Are International Remittances Inflows Significant in Promoting Economic Growth in Sub-Saharan Africa?

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Abstract
Empirically investigates the effect of international remittances inflows on economic growth in Sub-Saharan Africa from 1995 to 2015 using panel data of 36 Sub-Sahara African countries. Employs the fixed effect model, random effect model, and the dynamic panel data model (using the generalized method of moments system-GMM SYS) as its econometric methodology. Results show that international remittances have negative effect on economic growth in Sub-Saharan Africa. Hence, recommends that emigration policies should be put in place to prevent the inordinate brain drain of the region's finest elites and also remittances inflows should be invested in productive activities and the advancement of local industries instead of increased purchase of imported products.
Key Words: Remittances Inflows, Foreign Direct Investment, Economic Growth, Panel Data, Generalized Method of Moments System.
JEL Classification: F24, F21, F43, C55, C40,

I.   Introduction
International remittances mirror the local labour working in the global economy and have been put forward to explain the link between economic growth and integration with the global economy (Adenutsi, 2014). Net international migration has been increasing and more and more workers are leaving their home countries to work in foreign countries mainly due to better employment opportunities. With the dawn of globalization and the increasing development gap between advanced economies and developing regions, the number of international migrants is expected to increase to increase by approximately 2.5 percent annually (International Migration Report, 2010). This implies that there international remittances flows will increase and developing economies can maximize this opportunity through the reduction of remittances transfer costs, improved local financial systems and the implementation of pro-growth strategies to direct remittances inflows to finance development projects and enterprises. However, over-dependence on remittances will expose households to fluctuations in migration cycles and if the remittances are spent on unproductive and short-term consumption gains, they could result to higher inequality between households with access to remittances and those without, promote negative local cultural practices that are inimical to productive living, and increase the growth of the parallel foreign exchange markets and thus promote money laundering (Chimmhavu, Piesse and Pinder, 2005). The Sub-Sahara African region is largely undeveloped with economies predominantly characterized by high population growth rates, increasing unemployment rates, alarming poverty levels and low per capita GDP (Todaro and Smith, 2002). Table 1 gives the summary of some of the key macroeconomic performance indicators of Sub-Saharan Africa from the 1960s.

Table 1: Macroeconomic Performance in Sub-Saharan Africa (1960-2015)

Key Macroeconomic Indicators	1960-1969	1970-1979	1980-1989	1990-1999	2000-2009	2010-2015	Overall 1960-2015
GDP per capita growth (annual %)	1.735	1.588	-1.404	-0.774	2.704	1.501	0.832
GDP per capita (constant 2010 US$)	1157.7	1439.1	1330.1	1173.7	1340.32	1612.39	1322.94
GDP growth (annual %)	4.255	4.359	1.434	1.975	5.498	4.301	3.577

GDP at market prices (constant 2010 US$ Billion)	296.29	475.91	578.41	676.75	1019.6	1511.5	706.04
External balance on goods and services (% of GDP)	-1.104	-1.733	-0.086	-0.659	1.755	-1.400	-0.476
Gross fixed capital formation (% of GDP)	-	-	18.819	16.396	16.477	20.249	17.703
Gross fixed capital formation (annual % growth)	-	-	-7.375	2.607	9.305	4.799	2.615
Inflation, consumer prices (annual %)	-	11.729	10.769	10.684	6.470	4.889	9.203
Population growth (annual %)	2.477	2.729	2.878	2.771	2.721	2.759	2.724
Rural population (% of total population)	83.886	80.102	75.785	71.215	67.307	63.518	74.358

Source: Author's Computation from the World Bank (2016) World Development Indicators

From table 1 above, we can clearly see that the growth rate of GDP per capita was higher in the 1960s than in the 201-2015 period. GDP per capita growth performed the poorest in the 1970-1979 period having an average value of -1.404 percent. It also performed very poorly in the 1980s since its average value was -0.774. On the whole, the average GDP per capita growth from 1960-2015 was 0.832 percent. Through the period considered, population growth rate was higher than GDP per capita growth rate. This indicates that Sub-Saharan Africa is entrapped in a low-income equilibrium level. Also, annual GDP growth was lowest in the 1980s and 1990s. The periods actually mark the reform era of the Sub-Saharan African economy. The table shows that more recent annual GDP growth rate (2010-2015) is just slightly higher than that of the 1960s, External balance (as a percentage of GDP) was lower in the 2010-2015 period than in the 1960s. The annual growth rate of physical capital (measured by GFCF) peaked in 2000-2009 period and was lowest in the 1980s reaching a low value of -7.375 percent. Inflation has been consistently falling in the region and it reached 4.889 percent in the 2010-2015 period. Following a similar trend, rural population as a percent of total population in Sub-Saharan Africa has been declining.

