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IS AID REALLY DEAD?
EVIDENCES FROM SUB-SAHARAN AFRICA

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Abstract

This study examined the relationship between foreign aid and economic development in Sub Saharan Africa. The study seeks to examine the role of institutions in aid effectiveness in SSA countries by adopting a theoretical framework similar to the Endogenous/New Growth model and the System Generalized Method of Moments (GMM) technique of estimation in order to overcome the challenge of endogeneity perceived in the institution variables and Aid-Growth argument. It was observed that foreign aid does not significantly influenced Real GDP Per Capita in Sub-Saharan Africa, even after controlling for adequate rule of law and sound public institutions. In the same manner; capital stock, rule of law, control of corruption and Human capital enhanced economic performance while foreign aid failed to contribute meaningfully to economic development in SSA Countries.

Keyword: *Foreign aid, Economic Development, Institutions, System GMM*

JEL Classifications: F35, C23, G18, O1, P48

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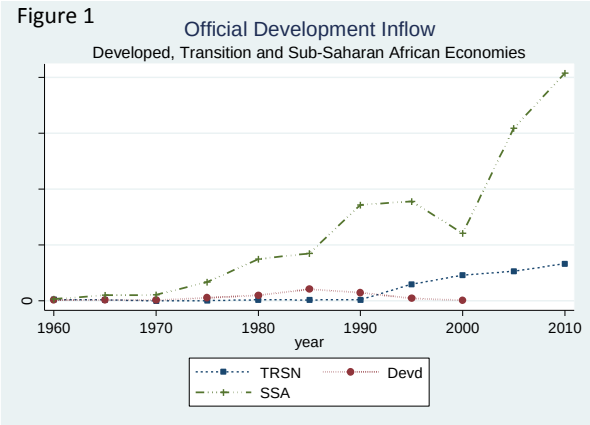
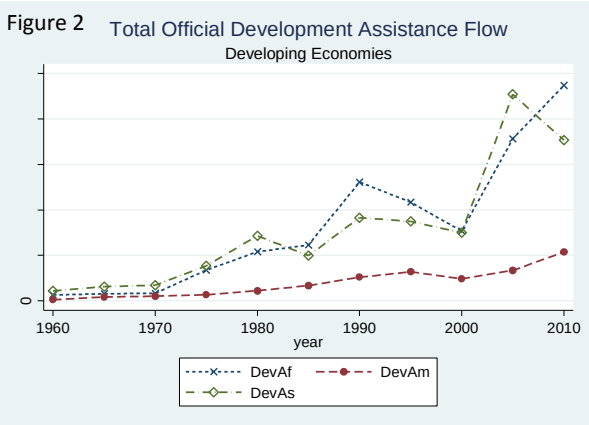
1.0 Introduction

Economic theories have identified capital formation as the basic problem of most developing countries, most especially Africa and aid is adjudged to play a vital role in capital formation which is essential for economic growth. The objective of foreign aid has been to end extreme world poverty, increase savings and investment and enhance living standard in developing countries, which is exactly what Africa needs. In commensurate to the theory side, Africa has been the largest recipient of foreign aid. According to OECD Report (2009b), total net Official Development Assistance (ODA) from members of Development Assistance Committee (DAC) rose by 10.2 per cent in real terms to US$110.8 billion in 2008; it rose to US$130 billion in 2010. Likewise, bilateral aid (excluding volatile debt relief grant) to Africa and Sub Saharan Africa rose by 10.6 per cent and 10 per cent respectively in real terms. The need for large aid inflow into Africa is necessary to accentuate the consistent dwindling living standard in Africa. For instance, studies have shown that during the 80s, averagely, Sub Saharan Africa per capita income fell at an annual rate of 2.2 percent while per capita consumption dropped by 14.8 per cent and import volume rose at an annual rate of 4.3 per cent with export volume remaining constant; likewise, the real GDP per capita growth rate falls continually and became negative in the early 90s. In the same manner, about 79 per cent and 80 per cent of SSA countries were identified as low human development countries and heavily indebted countries respectively (Bakare, 2011). From the foregoing, it therefore becomes imperative that to escape the strap of economic slump, Africa countries needs to be helped (Riddle 2007).

