RESEARCH ACADEMY OF
SOCIAL SCIENCES

Do Remittances Improve the Economic Growth of Africa?

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Abstract

This paper assesses the effect of remittance money amongst other variables on the economic growth of Africa through the experiences of Cameroon, Kenya, Lesotho, Morocco and Nigeria which are situated in different sub-regions, and sub-regional schemes and are representative of the classification table of remittances into Africa. Data for the study is collected from the World Bank Development Indicators, covering a period of 31 years from 1980 to 2010. The estimation technique used for this study is the two stages least square method. The analyses (both descriptive and empirical) showed that remittance money has a positive and significant effect on economic growth in both the aggregate model and disaggregated models. The paper concludes that these findings are important and should be taken into consideration in the design of prgrammes and policies relating to remittances in Africa. In fact, the behavior of this variable should be incorporated in the approaches, programmes and policies of remittances in the different sub-regions and economic groupings in Africa. Really, an important conclusion is that ways should be explored to increasingly channel remittance money to productive investments.

Key words: Effect, Remittances, Economic growth, Africa

JEL Classification: F43, F21, O11, O57

1. Introduction

Remittances are considered substantial and increasingly important sources of external finance that are growing not only nominally but also relatively in relation to other transfers to developing countries (Dovelyn, 2006). Although high income countries remain the dominant sources of remittances, a non-negligible portion originates from developing countries. Over the past five years, the quantity of remittances going to the developing countries has doubled (World Bank: 2006). Sub-Saharan Africa was at the bottom of the table of remittance receipts, amounting to US$ 8.1 billion in 2005 which represented a 72% increase from the 2001 figure of US$ 4.7 billion. In terms of remittance/GDP, Lesotho, Cape Verde, Guinea Bissau and Senegal top the chart.

However, after several years of strong growth, remittance flows to developing countries began to slow down in the third quarter of 2008. This slowdown deepened further in 2009 in response to the global financial crisis, although the exact magnitude of the growth moderation is hard to determine given the uncertainties about global growth. In nominal dollar terms, officially recorded remittance flows to developing countries were estimated to reach $283 billion in 2008, up 6.7 percent from $265 billion in 2007; but in real terms, remittances were expected to fall from 2 percent of GDP in 2007 to 1.8 percent in 2008. This decline, however, was smaller than that of private or official capital flows, implying that remittances were expected to remain resilient relative to many other categories of resource flows to developing countries. In 2009, remittances were expected to fall by 0.9 percent (Ratha et al., 2008). Though remittances flow to Africa are considerably lower than Overseas Development Assistance (ODA) and Foreign Direct Investment

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(FDI) flows, they are however stable. This suggests that through the securitization of future flows, they can potentially ease access to, and lower borrowing costs for international capital.

The impact of traditional and institutional factors on economic growth and development of African countries have equally been investigated to a large extent. Unfortunately, the relationship between the increasing and steady flow of remittances to Africa and its economic growth has not been adequately studied Bichaka et al. (2010). Also, Buch et al. (2002) hold that financial transfers in the form of worker remittances have received less attention in the debate on the risks and benefits of the globalization of international capital market. From the foregoing, it is shown that remittances facilitate human capital formation mainly by providing access to education and health. They also lead to an increase in investments and the reduction of poverty, especially within recipient households. Remittances have also been critical sources of foreign exchange for the national accounts and have been found to promote macroeconomic stability. Unfortunately, there is mixed evidence on how remittances impact on long term growth in the continent. Is this the case for different groups of African countries? The global objective of this paper is therefore to assess the effect of remittances amongst other factors on the economic growth of Africa. More specifically the paper sets out to determine if remittance money among other variables improves the economic growth of Cameroon, Kenya, Lesotho, Morocco, and Nigeria. In the light of the above objectives the paper assumes that remittances do not significantly improve the growth of African economies and that the effect of remittance money on economic growth does not differ amongst African countries.

The paper is structured as follows: The first section introduces the paper. Section two situates the paper in its proper perspective by reviewing both theoretical and empirical literature on remittances. Section three discusses the method of analysis. Empirical evidence of the effect of remittance money on growth amongst other variables is reported in section four. Section five then concludes the paper with some policy issues.