The region needs to optimize both domestic funds and international transfers in order to accelerate her growth and development goals. Remittances inflows have over the years become the major source of foreign exchange and international transfers into Sub-Saharan Africa. Figure 1 below shows both foreign direct investment (FDI) and remittances inflows to the Sub-Sahara African region from 2001 to 2019.

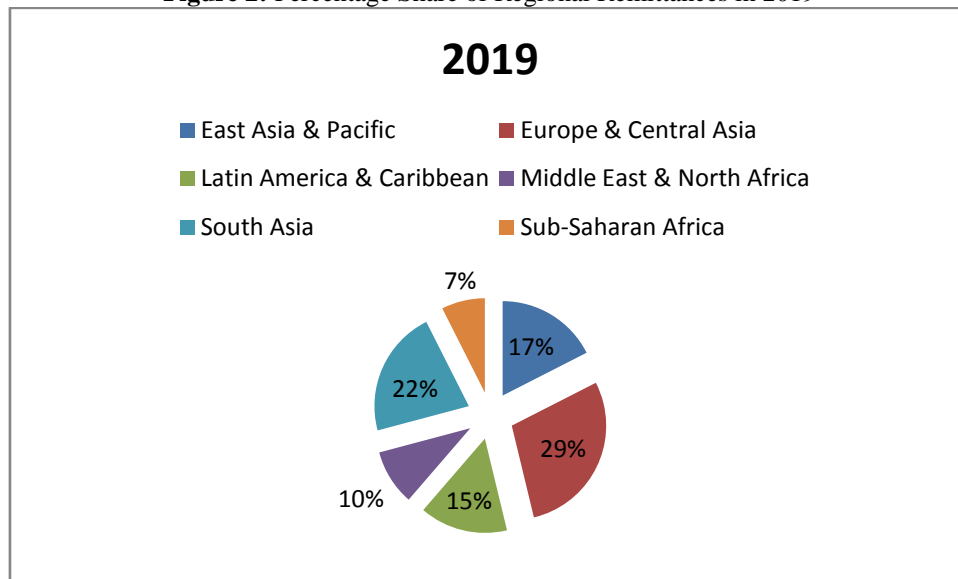**Figure 1: FDI and Remittances Flow to Sub-Saharan Africa from 2001 to 2019**
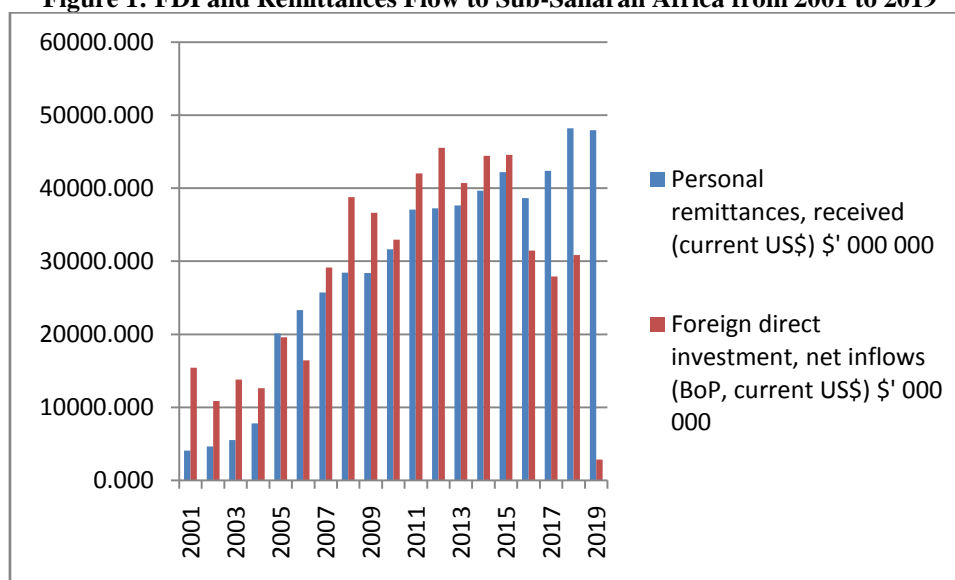
Source: Author's Computation from the World Bank (2019) World Development Indicators

From figure 1 above, we can clearly see that remittances inflows into Sub-Saharan Africa have increased between the periods considered. The bar-chart indicates that both remittances and FDI have an upward trend from 2001 to 2015. Also, except for 2005 and 2006, FDI exceeded remittances between 2001 and 2015. However from 2016, foreign direct investment experienced huge decline with remittances inflows into the region largely exceeding FDI between 2016 and 2019.

However, despite the recent increase in remittances inflows into the region and given the increasing emigration of Sub-Sahara Africans to advanced (industrialized) economies, Sub-Saharan Africa has the lowest

international remittances net inflows when compared to other regions of the world (World Bank, 2016). For example figure 2 shows the percentage share of remittances in 2019 in six regions of the world.