As a home to a large proportion of the world's "bottom billion", Sub Saharan Africa has attracted substantial amount of foreign aid over the years (see figure 1&2). Statistics shows that ODA flow to the region stood at $80 billion in 2008, it reached $125 billion in 2010 and may likely rise in later years. Over the last five decades, foreign aid to governments in SSA amounts to $1 trillion. In spite of this vast volume of aid inflow, it is worrisome to note that Africa, mostly SSA countries are yet to experience any significant economic progress. Instead the countries have been continually plagued with high levels of unemployment, absolute poverty, low GDP per capita level, high mortality rates, low level of education and lack of access to health care facilities (Mosley, 1987). The experience of Africa was unlike the story of other countries, for instance, China whose total ODA as a percentage of the world's total ODA was not as high as that of SSA experienced a higher growth leading to more structural change. As ODA increased from 0.2 percent in 1980 to 3 percent in 1985,

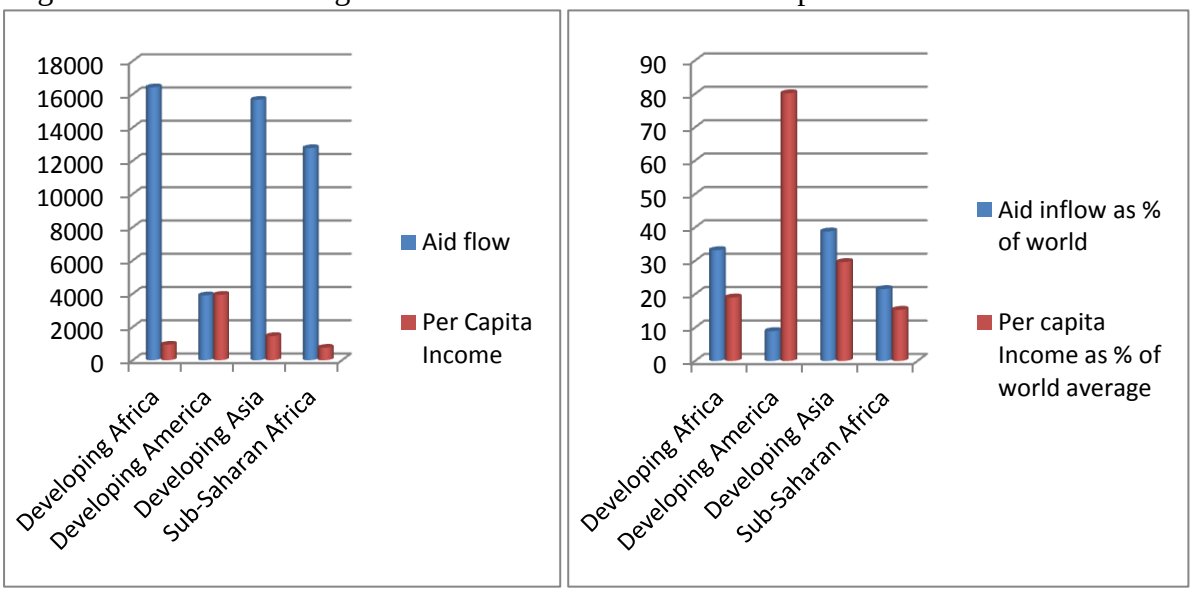
economic growth rate increased from approximately 6 percent to 12 percent in the same period implying that as ODA doubled its rate, the economic growth rate also reciprocated suggesting that foreign aid was effective in accomplishing growth.





The situation seems contrary in SSA, when ODA reduced to 28 percent (as percent of world) economic growth rate became positive from its declining state and grew to 1.1 per cent. As the ODA pumped to Sub-Saharan Africa countries increased, economic growth rate declined, this therefore implies that aid has not been very effective in SSA countries. At the same time period, growth of GDP per capita in Africa actually registered a marked decline and was for many years even negative. GDP per capita figures also declined across most of Sub- Saharan Africa asides a few countries. For example, World Bank calculations show that based on the predictions of theories, foreign aid transfers to Zambia, which began in the 1960s, would have by today pushed per-capita income to over $20,000. However, reverse is the case as Zambian income per capita has stagnated at around $600 for years (Farah 2009). This provides a vivid illustration of the failures of foreign aid in Sub Saharan Africa (see figure 2).