2. The Economics of remittances

2.1 Theoretical Literature

The concept of remittances

Remittances include accumulated transfers of earnings or stock of wealth by individuals or groups of migrants to their home countries as some sort of contract agreed upon between these migrants and their families. Such transfers are usually meant to support dependents, repay loans, invest or for other purposes. To Wahba (1991) remittances can be grouped into four categories: potential remittances i.e left over money with the migrant after all expenditure in the host country; fixed remittances i.e the minimum amount of money a migrant needs to transfer to meet the basic needs and obligations of relations back at home; discretionary remittances i.e transfer in excess of fixed remittances; and retained savings i.e the difference between potential remittances and the amount transferred during the period.

This categorization of remittances has important policy implications given that each transfer is motivated differently. For example, fixed remittances are occasioned by the need to diversify sources of income and to meet other family obligations. As for discretionary remittances, they depend on the need to maintain a store of value in the host country or the country of origin which in turn depends on the difference between real interest rates, expected movements in exchange rates, general macroeconomic stability, the ease of conversion of one currency into another and the efficiency of the payments mechanisms between the host and home countries. Meanwhile saved remittances vary inversely with discretionary remittances. In fact an increase in discretionary remittances tends to reduce the transfer of saved remittances and consequently slows the increase of retained earnings which has the potential to assist growth and development of the migrant's home country.

Theories of Remittances

A number of studies on migration and remittances analyze the factors that influence the decision of migrants to transfer money to their home countries. To this end, Lucas and Stark (1985) and Stark (1991)

make a significant effort to develop a systematic theory of remittances in the case of developing countries. These theories are categorized into pure Altruism, pure self-interest and tempered Altruism or enlightened self-interest.

According to the Pure Altruism theory, the migrant derives satisfaction from the satisfaction of the rest of his or her family members in the home country. The satisfaction a household gets depends on its average consumption. The migrant's satisfaction depends on his or her own consumption and on the average satisfaction of the rest of the family members in the home country. In this context, the migrant would choose the quantity of remittances that would maximize his or her satisfaction function. From this theory, we contend that remittance money increases with the migrant's wage level and that remittances to less well-off households are higher. This implies that whether the effect of household size on the level of remittances is positive or negative depends on either economies or diseconomies of scale in consumption, the change in marginal utility of home consumption and on the consideration if the migrant has a preference for some members of the household in the home country.

Pure Self-interest theory of remittances identifies three motives for remittances. Firstly, the migrant believes that by sending money to the family at home a significant fraction of the family wealth would finally belong to him or her. Following this motive, the larger the potential inheritance, the larger the remittances. The second reason is to accumulate assets in the form of land, houses and livestock at home with a family member acting as agent who takes care of the property. Another reason for sending remittance money is the desire to return home and carry out some investments or some development projects especially when the migrant has some political ambitions. Finally remittance money is motivated by altruistic and self-interest reasons.

The inability of the above two theories to adequately explain the nature of remittances led Lucas and Stark(1985) to develop a tempered altruistic theory of remittances. This theory considers remittances as part of an inter-temporal, mutually beneficial contractual arrangement between the migrant and the household in the country of origin with a possibility of investment and risk.

As an investment the family educates the migrant worker and expects returns in the form of remittances. This makes it such that remittances are higher for more educated migrants than for in-laws and even spouses. In terms of risk, it is seen that most developing countries' financial markets and insurance markets are not well developed and income especially agricultural income fluctuates greatly. Consequently, migration is seen as a rational decision which makes it possible to diversify the household's wealth.

The prevailing economic conditions in both the home country and the host country influence to some extent the flow of remittance money. When the home country is facing adverse conditions such as natural disasters, the migrant tends to remit relatively more. On the other hand when the migrant is in difficulties such as being unemployed the family at home makes some transfers to him or her.

So far, the theory of enlightened altruism makes a number of observations between the structure/performance of the economy, education and other considerations on the one hand and flow of remittances on the other hand. As concerns the structure of the economy , it is shown that in an economy with high ratio of agriculture to GDP, a decline in key industries, a prevalence of natural disasters would tend to be associated with higher rates of migration and consequently a greater level of remittance money. Here, an unfavorable economic situation in the host country would reduce remittance flow. Also, migration is greater for more educated members of the household and so too remittance flow is higher for this category of migrants. Meanwhile the level of remittances varies positively with size of household at home and negatively with the age of the migrant and duration of time abroad. In terms of gender, female migrants tend to remit more for family care, while male migrants tend to remit more for inheritance related reasons.