Figure 2: Percentage Share of Regional Remittances in 2019

Source: Source: Author's Computation from the World Bank (2019) World Development Indicators

Figure 2 show that in 2019 the Europe and Central Asia region has the largest proportion of international remittances inflows with 29 percent. With 22 percent, South Asia has the second percentage share of world remittances received while East Asia and Pacific has accounted for 17 percent of the total share. Sub-Saharan Africa account for only 7 percent which made it lowest amongst the six regions considered.

The effect of remittances on economic growth has been a source of theoretical debate amongst intellectuals; nonetheless, the role of international remittances in economic performances largely depends on the use of remittances by remittances recipient countries such as consumption, human capital development and investment. It is widely viewed that if international remittances inflows are utilized for the consumption of locally produced products and services, human capital development and/or physical investments in any economies, remittances inflows will have important positive impacts on economic growth and development. Barajas et al. (2009) states that remittances affects economic growth in three ways: firstly, international remittances may increase the rate of physical and human capital and thus reduce the cost of capital in recipient countries; secondly, remittances inflows may negatively affect labour force participation when remittances funds are substituted for labour income (wages and salaries); and lastly, remittances inflows can serve enhance the efficiency of investment by affecting total factor productivity growth. Apart from the theoretical controversies, there are also empirical discrepancies on the impact of international remittances inflows on economic growth and performance. For example while Nyeadi and Atiga (2014), Mwangi and Mwenda (2015) and Salahuddin and Gow (2015) found significant and positive causal relationship between remittances and economic growth, Adarkwa (2015) and Ferdaous (2016) found that remittances inflows affect economic growth negatively. Therefore, this study attempts to provide answers to the following questions:
i.   What is the effect of remittances on economic growth in Sub-Saharan Africa?
ii.   What is the direction of causality between remittances and economic growth in Sub-Saharan Africa?

1.2   Objective of the Study
The main objective of the study is to empirically investigate the impact of remittances inflows on economic growth of Sub-Saharan Africa.
The specific objectives of this study are to:
Empirically ascertain the effect of remittances on economic growth in Sub-Saharan Africa.
Determine the direction of causality between remittances and economic growth in Sub-Saharan Africa.
To draw policy implications based on the above objectives.

1.3.   Hypothesis of the Study
Consistent with the above –stated objectives, these set of null hypothesis (H) are stated below:
H_0: Remittances inflows do not significantly affect economic growth in Sub-Saharan Africa.
H_0: there is no causal relationship between and economic growth in Sub-Saharan Africa.

II. Literature Review

Remittance is described as the transfer of funds by an oversee worker or individual to another person in his or her home country. Remittances have become a viable source of foreign exchange and foreign capital in developing regions such as the Sub-Saharan Africa. Remittances have not only significantly increased in a positive direction but have also showed to be much more stable than other private capital inflows and Overseas Development Assistance (ODA) (Ahortor and Adenutsi, 2009). According to the World Bank (2006a), Remittances are a reliable source of foreign capital and the least volatile source of foreign exchange since the 1990s and account for about a third of global finance. Despite of the consistent rising trend in international remittances flows, the consequent of this for less developed economies seems rather ambiguous. However, higher remittances inflows could lead to rapid economic growth rate, macroeconomic stability and improved livelihoods. Mbutor (2010) opines that international remittances inflows promotes macroeconomic stability by the reduction of the probability of current account reversals when capital inflows decline and in the face of international economic crisis leading to fall in national reserves. Remittances can help to stem investors' panic and result in greater demand for goods and services which facilitates economic growth (Lartery, 2011). In the same vein, Ramirez (2013) asserts that remittances inflows can pick up the growth pace of the economy by enhancing financial development, serving as a veritable source of finance for entrepreneurial ventures, bridging the saving gap, insuring against shocks and household capital formation financing. International remittances inflows have become a significant source of government revenue (through the taxation) and household income and remittances play important role in poverty reduction and income redistribution (Iheke, 2012).

Iheke (2012) investigated the impact of remittances on economic growth in Nigeria between 1970 and 2010 and found that remittances inflows have positive and significant effect on economic growth in Nigeria. Sani and Hassan (2015) examined the effect of remittances on economic growth in Nigeria from 1970 to 2014 using the Generalized Method of Moments (GMM) found positive significant relationship between remittances and economic growth. More so, Karamelikli and Bayar (2015) studied the relationship between remittances inflows, foreign direct investment (FDI), and economic growth in Turkey during the period 1974-2013 by using ARDL methodology. Their results found that remittances inflows and foreign direct investment (FDI) had positive effect on economic growth. In the same light, Mustapha and Ogboi (2014) examined the impact of remittances on economic growth in Sub-Saharan Africa by focusing particularly on the financial development and investment channels. They found that remittances enhance economic growth in the Sub-Sahara African region and that financial development and investment played crucial role in the connection between remittances and economic growth. Tchamanbé and Miamo (2012) investigated the connection between remittances, poverty and economic growth in Sub-Saharan African countries and found that remittances are core elements in enhancing economic growth in the same manner as investments. Fayissa (2010), using a panel data from 1980 to 2005, examined the impact of remittances on economic growth in 18 Latin American countries found that remittances have a significantly positive effect on economic growth through providing alternative source to finance investment and help overcome liquidity constraints where the financial systems are underdeveloped.