Figure 3 Regional Trend of Aid flow and Per capita income



There have been different debates and opinions about the effect of foreign aid on economic performance. One strand of literature states that there exists a positive relation between foreign aid and economic growth (Gupta 1975; Stoneman 1975; Gulati 1978; McGowan and Smith 1978; Bradshaw 1985) while another strand is based on the premise of an inverse relation between foreign aid and growth (Okon 2012; Brantigam and Knanck 2004). Yet another strand states that there is no relationship whatsoever between foreign aid and economic growth (Mosley 1980; Svensson 1999, 2000; Knanck 2001; Brumn 2003; Ovaska 2003; Easterly et al 2004; Djankou et al 2006). Thus, there has actually been no straightforward answer to the question of aid effectiveness. The evidences from literature has erstwhile been unparallel until recently when empirical evidences identified that the quality of institutions in different economies mighty have played a significant role in the mixed results obtained hitherto. According to Whitaker (2006); Abuzeid and Durbarry et al (1998); Burnside and Dollar (2000), the quality of institutions is crucial in aid performance; this therefore implies that aid becomes more effective in high quality public institutions.

2.0 Literature Review

According to Whitaker (2006), there is a positive relationship between aid and economic growth especially in countries that have sound policies that facilitates trade and the economy at large. This is also supported by Burnside and Dollar (2000), Farah Abuzeid (2009) and Durbarry et al (1998) which suggests foreign aid also leads to economic growth if good fiscal policies and strong institutions are in place. The kinds of policies here encompasses ensuring small, if any, budget deficits, controlling inflation, as well as trade openness and globalization though Durbarry (1998) found that geographical factor is also a determinant of aid effectiveness. Mosley (1987) sees foreign aid as being a channel of supplying international capital; as it serves as a big push to the post World War reconstruction of Europe under the U.S Marshall Plan while Farah (2009) opined that the big push theory can only work where there are reformed institutions and policies.

According to Burnside and Dollar (2000), World Bank (1998), aid is much more effective in environments characterized by high institutions quality as part of a capable developmental state. Todd Moss et al (2010) suggest that 'institutional development is an independent variable which affects the productivity of aid and is a recognized factor used to select and allocate to aid recipients. Whitaker (2006) also showed that the fact that massive amounts of foreign aid has been forwarded by developed nations and international institutions yet there has been perceived lack of result from this raises the question as to the actual effectiveness of foreign aid to less developed country. The result of his study was that foreign aid had a positive effect on growth but factors like conflict and geography lessens the impact and can even make it negative. It was suggested by the World Bank that increasing foreign aid flows by $10 billion would lift about 25 million people out of poverty per year, provided that such countries have sound economic management. The figure drops to 7 million people for countries when it is vice versa.

Another strand of literature disagrees and is of the opinion that foreign aid has a negative effect on economic growth because it encourages corruption, encourages rent seeking behaviors and erodes bureaucratic institutions. Ali and Isse (2005) also showed that aid is bound by decreasing marginal returns thus explaining another way in which development assistance can be unfavourable to economic growth. Likewise, Boone (1995) discovered that in the 1970s and 1980s, aid intensive African countries experienced no economic growth though foreign aid as measured by share of GDP was actually increasing. Foreign aid in increased volume erodes bureaucratic and institutional quality as well as increases in the level

of corruption and encourages rent seeking behavior (Knack, 2001). Also, Bauer (1971) and Friedman (1958) also on foreign aid efficiency stated that politicians do not allocate aid properly as measured against the set goals and targets. Recipient countries would then misuse capital inflows since lack of domestic savings show lack of opportunities. The literature has also claimed that there exists a negative casual relationship between aid and growth in low developing countries because aid hinders growth by substituting for savings and investment rather than acting as their supplements.

According to Djankov, et al (2005), foreign aid provides a windfall of resources to recipient countries and may result into rent-seeking behavior. It was also discovered that foreign aid had a negative effect on democracy. The effect of oil rents on political institutions was also measured and aid was seen as a bigger curse than oil. There has been a renewed interest in explaining the cross country economic growth to explain the exact effect of foreign aid on the economy. Hall and Jones (2000) argue that differences between countries in capital accumulation, productivity, and output per worker can ultimately be attributed to differences in "social infrastructure," which they define as "the institutions and government policies that determine the economic environment within which individuals accumulate skills, and firms accumulate capital and produce output.

Boone (1995) concluded that aid does not significantly increase investment and growth but it increases the size of government. Fiscal analyst and donors are of the opinion that aid process is weakened by the ability of the recipient governments to alter their spending patterns to undermine the sectoral distribution of expenditure for designated projects (Conchesta, 2008).

