance and growth. Gradstein (2004) using growth modelling in observing the relationship identified that these governance measures/dimensions such as law enforcement leading to a better protection of property rights are costly   and exist more amongst sufficiently affluent countries which may be the reason why many developing countries rate low on the good governance measures. Then Roy (2005) using a Principal Component Analysis (PCA) to reduce the governance variables, observed that certain governance dimensions are important for achieving higher development outcomes. These include -Political governance, Institutional governance and ICT. Kurtz and Schrank (2007) used panel data estimation in their studies and observed that though the central measures of governance are generally challenging, they basically point to the fact that governance stimulates growth and development. Similarly, Fosu (2009) in his five-year panel estimation identified that though the growth record of Africa has been paltry, good governance has a promising positive impact on economic growth in Africa.

Not too many studies have been carried out to investigate the interaction that exists between FDI, governance and growth. To the best of the researchers' knowledge only the study by Mengistu and Adams (2007) has undertaken to study this relationship. They found out that the two most important determinants of economic growth are FDI and institutional infrastructure and FDI's effect on economic growth was more through its efficiency effects than through its augmentation of domestic investment. A closely related study was carried out by Li and Resnick (2003) in their study of democratic institutions and FDI flows to developing countries. They discovered that democratic institutions affect FDI inflows to developing countries through competing causal ways (Increases in democracy yield improved property rights protection, which encourages FDI inflows whereas, increases in democracy also reduces FDI received by LDCs) thus confirming their argument that democratic institutions affect FDI in a complex manner. Another closely related study which was carried out by Asiedu and Lien (2011) looked at the interaction between democracy, FDI and natural resources and found out that the effect of democracy on FDI depends on the importance (share) of natural resources in the host country's exports; whether low or high. In addition, Jensen (2003) contrary to previous assertions that multinationals prefer to invest in dictatorships over democratic regimes, obtained empirical evidences that suggests that democratic regimes attract as much as 70 percent more FDI as a percentage of GDP than do authoritarian regimes. The empirical results from this research work will make a significant contribution to the FDI, Governance and Growth literature since it seeks to investigate the impact of governance on the FDI-Growth nexus.

4.   THEORETICAL FRAMEWORK AND METHODOLOGY

The theoretical foundation for empirical studies on FDI and growth derives mostly from either the neoclassical models of growth or the endogenous growth models. In neoclassical models of growth, FDI increases the volume of investment and/or its efficiency, and leads to long-term level effects and medium-term, transitional increases in growth. The endogenous growth models consider long run growth as a function of technological progress, and provide a framework in which FDI can permanently increase the rate of growth in the host economy through technology transfer, diffusion, and spillover effects (Bengoa and Sanchez-Robles, 2003).

Within the framework of the neo-classical models that trail Solow (1956), the impact of FDI on the growth rate of output was constrained by diminishing returns to physical capital. Therefore, FDI could only exert a level effect on the output per capita, but not a rate effect. In other words, FDI could not alter the growth rate of output in the long run. With this as the framework, FDI could not be considered seriously as an engine of growth. On the other hand, in the context of the new theory of economic growth, FDI can influence not only the level of output per capita but also its rate of growth (Bengoa and Sanchez-Robles, 2003). Consequently, this study draws its insights from the endogenous growth model propounded by Paul Romer (1986, 1990). The model endogenizes technological progress by introducing the search for new ideas by researchers interested in profiting from their inventions (Jones, 1998).

4.1.   Methodology

Based largely on economic and econometric reasoning, data availability and previous studies on growth, a panel data model to examine the impact of FDI, and governance, among other factors, on economic growth is developed. The equation to be estimated in this study is in line with one used by other authors (Carkovic and Levine, 2002; Mengistu and Adams, 2007) and extended by the introduction of an interactive term.