2.2 Empirical Literature

Gupta et al. (2007) in examining the impact of remittances on poverty hold that they augment recipient households' resources, smooth consumption, provide working capital, and have multiplier effects through increased household spending. In the case of Ghana, they are counter cyclical and over time help to smooth

household consumption and welfare. On long term growth the impact of remittance money depends on how households use it, how migration affects the domestic labour supply and output, how recipient households respond to transfer of this money and whether remittances increase the ratio of money supply to gross domestic product. Also in a study of the impact of remittances on financial development they found that remittances promote financial deepening in Africa. Meanwhile Chami et al (1991) found robust evidence that remittances have a negative impact on output growth volatility of recipient countries. This implies that remittance money has a stabilizing influence on output. Hence, the fall in remittances precipitated by the 2008 global financial crisis increased output variability in recipient countries. Bichaka and Nsiah (2010) in Chami and Jahjah (2003) explored the aggregate impact of remittances on economic growth within the neoclassical growth framework using an unbalanced panel data spanning from 1980 to 2004 for 37 African countries and show that remittance money boosts growth in countries where the financial systems are less developed by providing an alternative means to finance investments and help overcome liquidity constraints. Goldberg and Levi (2008) observe that remittances have become even more important than foreign direct investments (FDI) as a source of capital inflow to needy nations, exceeding FDI for the first time in 2006 when remittances topped US \$300 billion and FDI only totaled US\$167 billion. In this year Official Development Assistance (ODA) were nearly three times as large as the US \$104 billion ODA received. They also show that countries that are destinations for most remittances tend to be characterized by inequality and volatility and usually have undeveloped financial markets. Remittance money steps in to serve as substitute financial markets allowing families to finance investments which spur economic development. Sander and Meunzele (2006) noted that for many African households and nations, remittances are a very important source of finance and foreign exchange which help to stabilize irregular incomes and build human and social capital. Recipients of this money are typically better off than their peers who lack this source of income nationally. This money has a substantial effect on the B.O.P and on foreign exchange revenues. Unfortunately, remittances flows to Africa are under reported and its effect on economic growth and development is not adequately studied. In an analysis of immigrant remittances in Africa, Sander and Miambo (2003) found that throughout Africa financial and monetary policies and regulations have created barriers to the flow of remittances and effective investments. Only a few governments have recognized the important contribution of remittances and facilitated foreign exchange transactions or provided investment incentives such as matching grants. This means that only a few countries in Africa effectively benefit from these funds in terms of progress in economic growth and development. The World Bank (2006) argued that, despite the increase of inflows of capital to Africa, there is still a fall in the resources needed to fund the attainment of the internationally agreed development goals. To this end, it recommends mobilization and more effective use of both domestic resources and international flows. This study equally showed that due to low private savings and chronic government budget deficits, many African countries experience a shortage of funds to meet their investment needs and more generally their development goals. ERA (2007) showed that in 2003 Africa was the second fastest growing region in the developing world. This growth is attributed to higher oil prices and production, rising commodity prices, increased direct foreign investments and, better macroeconomic management backed up by good weather conditions. This study completely ignored the incidence of remittances on African growth. However, it goes ahead to show that West and Central Africa exhibits respectable growth rates above 3.5 percent. East and Southern Africa, in contrast registered a growth of 2.5% while North Africa tops the sub regional economic performance in 2003 with a growth rate of 4.7%. The important question to answer is whether the impact of remittances on economic growth will reflect therefore the mentioned pattern of economic performance. Chami et al. (1991) have demonstrated that remittances can assist to improve a country's development prospects, maintain macroeconomic stability, mitigate the impact of adverse shocks and reduce poverty. Is this positive picture homogenous for different groups of African countries? This is the pre-occupation of the current paper. Chami.and Jahjah (2003) equally observed that remittances are increasingly perceived as a relatively attractive source of external finance for developing countries helping to foster development and smooth crisis. They noted that the presumption in the literature and among policy makers that migrant remittances play the same role in economic development as foreign direct investment and other capital flows is an open question. They develop a model of remittances based on the economics of the family that implies that remittances are not

profit driven but are compensatory transfers that have a negative correlation with GDP growth. Testing this model with a panel data set on remittances they find a robust negative correlation between remittances and GDP growth. They then conclude that remittances may not be intended to serve as a source of capital for economic development.