However, it is also possible that huge remittances inflows could be as a result international brain drain stemming from migration. Additionally remittances could result to higher inflation, dollarization, over-reliance and desertion of the pursuit of pro-growth economic policies, and moral hazards where remittances recipients become heavily dependent on these transfers and thus reducing labour supply (Adenutsi, 2014). Adenutsi (2014) further assert that higher remittances inflows to developing countries could also result in real exchange appreciation and less international competiveness which culminates to what is referred as the "Dutch Disease". Most countries in the Sub-Sahara African region are largely consumer economies and thus increased remittances inflows may be channeled to the consumption of foreign products which in turn encourages imports and further worsening the current account and balance of payment account (BOP) of the recipient countries. Therefore, remittances inflows could possibly be to the detriment of economic growth less developed and developing countries. According to Chann, Fullenkamp and Jahjah (2005) international remittances can prevent economic growth if remittances inflows are used by individual recipients to reduce their labour supply to the economy and this situation occurs when individual recipients who were formerly active in the labour market intentionally withdraws their service and largely depend on the benefactor migrants for their survival and livelihood. Nyasha and Odhiambo (2019) investigated the effect of remittances on economic growth in South Africa and the results of their study found that remittances inflows impact the South African economy negatively both in the short run and long run. More so, Mehedintu et al. (2019) examined the trends of remittances received share in GDP and the effect of remittances on economic growth in Romania between 2008 and 2017 using polynomial-time regression and difference equation models. They found that while international remittances are stable and important source of financial transfers to the country, remittances impact economic growth negatively and this is as a result of the migration of skilled labour (international brain drain). The negative effect of remittances on the economy may also be caused by unproductive utilization of remittances and according to Ferdaous (2016), most remittances receipts are not directed to productive areas and the intent of remitting to home countries is mainly

altruistic rather than profit driven. Using the RDL model, Datta and Sarkar (2014) found that there is a likelihood of a long-run relationship between remittances inflows and economic growth in Bangladesh, but there is no predictive causal relationship between remittances and GDP, neither in the long-run nor in the short-run. Employing the seemingly unrelated regression (SUR) analysis and Error Correction Model (ECM), Danmola and Abba (2013) recommended that remittances inflows can only significantly contribute to the Nigerian economy if and only if the financial institutions and systems are well structured and made more competitive to provide remittance services at lower cost.

III. Model Specification And Estimation Methodology

3.1 Model Specification

The model of this study is based on the work of Guiliano and Ruiz-Arranz (2006), Jongwanich (2007), Fayissa and Nsiah (2008) and Mustapha (2014). This study adopts the model of Mustapha (2014) which states that extended version of the neoclassical economic growth model is represented as:

$$Y_{i,t} = \alpha_0 + \mu_i + \beta_i^* X_{i,t} + \varepsilon_{i,t} \; ; \quad \varepsilon_{i,t} \approx N(0, \delta^2\eta) \tag{3.1}$$

Where $Y_{i,t}$ = Natural logarithm of per capita GDP in country i at time t;

$X_{i,t}$ = Vector of the independent variables including remittance inflows (REM), gross fixed capital formation used to proxy investment in physical capital (GFCF), foreign direct investment (FDI), foreign aid (FAID), population growth (POGR) and foreign exchange rate (OEXH).

μ_i = Country specific, time invariant effect;

β_i^* = Scalar vector of coefficients of $\beta_1 \ldots \ldots \beta_7$

$\varepsilon_{i,t}$ = Error term with E $(\varepsilon_{i,t})$= 0 and var $(\varepsilon_{i,t}) = \delta^2\eta$

A priori **expectations**

It is expected that remittances inflows, the openness to trade, gross fixed capital formation, foreign direct investment and foreign aid will be positively related to per capita GDP, a measure of economic growth.. Population growth is expected to be inversely related to per capita GDP. Foreign exchange rate also has a negative relationship with per capita GDP.