A few studies (Heller, 1975; Khilji and Zampelli, 1991; Pack and Pack, 1993) have supported the theoretical proposition that developing countries have been rendering foreign aid fungible by transferring resources from the donor-aid sectors to non-donor aided sectors. Also, World Bank (1998) report on assessing aid supported the fact that countries with good monetary, fiscal and trade policies (i.e. good policy environment) registered high positive effect of aid. Such good policy environment depends on the donor or recipient count. However, of great importance is whether recipient countries spend donor funds on intended purposes. Studies using time series data in individual countries (Levy, 1987; McGuire, 1978, 1987; Gang and Khan, 1990; Pack and Pack, 1990) found no significant diversion and all agree that countries spend foreign aid funds on the designated purposes.

At sectoral level, Feyzioglu et al, (1998) found that aid is fungible on earmarked concessional loans for agriculture, education and energy, but not for transport and communication sectors. Pack and Pack (1990, 1993) concur with Feyzioglu, *et al* (in the case of Indonesia and Sri Lanka) that strong fly paper effect does occur on concessional loans (but the results differ with data on the Dominican Republic). The evidence that aid money increases government expenditure means that the recipient governments do use the increased resources to increase spending, cut taxes or reduce fiscal deficits.

Further on the effect of foreign aid on government expenditure, Devarajan, *et al* (1998) found that most aid (about 90%) boosted government expenditure with no significant evidence of tax relief. About half the aid was used to finance external debt service payments; one quarter to finance investments and the other quarter to offset current account deficits. On the other hand, Swaroop et al (2000) focusing on the effects of foreign aid on expenditure decisions of central government of India, found that foreign aid merely substitute for already earmarked government spending. The central government spends funds obtained through aid on non-development activities; this implies that government choices are unaffected by external sources of finance. Finally, a comprehensive survey of theoretical and empirical literature using both panel and time series data supports the notion that aid increases government expenditure (Hudson 2004; McGillivray, et al 2006).

A study conducted by McGillivray (2005) demonstrates how aid to African countries not only increases growth but also reduces poverty. Furthermore, he points out the important fact that continuously growing poverty, mainly in sub-Saharan African countries, compromises the MDGs (Millennium Development Goals) main target of dropping the percentage of people living in extreme poverty to half the 1990 level by 2015. His research empirically analyzes time series data for 1968-1999. The paper concludes that the policy regimes of each country, such as inflation and trade openness, influence the amounts of aid received.

Ouattara (2006) analyzed the effect of aid flows on key fiscal aggregates in Senegal. The paper utilized data over the time period 1970 – 2000 and focused on the relationship between aid and debt. Three conclusions were made out of the study. First, that a large portion of aid flows, approximately 41%, goes into financing Senegal's debt and 20% of the government's resources are goes to debt servicing. Second, the impact of aid flows on domestic expenditures is statistically insignificant, and lastly, that debt servicing has a significant negative effect on domestic expenditure. Thus, his paper concluded that debt reduction could

become a more successful policy tool than obtaining additional loans. Addison, Mavrotas and McGillivray (2005) examined trends in official aid to Africa over the period 1960 to 2002. The study found a relatively decreasing aid flow to Africa over the last decade which will likely affect Africans living in poverty and the African economy as a whole. As a result of the shortfall in aid, the MDGs will be much harder if not impossible to be achieved. Thus, the paper concluded that aid do promote growth and reduce poverty. In addition, it also positively impacts public sector aggregates as it contributes to increase public spending and lowers domestic borrowing. However, the MGDs cannot be achieved with development aid alone there is need to explore other innovative sources of development finance.

An empirical study by Karras (2006) examines the correlation between foreign aid and growth in per capita GDP using annual data from 1960 to 1997 for a sample of 71 aid-receiving developing countries and the paper concluded that the effect of foreign aid on economic growth is positive, permanent, and statistically significant. Though, the study neglected the effect of policies but found an increase in foreign aid by $20 per person leads to an increase in the growth rate of real GDP per capita by 0.16 percent.

Gomanee, Girma, and Morrissay (2005) addressed directly the mechanisms through which aid influenced growth. A sample of 25 Sub-Saharan African countries over the period 1970 to 1997 examined and the study concluded that foreign aid had a significant positive effect on economic growth. Furthermore, they identified investment as the most significant transmission instrument. The paper also concluded that Africa's poor growth profile should be attributed to factors other than aid ineffectiveness. Rather than using a large pool of data for numerous developing countries, Quartey's (2005) paper focused on innovative ways of making financial aid effective in Ghana and noted that the government and its partners need to plan better and coordinate their efforts to make MDBS (multi-donor budgetary support) successful. Quartey (2005) also suggested that government needs to work towards reducing its debt burden so that aid inflows would not just be mainly used to service debt.