Chami et al. (2008) in a study of 113 countries using time series data from 1970 to 1998 show that international remittances significantly affect negatively economic growth. They show evidence of a significant negative relation between international remittances and economic growth for countries in different regions and conclude that remittances do not constitute an important determinant of economic development.

In a related study, Freund and Spatafora (2005) using a sample of 100 countries for the period 1970 to 2003, found on the contrary no statistically significant relation between international remittances and real growth, investment, and education. Here, he attributes the difficulty of determining the effect of remittances on growth and its components to problems of reverse causation.

Elsewhere, it is held that international remittances retard growth through a real currency appreciation and reduced competition in tradable goods. This is illustrated by Lopez et al. (2007) in the case of 8 Latin American countries for the period 1990 to 2003, in which they found that international remittances significantly lead to exchange rate appreciation.

Amuedo-Dorantes and Pozo (2004) using household survey data from the Dominican Republic in an econometric analysis of the effect of remittances on family business ownership shows that there is no significant difference in the likelihood to own a family business between households receiving international remittances and those not receiving remittances. They attribute these findings to the possibility of remittances increasing the reservation wage of household heads or supplementing family income and reducing their incentive to invest in business.

Njamjoh (2005) found out that Cameroonians at home cook-up impossible businesses or projects and pest relatives abroad for money they end up squandering. Also remittances are usually sent home in the form of cell phones and gifts mostly to girl friends. Lindly (2007) shows that in fragile settings remittances help households to meet living expenses cope with crisis and build livelihoods although local constraints inhibit the latter. Moreover, when remittance money circulates in the wider community through market relations and social networks, it shapes the political economy. Elsewhere greater literacy levels and higher school attendance amongst 6-14 years olds are observed (Lopez and Cordova, 2006). Also remittances play an important role when the public health care system is unable to provide universal health insurance or adequate treatment and preventive care. More specifically children in migrant households are shown to have lower mortality rates and higher birth weights (Hildebrandt and Kenzie, 2005), a positive effect on infant survival (Duryea et al. 2005), and decline in child labour (Yang, 2004). Banjoko's survey in Africa (2005) quoted by Cohen and Rodriquez (2005) shows that remittances are mainly used to cover basic necessities or what other authors call good things. Cohen and Rodriquez (2005) shows that only about 8% of remittances are spent on business start ups or investments while the rest are used for daily and household expenses. However, Cornelius (1990) suggests an even higher percentage of businesses founded through remittances. From a global perspective, remittances are important sources of foreign exchange and macroeconomic stability. As concerns foreign exchange, remittances contribute significantly to the balance of payments of a number of countries in Africa. According to Sanders (2005) during the 1980s, remittances constituted more than half of the foreign exchange earnings in Lesotho and as share of exports and of GDP it made 18% and 5% respectively in Morocco. Gupta et al. (2007) hold that remittances are private intra family or intra community income transfers that directly address the single most relevant challenge for Sub-Saharan African poverty. In this way the long-term development potential is determined by what is left over after basic consumption needs are made. On the whole a large proportion of remittance money is used for human capital development which has many long term benefits. Also this money is at times used to construct large houses for migrant workers in West Africa and this spurs local economic activity through multiplier effects.

From the foregoing, literature shows that remittances can stimulate growth through supply of additional foreign exchange and funding of businesses (Amuedo-Dorantes et al. 2010), improvement in human capital (Edwards and Ureta, 2003 and Amuedo-Dorantes et al, 2008), a reduction in macroeconomic volatility (Barajas et al. 2009). Elsewhere, remittances have little or no effect on growth when this money is spent on consumption and other non productive uses. Given that remittances go to add to household income they have the potential to reduce domestic output and growth as effort to work is reduced. Considering these two possible associations between remittances and growth, it becomes imperative to investigate empirically the link between the total effect of remittances and economic growth. To this end, we analyse the effect of remittances amongst other variables on the economic growth of Africa through the experience of five African economies, namely: Cameroon, Kenya, Lesotho, Morocco, and Nigeria within the time frame 1980 to 2011.

3. The Economic Model

The literature above permits the formulation of an economic model. Before specifying this model, we describe the variables used in the study. Remittance money is a type of external finance which contributes not only to improve the welfare of those benefiting from it but also is increasingly used for income and employment generating projects. Hence, its study is of capital importance. Table1 below describes the variables used in the study along side with sources of data.