The coverage of the study is 35 Sub-Sahara African countries over an 11 year period involving panel data. The model may then be re-estimated as follows:

Consider a panel of *i* countries, observed over *t* periods of time as to the evolution of their per capita GDP, *PCGDP$_{it}$ (i=1,2…….Z; t=1,2,………T)* . Therefore, following Baltagi et al (2007) and Adamu et al. (2016), we specify a basic model for the empirical analysis of the determinants of economic growth. In particular, the study specifies the following functions in log form:

$$ln\, PCRGDP_{it}= \beta_1 lnREM_{it}+ \beta_2 lnGFCF_{it}+ \beta_3 lnFDI_{it}+ \beta_4 lnFAID_{it}+ \beta_5 lnPOGR$$
$$+ \beta_6 lnOEXH_{it}+ \varepsilon_{it} \tag{3.2}$$

Where:

ln stands for logarithms; *i* is the country index; *t* stands for time in years; PCGDP is the GDP per capita (dependent variable); REM is the remittances inflows; GFCF stands for gross fixed capital formation (used to measure investment in physical capital); FDI is the Foreign Direct Investment; FAID represents foreign aid or official development assistance; POPGR stands for population growth; OEXH is the foreign exchange rate; $\varepsilon_{it} = U_i + V_t + W_{it}$.

3.2 Estimation Methodology

Equation 3.1 tracks "Error Components Model" as expanded by Swamy and Arora (1972), and Wallace and Hussain (1990). This is as a result of the fact that there are 3 error components which include; a spatial (country) component, a time component, and a random component. The time component allows the impact of remittances on economic growth to vary over time in each country while the country component allows the impact of remittances on economic growth to vary across the countries used in the study. In this study, three methods of estimation will be utilized: the Fixed Effects Model, the Radom Effects Model and the Dynamic panel data estimating techniques. The dynamic panel data estimator is used in order to avert the recurrent issue of endogeneity and orthogonality. The study obtained data from World Bank Development Indicators for 36 Sub-Saharan African countries from 1995 to 2015. The countries are Angola, Benin, Burkina Faso, Botswana, Burundi, Cote d'Ivoire, Cameroon, Congo, Democratic Republic, Comoros, Cabo Verde, Gabon, Ethiopia, Ghana, Guinea, Gambia, The Guinea-Bissau, Kenya, Liberia, Madagascar, Mali, Mauritius, Mozambique, Malawi, Namibia, Niger, Nigeria, Rwanda, Senegal, Sierra Leone, Seychelles, Togo, Tanzania, Uganda, South Africa, Zambia, and Swaziland.

IV. Presentation And Interpretation Of Econometric Results

This study presents the econometric results obtained by using the fixed effect model, the Random effect model and the dynamic panel data or Generalized Method of Moments System (GMM SYS) estimator. All the variables in the regression equation are in logarithm. Thus, the estimated regression coefficients should be interpreted as elasticities.

4.1 Presentation and Interpretation of the Results of the Static Models (The Fixed Effect and Random Effect Models)

Table 4.1: The Static Models (Dependent Variable – PCRGDP)

Fixed Effect Model			Random Effect Model		
Variable	Coefficients	t-statistics	Variable	Coefficients	t-statistics
LNREM	-0.0034*	-1.9803	LNREM	-0.000327*	-1.8002
LNFDI	0.00334	0.9279	LNFDI	0.004592	1.29647
LNGFCF	0.1028***	9.6132	LNGFCF	0.142777***	17.98485
LNFAID	-0.002833	-0.4052	LNFAID	-0.008888	-1.38214
LNPOGR	-0.059138***	-3.7321	LNPOGR	-0.07814	-4.95106
LNOEXH	0.131616***	6.228	LNOEXH	0.06047***	4.365569
C	4.180726***	13.716	C	3.81198***	22.21607
R-Squared	0.998292		R-Squared	0.478405	
Adjusted R-Squared	0.998002		Adjusted R-Squared	0.469360	
F-statistic	3448.882		F-statistic	52.89161	
Prob (F-statistic)	0.000000		Prob (F-statistic)	0.000000	

***p<0.01, **p<0.05, *p<0.10
Source: Author's Computation Using Eviews 7

Table 4.1 presents the results of the static panel data models (fixed effect and random effect models). The results of the fixed effects and the random effects models show that remittances have a negative effect on the PCRGDP. In other words remittance inflows into Sub-Saharan Africa negatively impact on the economy of the region. This is contrary to the apriori expectation. For the fixed effects and the random effects models a 10 percent increase in remittance inflows into Sub-Saharan Africa leads to approximately 0.34 % and 0.0327 % fall in RGDP per capita respectively. The coefficient of determination (R^2) of 0.99 for the fixed effects model shows that the explanatory variables account for about 99 percent of the systematic variations in the dependent variable (PCRGDP). The remaining 1 percent is accounted for by the stochastic error term. On the other hand, for the random effects model, the coefficient of determination (R^2) of 0.48 indicates that the explanatory variables (LNREM, LNFDI, LNGFCF, LNFAID, LNPOGR and LNOEXH) account for about 48 percent of the systematic variations in the dependent variable (PCRGDP). The F-statistic of 3448.882 and 52.89 of the fixed effects and the random effects models indicate that the overall regression models are highly significant easily passing the significance test at the 1 percent level of significance. Thus, the null hypothesis of no existing log-linear relationship between per capita RGDP and the explanatory variables can be rejected at the 1 percent level of significance.