$$Y_{it} = \beta_0 FDI_{it} + \beta_1 GOV_{it} + \beta_2 FDI_{it} GOV_{it} + \beta_3 X_{it} + \mu_i + \varepsilon_{it}, \qquad (1)$$

where Y_{it} is log of real GDP for country i in year t; μ_i is the country specific fixed effect which is assumed to be time invariant, β_i's are the coefficients to be estimated, FDI_{it} is inflows of FDI, GOV_{it} is a measure of governance, an interactive term between FDI and governance ($FDI_{it} GOV_{it}$) to account for the impact of their interaction on growth, X_{it} is a vector of control variables that largely capture macroeconomic conditions and other factors that are likely to impact growth. These include: the stock of human capital (*PRYRR*), gross capital formation as percentage of GDP (*GCFGDP*), inflation rate (*INFL*) which is proxied with the log of consumer price

index (*CPI*), exchange rate measured as local currency to US dollar (*EXC*), government expenditure as percentage of GDP (*GOVT*) and broad money supply as percentage of GDP (*M2*); ε_{it} is the classical disturbance error component. A dummy variable to capture the geographical (*GEOL*) location of the countries is also included as this has been observed to impact the FDI-growth relationship (Asiedu, 2002). 0 for countries that are landlocked and 1 for otherwise.

The choice of independent variables is based on peculiarities of these economy and the existing studies (Borensztein *et al*., 1998; Asiedu, 2002; Mengistu and Adams, 2007). FDI is measured as net FDI inflows. Based on the endogenous growth model, FDI is expected to have a positive impact on economic growth. An indication of the governance infrastructure has the likelihood of directly impacting growth rate or indirectly affecting how FDI impacts the host economy. The average of the six governance dimensions of the WGI from the World Bank (Voice and Accountability, Political Instability and Violence, Government Effectiveness, Regulatory Quality, Rule of Law and Control of Corruption) is used as proxy for governance initially in this study. The percentile rank of the WGI, ranging from 0 (lowest) to 100 (highest) ranks is used in this study. Governance is expected to positively affect economic growth.

Human capital development is proxied by primary school enrolment, from theory it is expected that FDI would improve the quality of human capital and consequently affect growth positively. Government expenditure is also expected to have positive impact on growth. Inflation rate is measured as changed in consumer price index while exchange rate is determined as local currency to US dollar; it is expected that both variables would have negative impact on growth. Geographical location dummy variable is incorporated in the analysis based on recent studies that identifies the effects of geographical location on growth across countries. African countries that are not landlocked are expected to attract more FDI than those countries that are landlocked (Asiedu, 2002).

4.2. Estimation Procedure

The model specified is estimated using a panel regression analysis. Three different panel estimation techniques (Pooled ordinary least square, fixed effects and random effects) are used in this study. From the theoretical perspectives, researchers are expected to examine the most suitable technique through a number of standard diagnostic tests on a given dataset. In practice, however, it is often difficult to know which technique is most appropriate since each of the techniques has its strengths and weaknesses. For instance, a pooled regression model implicitly assumes there are no problems of omitted variables in a model, which is hardly likely to be true. The fixed effects specification allows for intercept shifts for each country. It takes care of the problem that may arise from omitting important variables from the model; this is accomplished by creating dummies for all but one of the countries in the sample. The consequence of this is an indication of reduction in degrees of freedom, the severity of which deepens as the size of the sampled countries increases. Finally, the random effects

model also allows for a different intercept for each country in the sample (i.e., it takes into consideration individual heterogeneity effects) but isolates these individual country effects in the error terms, and therefore does not reduce degrees of freedom in the manner of the fixed effects estimator. Its own side effects, however, relates to the tricky requirement that the effect of omitted variables effects be uncorrelated with explanatory variables. For these reasons, we therefore estimate for all the three approaches with a view to ascertaining the robustness of our study findings. To choose between the fixed effects and random effect results, the Hausman specification test is performed.

4.3. Sources of Data

The interaction of FDI and Governance on growth is studied from 1996 to 2010 and is for 31 SSA countries based on the availability of data, particularly for the measure of governance which is one of the major variables of interest. The data on governance was obtained from the Worldwide Governance Indicators dataset published by the World Bank for 2011. The data for gross capital formation for Nigeria was gotten from the annual statistical bulletin of the Central Bank of Nigeria (CBN). All other data are obtained from the World Bank's World Development Indicators (WDI)/ Global Development Finance (GDF) database published in 2011.

5.   ANALYSIS OF RESULTS AND DISCUSSIONS

The summary statistics of the variables used in the analysis are reported in Table 2.

Table 2.   Summary Statistics of Variables

Variable	Obs	Mean	Std. Dev.	Min	Max
lnY	465	23.229	1.380	20.450	26.884
lnFDI	465	21.999	0.207	21.377	23.278
GOV	465	35.257	19.236	3.640	76.85
lnFDIGOV	465	775.323	423.451	79.617	1699.101
INFL	465	4.445	0.666	-2.894	5.407
lnPRYRR	465	13.811	1.711	9.062	16.945
GCFGDP	465	22.087	11.691	-23.763	113.578
GEOL	465	0.613	0.488	0.000	1.000
EXC	465	347.200	390.425	0.001	1963.700
GOVT	465	97.570	51.233	6.809	514.268
M2	465	31.776	22.259	0.000	117.357

Source: Author's computation.