Table 1: Description of variables and sources of data

Variables	Description	Source of data	Expected sign
GDP/Capita	GDP per habitants in current US Dollars	World Development Indicator (WDI, 2011)	
Rem/Capita	Remittance per habitants in current US Dollars	(WDI, 2011)	+
Extdbt/Capita	External debt per habitants in current Dollars	(WDI, 2011)	-
Cab	Current Account Balance	(WDI, 2011)	+
Exp/GDP	Exportations per GDP	(WDI, 2011)	+
Infla	Consumption Price Index in annual variation	(WDI, 2011)	-
FDI	Foreign directs investment per GDP	(WDI, 2011)	+
GCF	Gross formation capital per GDP	(WDI, 2011)	+
Labour	Total worker in population	(WDI, 2011)	+

Source: Authors

The dependent variable is gross domestic product per capita. Naturally, it permits us to measure the growth or average output of a country. The main explanatory variable in the study is remittance money. A positive result means that migrants participate in economic activities of their home countries through remittance money. Other explanatory variables of growth are introduced in the model and this permits us to specify the model as follows:

$$GDP/Capita_{it} = \beta_0 + \beta_1 Rem/Capita_{it} + \beta_2 Extdbt/Capita_{it} + \beta_3 Cab_{it} + \beta_4 Exp/GDP_{it} + \beta_5 Infla_{it} + \beta_6 FDI_{it} + \beta_7 GCF_{it} + \beta_8 Labour_{it} + \varepsilon_{it}$$

where $\varepsilon_{it} = u_i + v_t + \eta_{it}$, u_i captures the specific individual efffects, v_t Specific effects over time and η_{it} the rest of the perturbations.

The study covers the time period 1980 to 2010. For this period, the economies of the countries under study showed a remarkable evolution. In Cameroon from Central Africa, about 4 million Cameroonians live abroad and participates in various ways to the growth of the economy. In Nigeria in West Africa, about 25million people stay abroad.

Other countries considered in the study are Lesotho from South Africa, Kenya in the East of Africa and Morocco in North Africa. These countries are considered based on their economic importance and volume of remittance inflow into these countries.

The method of estimation was chosen after conducting the Fischer and Hausman test as shown in table 2 below.

Table 2: Choosing between Panel data and OLS (Using Fischer-test) and choosing between Fixed and Random effets (Using Hausman-test)

Tests	Probability	Degree of freedom	Statistic
Fischer-test	0.000	(3,104)	43.42

Source: Authors

The above test was conducted on the global model. The coefficient of the Fischer-test with (3,104) degrees of Freedom is 43.42 which is positive and statistically significant at 1%. Let's recall that the null hypothesis requires that the OLS technique ought to be chosen if the probability is greater than1% and above all 5%. In the opposite case we are working with panel data.

As concerns the choice between fixed and random effects, we use the test of Hausman. The probability is less than 5%, hence we adopt the model with random effects. This choice leads us to use the Generalized Least Square method which is better compared to the OLS – technique. For the disaggregated models we are using time series data. At this level, the appropriate technique is the OLS but much more the two stages least square method which takes into consideration omitted variables and measurement errors. We have not proceeded to the unit root test since there were missing observations (unbalanced data).

4. Presentation and discussion of results

In this section, the results of our findings are presented by means of correlation anaysis, descriptive statistics and regression analysis. The correlation analyses are presented in table 3 below.

Table 3: Correlation matrix of dependent variable and independent variables

	GDP/ Capita	Rem/ Capita	Extdbt/ Capita	Cab	Exp/GDP	Infla	FDI	GCF	Labour
GDP/Capita	1								
Rem/Capita	0.643	1							
Extdbt/Capita	-0.7019	-0.603	1						
Cab	-0.7215	-0.593	0.995	1					
Exp/GDP	0.2354	0.6321	0.14	0.1437	1				
Infla	-0.311	-0.257	-0.35	-0.435	0.2351	1			
FDI	0.3264	0.2119	0.473	0.1564	-0.4152	-0.217	1		
GCF	-0.2599	0.3647	0.239	0.7664	0.3268	0.462	0.638	1	
Labour	-0.3144	0.5421	0.635	0.1698	-0.3186	0.642	-0.425	0.632	1

Source: Authors

The results show a very high correlation between the dependent variable and explanatory variables.64.3% of GDP per capita is explained by remittance money. The positive sign shows a direct relationship. Exports and foreign direct investments are directly related to GDP per capita at 23.5% and

32.6% respectively. The negative correlation of external debt, current account balance, and inflation with average growth can easily be justified by their influence on growth. The negative corellation of gross capital formation and labour on growth needs a further study. In fact, a negative correlation of 25.99% of gross capital formation with growth is seen to be very low in other countries in the sample.