Table 4.2: Correlated Random Effects - Hausman Test
Equation: Untitled
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	390.716830	6	0.0000

Source: Author's Computation using Eviews 7

Table 4.2 above presents the results of the Hausman test. The null hypothesis of the Hausman test is that the random effects model is appropriate. The results of our computed Hausman test give a probability value of 0.0000, hence, we fail to accept the null hypothesis and conclude that the random effect regression model is not efficient. Thus, we choose the fixed effect model as our efficient model.

4.2   Presentation and Interpretation of the Results of the Dynamic Model (GMM SYS – Generalized Method of Moments System)
The generalized method of moments system (GMM SYS) estimator has been advanced as a useful technique of addressing the problems of endogeneity and orthogonality between the stochastic error term and the explanatory variables.

Table 4.3: The Dynamic Model-GMM SYS (Dependent Variable – PCRGDP)

Variable	Coefficients	t-statistics	Prob value
LNPCRGDP(-1)	0.994649***	161.3068	0
LNREM	-0.002796*	-1.848878	0.0655
LNFDI	0.00214	0.97747	0.3292
LNGFCF	0.000666	0.1602	0.8728
LNFAID	0.005211	0.98169	0.3271
LNPOGR	-0.005539	-0.75599	0.4504
LNOEXH	-0.003495	-2.75526	0.0063
C	-0.029046	-0.40171	0.6882
R-Squared	0.999083		
Adjusted R-Squared	0.999059		
J-statistic	13.25147		
Durbin-Watson stat	1.562963		

***p<0.01, **p<0.05, *p<0.10
Source: Author's Computation Using Eviews 7

Table 4.3 presents the results of the dynamic panel data model using the GMM SYS estimation technique. The results of the dynamic panel data model show that in line with expectation, the one period lagged value of PCGDP positively and significantly affect per capita RGDP. Like both the fixed effect and random effect models, remittances have a negative effect on the PCRGDP in Sub-Saharan Africa. In other words remittance inflows into Sub-Saharan Africa negatively impact on the economy of the region. This is contrary to the apriori expectation. Unlike the static models, its coefficient is significant easily passing the significance test at the 10 percent level. A 10 percent increase in remittance inflows into Sub-Saharan Africa leads to approximately 0.27 % decrease in RGDP per capita.

Table 4.4: Wald Test

Test Statistic	Value	df	Probability
F-statistic	75720.48	(7, 346)	0.0000
Chi-square	530043.4	7	0.0000

Source: Author's Computation using Eviews 7

Table 4.4 presents the Wald test results. The Wald test is concerned with testing the null hypothesis that a set of parameters is equal to some given value. The null hypothesis in our dynamic panel model is that the seven coefficients of interest are simultaneously equal to zero. Hence, given our p-value 0.0000 which is less than the criterion of 0.01, we can clearly reject the null hypothesis and conclude that the coefficients are not simultaneously equal to zero.

Table 4.5: Granger causality Test

Sample: 2005 2015			
Lags: 2			
Null Hypothesis:	**Obs**	**F-Statistic**	**Prob.**
LNREM does not Granger Cause LNPCRGDP	312	0.09808	0.9066
LNPCRGDP does not Granger Cause LNREM		5.59736	0.0041
LNFDI does not Granger Cause LNPCRGDP	299	1.07560	0.3424
LNPCRGDP does not Granger Cause LNFDI		3.09505	0.0468
LNGFCF does not Granger Cause LNPCRGDP	310	4.53956	0.0114
LNPCRGDP does not Granger Cause LNGFCF		0.82241	0.4403
LNFAID does not Granger Cause LNPCRGDP	324	4.53443	0.0114
LNPCRGDP does not Granger Cause LNFAID		3.29903	0.0382
LNPOGR does not Granger Cause LNPCRGDP	321	0.63004	0.5332
LNPCRGDP does not Granger Cause LNPOGR		5.86295	0.0032
LNOEXH does not Granger Cause LNPCRGDP	324	3.86129	0.022
LNPCRGDP does not Granger Cause LNOEXH		0.68202	0.5063
LNFDI does not Granger Cause LNREM	290	1.22487	0.2953
LNREM does not Granger Cause LNFDI		0.27357	0.7609
LNGFCF does not Granger Cause LNREM	298	1.05156	0.3507
LNREM does not Granger Cause LNGFCF		0.54715	0.5792
LNFAID does not Granger Cause LNREM	312	6.23689	0.0022
LNREM does not Granger Cause LNFAID		0.05986	0.9419
LNPOGR does not Granger Cause LNREM	309	6.06856	0.0026
LNREM does not Granger Cause LNPOGR		1.38839	0.2511
LNOEXH does not Granger Cause LNREM	312	2.02995	0.1331