Economic research on foreign aid effectiveness and economic growth has frequently become a political topic. Burnside and Dollar (2000) searched the links between aid, policy, and growth and found that foreign aid has a positive impact on growth in developing countries with good fiscal, monetary and trade policies but has little effect in the presence of poor policies. This result has enormous policy implications and as such it provides a role and strategy for foreign aid. Easterly, Levine and Roodman (2004) reassesses whether foreign aid

influences growth in the presence of good policies using more data and concluded that adding new data raises reservation on the effectiveness of aid. According to Easterly (2003), achieving a beneficial aggregate impact of foreign aid remains a mystery.

According to Farah Abuzeid, Sound policy and good economic management is more important than foreign aid for developing countries. Bauer claimed that the problem is that aid goes to governments whose policies retard growth and create poverty (1993) and these countries have incentives to make sure their institutions remain of poor quality because this will lead to more economic crises and an increase in aid flows (Azam and Laffont 2003).

The improvement of institutions is very important to decreasing inequality because better, more democratic institutions helps government to meet the needs of the poor (Reuveny and Lee 2003). Better institutions and governance also decreases inequality by redistributing income through effective taxation and by decreasing the influence of the "high-income political elites" through crackdowns on corruption. As the record shows, without good institutions, aid is likely to have a detrimental impact on the quality of governance in a recipient developing country. In the absence of these strong institutions, assistance efforts should be dedicated to improving the quality of governance before they can be effectively devoted to any economic development effort.

Ram (2004) looks at the issue of poverty and economic growth from the view of recipient country's policies being the important element in the effectiveness of foreign aid. Nevertheless, in his paper the author disagrees with the accepted view that redirecting aid toward countries with better policies leads to higher economic growth and poverty reduction. Based on his research the author concluded that evidence is lacking to support the leading belief that directing foreign assistance to countries with good 'policy' will increase the impact on growth or poverty reduction in developing countries. Contrarily, Rodrik (1998) argued that countries with weak institutions are unable to deal with major economic shocks and this reflected in the slow performance of less developed countries. Also, Osabuohien and Ike (2011) concluded that economies with weak institutions move at a slow economic transformation rate because they would have difficulties in dealing with political and economic shock experiences.

3.0 Research Methodology

3.1 Theoretical framework

There has been evolutions and emergence of different growth theories over the years as several models and theories of growth have emerged. The theoretical framework that would be used to explain distinctly the relationship between foreign aid and economic development in Sub Saharan Africa would be the new endogenous growth theory which came from Lucas Romer's modification of the old neo classical growth theory (Mallick and Moore, 2006). The main contributors to the new endogenous growth theory are Arrow (1962), Romer (1986) and Lucas (1988). The endogenous growth theory recognises the vital importance of the endogeniaty of capital (that is, human capital and research and development activities) in the growth process. The neoclassical model emphasised that technical progress or total factor productivity growth are exogenously determined or given but the endogenous theory implies that growth is as a result of 'the learning by doing' effect which occurs between both physical and human capital (Mallick and Moore, 2006). The model also assumed constant or increasing returns to scale with non diminishing marginal productivity of capital instead of the assumption of constant returns of capital with diminishing marginal productivity of capital in the neoclassical growth theory (Mallick and Moore, 2006).

The assumption of increasing returns to capital of the new growth theory shows that foreign aid would most likely increase growth and development well into the future or long run. Another striking contribution of the endogenous growth theory is the recognition of the importance of human capital in the growth or in this case, development process as according to Mallick and Moore (2006), it is seen as a vital source of long term growth which is either in form of direct input to research (Romer, 1990) or representing positive externalities (Lucas, 1988). The human capital variables included in the model help to capture quality differences in labour force as investment in non physical capital helps to increase the labour force productivity. According to Barro and Lee (1993), these are mainly related to education and are measured by an index which is either mean years of schooling or school enrolment (Mallick and Moore, 2006) The effectiveness of foreign aid on economic development has been based on this theory since foreign aid could be a very important factor in the contribution of human capital (Kargbo, 2012). For instance, Lucas assumed that investing in education leads to production of human capital which is a very crucial determinant of the development process. According to Jhingan (2004), research and development or investment has become vital in the new growth theory. This theory as such suggests that developing

countries also engage in trade with developed countries in order to gain new knowledge in research and development and new technologies. Hence there is a need to encourage trade openness.