As concerns the descriptive statistics in table 4 below, Cameroon and Kenya show a rate of gross capital formation of 19.87% and 19.01%. These figures represent less than half of the rate of gross capital formation in Nigeria (42.15%). Also, the high unemployment rate is responsible for the negative corellation between labour and growth. The correlation between explanatory variables is average showing a low level of multicollinearity and suggest good results. With this, the regression analysis in table 5 below throws more light on the signs and significance of the variables

Table 4: Descriptive statistics

Variables	Cameroon	Kenya	Lesotho	Morocco	Nigeria	Global Model
GDP/Capita	437.95 (14.528)	863.83 (187.87)	435.72 (192.56)	1349.032 (65.191)	518.82 (34.115)	721.075 (4.979)
Rem/Capita	5.764 (4.637)	18.546 (21.878)	238.26 (136.58)	302.76 (162.756)	51.771 (113.772)	131.422 (159.20)
Extdbt/Capita	-66.111 (5.752)	22.104 (70.55)	-0.1267 (0.525)	-246.17 (21.635)	1.42 (2.21)	58.035 (1.4322)
Cab	-32.084 (2.972)	5.918 (27.85)	-0.527 (0.211)	-91.1629 (87.978)	4.60 (6.87)	23.46 (5.625)
Exp/GDP	26.24 (4.1839)	23.34 (4.966)	3.19 (3.10)	26.7391 (4.654)	2.40 (2.37)	4.86 (5.625)
Infla	13.076 (9.213)	5.608 (7.305)	7.104 (21.80)	4.523 (3.523)	21.012 (18.68)	10.30 (14.97)
FDI	53.448 (0.612)	1.018 (1.450)	7.681 (10.85)	1.118 (1.2406)	3.054 (2.006)	26.815 (5.619)
GCF	19.876 (3.278)	19.014 (4.455)	30.69 (1.66)	25.867 (4.569)	42.15 (3.246)	86.961 (1.7251)
Labour	0.4237 (0.0818)	0.358 (0.0679)	0.413 (0.0780)	0.3233 (0.064)	0.3045 (0.0567)	0.3645 (0.0842)

Source: Authors
Notes: standard deviation in parentheses

The GDP per capita is relatively high in Morocco unlike in the other countries. With an average of 1349.032 USD between 1980 and 2010, Morocco stands out as one of the riches countries in Africa with a population which suffers less from poverty. In comparison the purchasing power is lower in Cameroon with a 437.95USD annually. Keyna and Nigeria stand out with 863.83USD and518.82 USD. These values show the level of the development of these countries which fall among the lower group of middle income countries. Amongst the five countries in the sample, Morocco receives the highest inflow of remittance money averageing 302.76 USD per head and annually. This is followed by Lesotho with 238.26 USD.Thses two economies are open growing economies. The debt servicing and trade situations show negative averages. These countries are amongst those in which external debt especially it servicing is still a problem. The level of gross capital formation is still low in Cameroon and Keyna. This is attributed to inadequate bank credit to entrepreneurs, inadequate infrastructures, low energy production as well as low level of human capital development. On the other hand, Nigeria and Lesotho have a high rate of gross capital formation of 42.15% of GDP and 30.69% of GDP respectively. This shows the diverse nature of these economies.

In general, the data used for the analysis do not fluctuated alot. In the aggregate model, the highest dispersion is observed with remittance money. In fact, the volatile nature of remittance money is explained by the number of people living abroad, fluctuation in migrants' incomes, change in migrants'activities in host countries and sometimes fluctuations in the values of foreign currencies.

The regression results are presented in table 5. The estimates were made for all the countries studied to see how remittance money impacts amongst other variables on the economic growth of the countries as a whole. Since the overall impact may be clouded by aggregation problems, we decided to disaggregate the results by country so as to bring out the peculiarities of each country. The estimates were carried out in six regressions for the same dependent variable (GDP per capita growth). Column 7 shows the result in aggregate form for all selected countries while columns 2,3,4,5 and 6 show the results for each country.The findings of our estimates of the growth function for the selected African countries as a whole and for each country are presented in Table 5 below.