LNREM does not Granger Cause LNOEXH		0.29823	0.7423
LNGFCF does not Granger Cause LNFDI	285	16.7156	1.00E-07
LNFDI does not Granger Cause LNGFCF		1.54031	0.2161
LNFAID does not Granger Cause LNFDI	299	8.63639	0.0002
LNFDI does not Granger Cause LNFAID		0.08733	0.9164
LNPOGR does not Granger Cause LNFDI	296	0.63365	0.5314
LNFDI does not Granger Cause LNPOGR		0.62076	0.5382
LNOEXH does not Granger Cause LNFDI	299	0.31911	0.727
LNFDI does not Granger Cause LNOEXH		1.60371	0.2029
LNFAID does not Granger Cause LNGFCF	310	8.24304	0.0003
LNGFCF does not Granger Cause LNFAID		1.07606	0.3422
LNPOGR does not Granger Cause LNGFCF	307	1.21750	0.2974
LNGFCF does not Granger Cause LNPOGR		0.18344	0.8325
LNOEXH does not Granger Cause LNGFCF	310	0.98098	0.3761
LNGFCF does not Granger Cause LNOEXH		2.02044	0.1344
LNPOGR does not Granger Cause LNFAID	321	1.15074	0.3177
LNFAID does not Granger Cause LNPOGR		2.27170	0.1048
LNOEXH does not Granger Cause LNFAID	324	1.20231	0.3019
LNFAID does not Granger Cause LNOEXH		3.73176	0.025
LNOEXH does not Granger Cause LNPOGR	321	2.45414	0.0876
LNPOGR does not Granger Cause LNOEXH		2.69562	0.0691

Source: Author's Computation using Eviews 7

Table 4.5 above presents the results of the Granger causality test of the variables in our model. An examination of the results reveals that there exists strong uni-directional causality from LNPCRGDP to LNREM and at the 5 percent level. Also, there is strong uni-directional causality from LNPCRGDP to LNFDI. LNGFCF Granger-cause PCRGDP and LNGFCF is not Granger-caused by PCRGDP. Thus there is uni-directional causality from LNGFCF to PCRGDP. LNFAID Granger-cause PCRGDP and LNFAID is not Granger-caused by PCRGDP. Thus there is a bi-directional causality between LNFAID and PCRGDP. LNPOGR does not Granger-cause PCRGDP while LNPOGR is Granger-caused by PCRGDP. Thus there is uni-directional causality from PCRGDP to LNPOGR. LNOEXH Granger-cause PCRGDP but PCRGDP does not Granger cause LNOEXH. Thus, there is uni-directional causality from LNOEXH to PCRGDP.

V. Summary Of Findings, Policy Recommendation And Conclusion
5.1 SUMMARY OF FINDINGS
The main objective of this study is to investigate the impact of remittances on economic growth in Sub-Saharan Africa. The study covered the period of 1995 to 2015 for 35 Sub-Sahara African countries. The data used were secondary panel data sourced from the world development indicator (WDI) of the World Bank (2016). The logarithm of per capita RGDP which is the dependent variable was used to measure economic growth in Sub-Saharan Africa. The explanatory variables were remittances inflows, foreign direct investment (FDI), gross fixed capital formation (GFCF) used to measure physical capital, population growth and official exchange rate. All variables were in their logarithm forms in the various models of this study. The econometric

methodology used were the fixed effects model, random effects model, the Hausman test, the dynamic panel data model using the Generalized Method of Moments System (GMM SYS) and the Granger causality test.

I. The econometric results of both the static (fixed effects and random effects) and the dynamic panel data models revealed that remittances inflows significantly affect the economy of Sub-Saharan Africa negatively.

II. Other variables that negatively affect economic growth of the region are population growth and official exchange rate.

III. Foreign direct investment (FDI), foreign aid and gross fixed capital formation were found to have positive impacts on Sub-Sahara African economy, though their individual effects are insignificant.

IV. For the static models, the Hausman test revealed that the fixed effect model is more efficient than the random effect model.

V. The Wald test carried out for our dynamic panel data model revealed that the coefficients of the model are not simultaneously equal to zero.

VI. The Granger causality test revealed that there exists uni-directional causality from economic growth to remittances inflows in Sub-Saharan Africa. The Granger causality test also showed that there exists strong uni-directional causality from foreign aid and population growth to remittances flows into Sub-Saharan Africa.

5.2   POLICY IMPLICATIONs and RECOMMENDATIONS

FDI, FAID and GFCF have positive effect on per capita RGDP while remittances inflows, population growth and official exchange rate were found to negatively affect per capita RGDP. This implies that in Sub-Saharan Africa, economic growth is majorly driven by foreign direct investment (FDI), foreign aid (FAID) and physical capital while growth of the Sub-Sahara African economy is deterred by higher remittances, population growth and official exchange rate. Hence, the following policy recommendations can be drawn from the findings of this study.