The statistics used in this study is summarized as presented in the Table 2 above. It can be observed that the mean value of the interactive terms of governance and FDI is the highest at 775.3 followed by the mean of exchange rate, government expenditure as a percentage of GDP (GOVT), governance and Broad Money Supply (M2). The mean values of log of output and investment were revealed to be 23.23 and 22.09 correspondingly, while mean value for log of FDI and human capital had mean values of 22.00 and 13.81 respectively. Inflation and geographical location had a mean value of 4.45 and 0.61 in that order.

Table 3.   Correlation Matrix

	lnY	lnFDI	GOV	lnFDIGOV	INFL	lnPRYRR	GCFGDP	GEOL	EXC	GOVT	M2
lnY	1.000										
lnFDI	0.588	1.000									
GOV	-0.128	-0.078	1.000								
lnFDIGOV	-0.118	-0.063	0.999	1.000							
INFL	-0.034	0.014	0.183	0.184	1.000						
lnPRYRR	0.773	0.370	-0.339	-0.3333	-0.062	1.000					
GCFGDP	-0.260	-0.063	0.146	0.145	-0.005	-0.358	1.000				
GEOL	0.198	0.223	0.117	0.119	-0.068	-0.085	0.043	1.000			
EXC	-0.155	-0.179	-0.235	-0.237	0.152	0.089	-0.013	-0.195	1.000		
GOVT	0.220	0.470	-0.156	-0.152	0.042	0.309	-0.308	0.038	-0.067	1.000	
M2	-0.178	0.044	0.595	0.597	0.194	-0.461	0.100	0.310	-0.226	-0.029	1.000

Source: Author's computation.

From the correlation matrix above, it is observed that FDI, primary school enrolment which is a proxy for human capital are positively and highly correlated with growth (*Y*). Governance and the interactive term reflect a negative correlation with growth although the interactive term is highly correlated with governance but negatively correlated with FDI. As expected, a negative relationship exists between inflation and growth as well as with exchange rate and gross capital formation, whereas, geographical location is positively correlated with growth.

The panel results of the FDI, Governance and growth relationship are reported in Table 4. The results reveal that the positive and significant coefficient of FDI suggests that FDI has been an ingredient of economic growth of SSA countries over the period of the study. Also, the positive and significant coefficient of the interactive term also suggests the importance of governance in the FDI-Growth relationship. To control for the country specific effects and the associated omitted variable bias that is not captured in the pooled OLS, the fixed effects (FE) and random effects (RE) panel analysis are

performed. The Hausman test reports a significant probability value hence the null hypothesis of the FE estimates being better than the RE estimates is rejected.[4]

Table 4.   Estimated Results from Panel Data Analysis

Dependent Variable: $\ln Y$ (log of GDP)

	POOLED OLS	FIXED EFFECTS	RANDOM EFFECTS
lnFDI	2.568***	0.421***	0.397***
	(7.95)	(3.54)	(3.24)
GOV	0.440***	0.060**	0.081**
	(2.71)	(2.72)	(2.23)
lnFDIGOV	0.020***	0.003**	0.004**
	(2.70)	(2.82)	(2.27)
INFL	-0.077	-0.164***	-0.146***
	(-1.40)	(-7.94)	(-7.02)
lnPRYRR	0.574***	0.382***	0.508***
	(23.34)	(7.79)	(13.25)
GCFGDP	0.006**	0.010***	0.010***
	(1.78)	(7.31)	(7.10)
GEOL	0.422***	-	0.535***
	(6.18)		(2.41)
EXC	-0.001***	-0.002***	-0.001***
	(-5.16)	(-3.16)	(-3.41)
GOVT	0.005***	0.002***	0.002***
	(6.90)	(3.77)	(3.43)
M2	0.001	0.009***	0.007***
	(0.29)	(6.61)	(5.42)
CONSTANT	-4.177***	7.924***	6.611***
	(-5.84)	(3.11)	(2.50)
N	465	465	465
R-squared	0.836	0.782	0.816
Adj R-squared	0.826	-	-
p-value	0.0000	0.0000	0.0000

Notes: ***, ** and * indicate 1%, 5% and 10% significance level, respectively. The quantities in parentheses are the t/z-values.