The new growth theory also recognises the usefulness of policies to economic growth and development as they enhance public and private investment in human capital and this justifies the inclusion of policy variables in the aid growth regressions. A very consistent concept in this growth model is the importance of capital to determine economic growth and development. There could be, however, other determinants of growth but the inclusion of capital (both physical and human capital) is a very important determinant of economic growth and development in developing countries. It is therefore very imperative as according to Kargbo (2012) to empirically prove if it is all types of capital that determines the economic performance of developing countries. Therefore, both physical capital (proxied by Gross Fixed Capital Formation) and human capital (as proxied by school enrolment rate) are included in the model to be regressed. As a result, foreign aid as a key source of capital is also included to determine economic development in sub Saharan Africa.

In conclusion, the new endogenous growth theory holds that economic growth is a result of the accumulation of physical capital (and human capital) and an expansion of the labour force. The endogenous growth theory is based on the idea that output in an economy is produced by a combination of labour (L) and capital (K), under increasing returns, so that the theory distinguishes between physical and human capital. This can be expressed mathematically:

$$Y = f(L, K, A)$$

The aggregate production function above is assumed to be characterized by increasing returns to scale. Thus, in the special case of Cobb-Douglas production function at any time t,

$$Y_t = K_{(t)}\left[A_{(t)}L_{(t)}\right]^{1-\alpha}$$

Where Y = Quantity of output or Gross domestic product, A = productivity of labour which grows over time at an exogenous rate, L = Labour, K = Stock of capital (which includes human capital as well as physical capital).

According to Gwartney et al. (2004), another approach to fully understand the growth theory is the institutions approach. This approach includes institutions as being an important determinant and having an important role to play. Institutions are seen to affect the

availability and productivity of resources and so actions supporting property rights and freedom of exchange for credible policy commitments should be encouraged. Also, the government should strengthen the role of political and legal environment among other functions. This is in line with the opinion of North (1990) who emphasised that the 'third world countries' are poor because their institutional constraints defines a set of pay offs of political activities that does not encourage production activities (Wako, 2011). Hansen and Trap (2000) explained that over the years, considering the institutions approach to growth; progressions have been made on the topic of aid effectiveness. The progressions have included making use of panel data, inclusion of institutions in the growth regression, recognition of the endogeneity of aid and other variables and explicit recognition of linearity in aid-growth relationship (Ogundipe, 2011)

3.2 Model Specification

This section discusses the model specifications to examine the relationships between foreign aid and per capita GDP growth.

The study model is therefore specified as:

$$RGDPERK = f(GFCF, LAB, AID, INSQUAL, HUKP)$$

$$RGDPERK = b_0 GFCF^{\beta 1} LAB^{\beta 2} AID^{\beta 3} INSQUAL^{\beta 4} HUKP^{\beta 5}$$

The dependent variable in this instance is the Per Capita Gross Domestic Product while the explanatory variables are official development assistance, institutional quality, gross fixed capital formation, labour force input and human capital. In order to effectively capture economic development using Real GDP per capita, we take the logarithm of GDP (which has been used also by Hezer and Morrissey, 2011; Adhikary, 2011; Amaghionyeodiwe and Ogundipe 2013) because the log difference of Real GDP per capita implies economic development. Also, all the other regressors are expressed in logarithms too.

$$\mathrm{RGDPK_{it}} = \mathrm{b_0} + \mathrm{b_1 GFCF_{it}} + \mathrm{b_2 LAB_{it}} + \mathrm{b_3 AID_{it}} + \mathrm{b_4 HUKP_{it}} + e^{\mathrm{b_5 insqual_{it}}} + \mathrm{e_{it}}$$

Taking the natural logarithm of the equation above, we have the following:

$$\mathrm{logRGDPK_{it}} = \mathrm{b_0} + \mathrm{b_1 log\ GFCF_{it}} + \mathrm{b_2 logLAB_{it}} + \mathrm{b_3 logAID_{it}} + \mathrm{b4log} + \mathrm{b_4 logHUKP_{it}} + \mathrm{b_5\ INSQUAL_{it}} + \mathrm{e_{it}}$$

3.3 Technique of Estimation

Here the technique of estimation used is discussed and the justification for this technique is established. The advantages of using panel data over the usage of time-series and cross-

sectional data have been reviewed in different literature. According to Verbeek (2000), the major advantages of using panel data are that, it helps in identifying parameters in the presence of measurement error, the robustness of panel-data-based models to omitted variables, and the efficiency of parameter estimates because of the larger sample size with explanatory variables changing over two dimensions (Wako, 2011). Based on the evaluated advantages of panel data over others, the panel data would as such be used in examining aid effectiveness. The adoption of OLS in panel data analysis has been criticized in various studies particularly where the lagged dependent variable enters the set of explanatory variables as is seen in the case of foreign aid.