1)   for Sub-Saharan Africa to enhance her economy, the various government of the region need to set up institutions and policies that will encourage and promote foreign direct investment, foreign aid and physical capital. To encourage foreign direct investment into the region, the governments of Sub-Saharan Africa should (i) create a conducive environment that will enhance business activities and profit making. To do this, maximum security should be put in place in the region. (ii) There should be sincere measures and strong commitment from both the governments and people of the region (SSA) to tackle the issue of incessant crisis (religious, ethnical and political) ravaging the region. This will create peace and stability in the region which is very good for investment and will thus attract foreign direct investment inflows to SSA. (iii) Apart from the exploration, exploitation and exportation of primary products from Sub-Saharan Africa, the region has several lucrative sectors that foreign investors can profit immensely from. International investors are most likely to profit hugely from investing in the manufacturing sector of the region. This is due to the fact that the region has fertile lands, abundant mineral resources and large population which serve as raw materials for manufacturing and large markets for the finished products. Thus, it is the responsibility of the various governments of Sub-Saharan Africa to publicize the various investment opportunities to other regions of the World especially the developed regions (as they have more capital to invest).

2)   To encourage foreign aid from international organizations and developed countries, the region should channel past foreign aids to areas in which they were initially assigned. For example, if foreign aid is given to solve the issue of polio in Sub-Saharan Africa, the funds should not be diverted into fighting corruption or digging boreholes. Diverting foreign aid will discourage future flow of such aids into the region.

3)   Physical capital or domestic investment clearly affects economic growth positively in Sub-Saharan Africa. Thus, the governments of the region need to set up policy framework and establish effective institutions to promote domestic investment. Some of the measures to be taken to enhance domestic capital include: set a real effective interest rate, reduce interest rate spread (the gap between the interest rate on savings and lending), promote peace in all nook and cranny of the region, abolish all forms of double taxation in the region.

4)   Remittances inflows were found to negatively affect economic growth in Sub-Saharan Africa. A possible cause may be that remittances inflows to the region are used basically for altruistic purposes and not channeled into productive activities. Also, families with extra funds from remittances may use these funds to purchase foreign products, hence, increasing importation which in turn leads to a higher exchange rate. From theory and our findings, higher exchange rate reduces economic growth, thus, higher remittances invariably leads to a fall in economic growth in Sub-Saharan Africa. Therefore, Sub-Saharan Africans should invest their extra funds from remittances inflows in production of goods and service and also in the purchase of locally manufactured products as this will enhance the economy of the region. More so, higher remittances may imply greater emigration from the region which in turn may lead to loss of Sub-Sahara African elites to other regions or what is known as international brain drain. This will invariably reduce the supply of skilled labour and the

quality of education in the region which will affect economic growth negatively. Hence, policies regarding emigration should be put in place to prevent the current inordinate emigration of the region's finest elites to other parts of the world.

5)   The results of the dynamic panel data model show that official exchange rate negatively affects per capita real GDP in Sub-Saharan Africa. This implies that higher official exchange rate discourages economic growth. This is because higher exchange rate can lead to higher inflation rate, higher cost of importation (this can deter economic growth because Sub-Saharan Africa depends on her imports for virtually all her manufactured and industrial products) and so on. Therefore, the governments of SSA should identify those factors that amplify exchange rate and implement policies and measures to halt them. These measures can be in form of: engage in export promotion programmes; establish import substitution industries in the region; equip hospitals and properly train medical practitioners so as to reduce the number of Sub-Sahara Africans going to other regions for treatments and checkups; and develop local sports and tourism so as to egg on international tourists to come to the region.

6)   Finally, as expected, population growth has a negative effect on per capita RGDP. This implies that higher population growth serves as a drag to the growth of Sub-Sahara African economy. Increase in population growth may reduce the availability of resources to both consumers and producers which in turn may lead to delays due to queuing, slow pace of economic activities, higher importation which also leads to higher exchange rate, rationing and so on. Also, excessive rise in population growth rate may lead to congestion, overstrained infrastructural facilities and social amenities, outbreak of diseases, unemployment, poverty, hunger and social crisis. Therefore, the governments of the region should sensitize the masses and people of the region on the various disadvantages of excess child births and formulate birth control laws. This will help curb the high population growth rate of the region. Also, families in Sub-Saharan Africa should seek medical advice on family planning and adopts a family plan when they have had their required number of children. This will prevent unwanted pregnancies in families in the region.

5.3   CONCLUSION
The study has established that remittances have a negative impact on economic growth and there is only uni-directional causality from economic growth to remittances. Therefore we conclude that remittances undermine economic growth in Sub-Saharan Africa and thus the region should focus more on the traditional sources of growth such as domestic investment or physical capital, foreign direct investment (FDI) and exports. The region should focus more on improving the quality of its local products and also increasing the consumption of such products as these actions will drive economic growth.

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