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[4] This result is however not reported due to page limitation. Based on this, the disaggregated panel results only report the pooled and random effect.

The RE analysis also reports a positive and significant relationship between FDI and growth. The interactive term also reveals a positive and significant relationship with growth. As in the case of the OLS analysis, governance is positively and significantly related to growth. This shows that governance in SSA countries is weak and thus inhibits growth.[5] Primary school enrolment and geographical location are both positively and significantly correlated with growth in both the OLS and the RE analysis. This is in line with studies (Barro, 1991; Asiedu, 2003) that show that human capital and geographical location plays a significant role in explaining growth differences in SSA. Inflation rate in the FE and RE models are significant with a negative relationship with growth as expected but in the OLS model it appears insignificant. Gross capital formation is significant and positively related to growth in the three models. Exchange rate is negatively related to growth, as currency depreciation tends to promote growth while government expenditure and money supply appear positively and significantly related to growth in all the models.

The main regression results indicate that FDI has a positive overall effect on economic growth in SSA, although the magnitude of this effect depends on some country-specific features. This is in line with previous studies (Borensztein *et al*., 1998; Bengoa and Sanchez-Robles, 2003; Mengistu and Adams, 2007). When the country-specific characteristics were accounted for the magnitude of the effect was on average of 0.40. The geographical location of the country, the stock of human capital, exchange rate, government expenditure, money supply and the inflation rate influence the country-specificity of the FDI-Growth relationship. The impact of governance on this relationship is positive and significant, indicating weak nature of governance in SSA. This shows that deteriorating governance decreases economic growth. When governance is interacted with FDI in all the regression models, there is also a positively significant impact. This indicates that when the country-specific features are controlled for, the magnitude of the impact is smaller.

In sum, it is obvious from the results that governance in SSA is weak and has not been able to effectively promote growth. This weak governance also explains why SSA has lagged behind in attracting FDI as compared to other developing regions of the world (Globerman and Shapiro, 2002; Jensen, 2003). However, when governance is interacted with FDI it gives further insight into the impact of the FDI-Growth nexus (Knack, 2002; Fayissa and Nsiah, 2013).

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[5] This interpretation is based on the World Bank Worldwide Governance Indicators that is ranked in percentile ranging from 0 (lowest) to 100 (highest) ranks, with many African countries having low ranks indicating weak level of governance.

Table 5. Panel Regression (Pooled OLS and RE) with Disaggregated Governance Variable

Dependent Variable: ln$Y$ (log of GDP)

	Model 1a	Model 1b	Model 2a	Model 2b	Model 3a	Model 3b	Model 4a	Model 4b	Model 5a	Model 5b	Model 6a	Model 6b
lnFDI	2.445***	0.436***	2.188***	0.185**	2.256***	0.285***	2.176***	0.342***	2.734***	0.308***	2.27***	0.305***
	(7.38)	(3.65)	(9.49)	(2.30)	(8.81)	(3.21)	(9.07)	(4.00)	(9.96)	(3.13)	(9.45)	(3.64)
INFL	-0.011**	-0.006**	-0.083	-0.130***	-0.087	-0.012***	-0.087	-0.150***	-0.089	-0.151***	-0.084	-0.155***
	(-2.30)	(-2.38)	(-1.43)	(-6.21)	(-1.52)	(-3.43)	(-1.59)	(-7.19)	(-1.59)	(-7.28)	(-1.48)	(-7.48)
lnPRYRR	0.001	0.001	0.560***	0.538***	0.594***	0.527***	0.539***	0.526***	0.610***	0.523***	0.589***	0.523***
	(0.22)	(0.85)	(20.42)	(13.85)	(22.88)	(13.88)	(20.55)	(14.27)	(24.88)	(13.82)	(23.72)	(13.76)
GCFGDP	0.079	0.154***	0.005	0.010***	0.005	0.010***	0.002	0.010***	0.005	0.009***	0.005	0.010***
	(1.40)	(7.50)	(1.37)	(7.30)	(1.33)	(7.27)	(0.71)	(6.91)	(1.41)	(6.88)	(1.55)	(7.00)
GEOL	0.614***	0.516***	0.444***	0.534**	0.440***	0.577***	0.462***	0.554***	0.394***	0.544**	0.389***	0.566***
	(23.58)	(13.26)	(6.21)	(2.35)	(6.17)	(2.66)	(6.85)	(2.79)	(5.51)	(2.59)	(5.24)	(2.63)
EXC	-0.005	-0.010***	-0.001***	-0.001***	-0.001***	-0.001***	-0.001***	-0.001***	-0.001***	-0.001***	-0.001***	-0.001***
	(-1.56)	(-7.28)	(-5.32)	(-3.42)	(-5.29)	(-3.38)	(-6.81)	(-3.42)	(-4.64)	(-3.48)	(-5.70)	(-3.50)
GOVT	0.451***	0.559**	0.005***	0.001*	0.005***	0.001**	0.004***	0.002***	0.006***	0.002***	0.005***	0.002***
	(6.39)	(2.51)	(6.40)	(1.73)	(6.22)	(2.54)	(5.98)	(2.94)	(7.27)	(2.92)	(6.54)	(3.11)
M2	0.001***	0.001***	0.002	0.007***	0.001	0.007***	0.003	0.007***	0.003	0.008***	0.002	0.008***
	(4.98)	(3.11)	(0.80)	(5.68)	(0.81)	(4.82)	(1.28)	(5.43)	(1.59)	(5.56)	(1.00)	(5.53)
GOVVA	0.005***	0.001***										
	(6.60)	(2.96)										
lnFDIGOVVA	0.003**	0.008***										
	(2.23)	(5.82)										
GOVPS			0.004*	0.742***								
			(1.89)	(2.69)								
lnFDIGOVPS			0.001**	5.125**								
			(2.21)	(2.06)								