According to Bond et al. (2001), Bond (2002) and Roodman (2006b), the correlation between the lagged value of the dependent variable or any endogenous explanatory variable and the individual-specific, time-invariant effect(s) makes the OLS estimates biased and inconsistent. Bond (2002) also noted that the inconsistency of pooled OLS still exists even if the serial correlation of the error term is assumed away. According to Bond, (2002), Buhai (2003), in order to allow for country-specific heterogeneity and considering the potential gain in efficiency, fixed effects, the between effects and the random effects models are used in many researches. However, though the transforming techniques of these static panel data techniques could provide lags of the variables as their instruments and imply the consistency of such estimates, such a consistency is not applicable to short panels with many individuals (large N) observed over short periods (small T). While the use of the Within Groups estimation eliminates individual heterogeneity, it does not account for the issue of dynamism/persistency of the dependent variable (growth rate of GDP per capita in this case) (Bond, 2002; Buhai, 2003). Thus, regressing the models specified earlier requires a better method of estimation in situations where regressors could be endogenous, where individual-specific patterns of heteroskedasticity and serial correlation of individual disturbances (part of the error term that varies both over time and across individuals) are likely, where the time dimension of the panel data is small, and where there is no much hope for good exogenous instruments.

There has been much support for the use of GMM in cross-country literature. Caselli, Esquivel and Lefort supported the use of the GMM panel data estimator in analyzing conditional convergence in the Augmented Solow Growth Model. As Roodman (2006b) explained the differenced-GMM and the system-GMM estimators are developed to suit panel

data analysis under such conditions. System-GMM is argued, for instance, in Bond et al. (2001), Bond (2002) and Roodman (2006b), to fit growth regressions better than the differenced-GMM, particularly with near unit-root series (Wako, 2011). The GMM estimation is often possible where a likelihood analysis is extremely difficult. Estimation of the models were handled using the statistical software STATA version 10.

3.4 Data Sources and Measurement

Data is obtained from secondary sources and covering the period of 1996-2010 for forty (40) countries in Sub-Saharan Africa**.** The study used growth rate of GDP per capita, gross fixed capital formation, and School enrolment as a proxy for economic development, capital stock and human capital respectively. The data series for economic development, capital stock, human capital, labour force and foreign aid were obtained from the World Development Indicators (WDI) of World Bank while the data on institutional quality were obtained from World Governance Indicators (WGI) database.

4.0 Discussion of Result

The study begins by adopting the first adopting the commonly used estimation technique in previous studies; this involves the ordinary pooled, fixed and random effect model estimation under the panel data analysis. The choice of estimating these models enables us to ascertain erstwhile position of empirical literature and develop a comparison framework with the System GMM estimation results.

The pair wise correlation test

Table 2: Pair wise correlation test

	Gfcf	**Lab**	**Aid**	**Rol**	**Coc**	**hukp**
gfcf	1.0000					
lab	0.3611	1.0000				
aid	0.1744	0.6055	1.0000			
rol	0.1648	-0.2271	-0.0885	1.0000		
coc	0.1837	-0.2665	-0.1140	0.8609	1.0000	
hukp	0.1905	-0.1716	-0.1425	0.4351	0.3781	1.0000

The pair wise correlation test helps to check for correlation between the independent variables. Evidence of strong correlation will imply the presence of multicollinearity which will affect the efficiency and non-biasness of the regression. The existence of no perfect correlation indicates that the independent variables which include GFCF, LAB, AID, ROL, COC and HUKP are not correlated with each other because the values are less than one, thus, there is no problem of multicollinearity among them.

variable	a	b	c	d
lgfcf	0.4904	0.0462	0.1170	0.0166
	*(15.63)**	(2.24)*	(5.95)*	(26.3)*
llab	-0.3870	0.2119	-0.0295	0.0010
	*(-9.89)**	(1.87)	(-5.52)*	(0.13)
laid	-0.2973	-0.0467	-0.0531	-0.0050
	*(-7.37)**	(-2.64)*	(-2.69)*	(-1.78)
rol	0.1088	0.1208	0.1410	0.07289
	(1.45)	(2.64)*	(2.87)*	(29.70)*
coc	0.0632	0.0282	-0.0127	-0.0444
	(0.0789)	(0.84)	(-0.35)	(-10.14)*
lhkp	0.1698	0.1581	0.2278	-0.0103
	(0.0368)	(6.53)*	(11.09)*	(-2.30)*
cons	7.6654	2.8194	8.9573	-0.3463
	*(14.4)**	(1.98)*	(13.28)*	(-2.36)*

[a] ordinary pooled regression estimates [b] fixed effect model regression estimates [c] random effect model regression estimates
[d] estimates from the System GMM *significance at 5% level

The fixed effect model controls for time invariant differences that exists between countries so the estimated coefficients of the fixed effect model cannot be biased because of omitted time invariant characteristics like culture, gender, religion, race and so on. The random effect regression unlike the fixed effect regression assumes that all variations across individuals are random and uncorrelated with the independent variables which are included in the model. One advantage of this regression is that it includes time invariant variables like gender. Random effect assumes that the entity's error term is not correlated with the predictors which allow for time-invariant variables to play as explanatory variables. This regression helps to generalize inferences beyond the sample used in the model.

The FE results show that aid impacts negatively on development in SSA in the presence of institutions. On the other hand, there exit no significant relationship between institutions and economic development. Similarly, the RE affirms the result obtained with the FE estimation showing an insignificant inverse relationship between aid and economic development. These results are consistent to earlier studies that employ the same estimation procedure, mostly (Ekanayake and Chatrna 2010) which found aid variable to be negative for low-middle income countries.

In order to overcome the challenge of endogeneity which is inherent in this study; the System Generalized Method of Moment (GMM) is considered most appropriate in order to obtain reliable estimates. In order to regress the models specified earlier, there has to be a better method of estimation in situations where regressors could be endogenous, where individual-specific patterns of heteroskedasticity and serial correlation of individual disturbances (part

of the error term that varies both over time and across individuals) are likely, where the time dimension of the panel data is small, and where there is no much hope for good exogenous instruments. Based on Past Literature, foreign aid is seen to have a causality effect relationship with Economic development, which is our dependent variable since foreign aid in some instances could be endogenous. The GMM estimator has also been supported in studies by Bond et al. (2001), Bond (2002) and Roodman (2006b) because it helps to fit growth regression. Roodman also stated extensively that the GMM estimators are used to suit panel data analysis in situations where conditional convergences in the growth models could occur.

The results of the system based GMM estimator of each variable will be explained in light of economic theory. Also, its implication on Sub Saharan Africa Region would be examined. From the readily available estimation results, though the aid variable was negative but foreign aid exerts an insignificant variation on economic development in the SSA countries. This implies that aid has no relationship whatsoever with economic development even after interacting with institutional quality. The economic implication is that foreign aid does not contribute meaningfully to development in Sub-Saharan Africa. Thus foreign aid has not been effectively used and managed as it ought to.

The Gross fixed capital formation has a significant inelastic relationship with the Real GDP Per capita. This implies that a proportionate change in capital stock will bring about a less than proportionate change in development. This implies that though capital stock is needed for economic development in sub Saharan Africa; it needs to be effectively utilized to produce optimal results. Likewise, human capital and quality of institutions were found to exert an inelastic significant variation on economic development. In consistency with the New Growth theory; though human capital contributes to development in SSA but its inelastic nature reflects the need to further maximize it to enhance development.

5.0 Recommendation and Conclusion

Based on the empirical analyses and results obtained in this research study, foreign aid has been found to have though a negative but an insignificant relationship with economic development in Sub Saharan Africa and as such we failed to reject the null hypothesis that aid does not contribute to economic development in the economies of SSA. Also, the opinion that institutions do have a significant effect in aid effectiveness is rejected, because despite controlling for the role institutional quality in our model, the living standard of SSA

economies dwindled as foreign aid increases. The study adopted the Generalized Method of Moments estimation technique for the period of 1996-2010 covering forty SSA countries; the choice of the System GMM was necessary to overcome the endogeneity issues perceived in the model. It is recommended that for foreign aid to be very effective in ensuring economic development in sub Saharan Africa, it needs to be properly channeled to development projects rather than being a means of serving debt or expansion of government spending.

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