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
GOVGE					0.001**	0.012***						
					(2.23)	(3.43)						
lnFDIGOVGE					0.001**	0.001*						
					(2.12)	(1.91)						
GOVRL							0.018***	0.003***				
							(3.97)	(2.96)				
lnFDIGOVRL							0.001**	0.001*				
							(2.21)	(1.94)				
GOVRQ									0.018***	0.006*		
									(2.87)	(1.80)		
lnFDIGOVRQ									0.001*	0.001*		
									(1.87)	(1.84)		
GOVCC											0.011**	0.002
											(2.59)	(0.09)
lnFDIGOVCC											0.001**	0.001
											(2.46)	(0.61)
CONSTANT	-39.160***	5.603**	-33.30***	10.832***	-34.71***	8.79***	-32.32***	7.54***	-45.46***	8.32***	-34.97***	8.382***
	(-5.41)	(2.16)	(-6.73)	(6.14)	(-6.29)	(4.55)	(-6.21)	(4.01)	(-7.64)	(3.91)	(-6.76)	(4.53)
N	465	465	465	465	465	465	465	465	465	465	465	465
R-squared	0.829	0.810	0.817	0.807	0.818	0.804	0.822	0.813	0.822	0.812	0.820	0.818
Adj R-squared	0.823	-	0.811	-	0.812	-	0.816	-	0.816	-	0.813	-
p-value	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

In order to analyse which of the governance indicators can better enhance FDI, we investigate the impacts of FDI-Growth nexus in SSA on disaggregated governance variables. The results strengthen the initial findings. It also indicates that governance in SSA is weak and has not been able to effectively promote growth. The interactive terms of FDI with all the disaggregated level of governance are positive and significant at different levels. This shows that the disaggregated governance dimensions with FDI gives expanded explanation to the channel through which governance can impact the FDI-Growth relationship. In other words, all the different governance dimensions are important for attracting FDI and growth in SSA but with varying degree.

6. CONCLUSION AND POLICY RECOMMENDATIONS

The paper examines the impacts of governance on FDI-growth nexus in SSA. It utilises the technique of panel data analysis to assess the interrelationship. The results indicate that governance in SSA is weak and has not been able to effectively promote growth. This weak governance also explains why SSA has lagged behind in attracting FDI as compared to other developing regions of the world. Furthermore, when governance is complemented with FDI, it brings about positive and increased growth. This finding is robust to different estimation techniques and disaggregated governance dimensions. The study also reveals that other determinants of growth in SSA include human capital development, exchange rate, government expenditure, money supply, geographical location and gross capital formation.

Therefore, the paper suggests that SSA needs to take policy directions that would attract FDI to the region more seriously, in order to spur growth. This means that Africa governments should enhance their governance structures in order to attract and ensure efficient utilization of the FDI in order to sustain the level of economic growth.

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