Table 5: Estimates of the Growth Function for Africa

Dependant Variable : GDP/Capita						
	Cameroon	Kenya	Lesotho	Morocco	Nigeria	Global model
Explanatory Variables	2SLS	2SLS	2SLS	2SLS	2SLS	Random Effects
Rem/Capita	0.0371* (2.7249)	1.307* (0.669)	0.971** (0.1130)	2.19*** (0.381)	0.292* (0.433)	1.558*** (0.2592)
Extdbt/Capita	-3.31 (17.41)	-1.95 (6.2737)	-47.27 (3.21)	3.409 (2.382)	1.21 (8.47)	12.08*** (2.117)
Cab	10.49 (48.57)	1.0367 (13.921)	9.326 (7.74)	-10.78 (6.42)	-3.89 (2.69)	-34.79*** (5.809)
Exp/GDP	-19.37 (11.15)	0.6627 (2.4310)	5.20*** (1.67)	-37.76*** (9.36)	1.34*** (2.95)	2.77 (0.157)
Infla	-2.71 (4.01)	-0.7810 (1.1277)	-0.424 (0.3865)	-2.26 (0.841)	1.56 (1.668)	-3.6702** (1.7803)
FDI	4.414* (21.46)	-2.803 (12.622)	-1.48 (1.415)	5.108 (19.66)	-47.63*** (14.01)	3.581 (5.539)
GCF	28.577** (13.544)	-3.054 (3.7607)	3.60*** (7.95)	-5.95 (7.488)	2.546** (4.3561)	-9.39*** (2.68)
Labour	-22.14 (34.00)	-76.884 (94.183)	17.257 (0.795)	11.55*** (16.04)	10.434 (81.50)	-6.420*** (88.704)
Cons	15.31 (12.66)	65.710 (46.568)	-7.05 (27.11)	-21.40*** (4.80)	-29.63 (25.63)	30.48*** (3.451)
Nbers Obs	28	30	28	30	30	116
F (8 ; 21)	2.86	43.49	72.61	204.93	27.36	
Prob>F	0.0000	0.0000	0.0000	0.0000	0.0000	
R-squared	0.5467	0.9431	0.9683	0.9874	0.8970	0.9353
Adj. R-squared	0.3558	0.9214	0.9550	0.9825	0.8642	
Wald Chi2 (8)						504.51
Prob>Chi2						0.0000

Source: Authors

Note: standard deviation in parentheses

The table above shows the significant influence of some variables on economic growth in Africa. The coefficient of remittances as percentage of GDP shows a positive and significant impact on economic growth in both the aggregate model and disaggregated models. A comparative analysis shows that Morocco comes in the first position: 2.19% economic growth is explained by remittance money in this country. Kenya known for its economic dynamism in East Africa comes in the second position: 1.30%. Migrant transfers account for up to 0.97% economic growth in Lesotho. This South African country has the distinct feature of a small

dynamic population living abroad. After Nigeria with 0.29% contribution of remittances to economic growth, Cameroon comes on the last position with .03% contribution of remittance money to economic growth. This low contribution of remittances to economic growth reflects the way remittances are used in these countries. In most cases, remittances are channelled to health, nutrition, and educational purposes with only a small proportion directed towards investments. Globally, this finding contradicts our a priori expectation of remittance money impacting negatively on the growth of Africa. We can conclude that remittances are an important potential source of growth if all countries consciously channel such money into productive investment projects.

As concerns external debt/GDP, it exhibits a strong significant positive association with economic growth in the aggregate model. The positive influence of this variable on growth is insignificant in Morocco and Nigeria and becomes negatively insignificant in Cameroon, Kenya and Lesotho when we disaggregate the results by country. This relative insignificance of the influence of ratio of external debt to GDP on the economic growth of Africa may be explained by the stagnating external debt situation of these countries. This is partly consistent with our a priori expectation that this variable will affect growth differently for different countries.

Considering the growth of all the countries, current account balance is significantly negatively related to economic growth. In the disaggregated form of the model the coefficient of current account balance remains positively but insignificantly related to growth in Cameroon, Kenya, and Lesotho while in Morocco and Nigeria, it remains negative and insignificantly related to growth. This finding is not surprising given that it reflects the current account balance situation of the countries in question.

Exports as a ratio of GDP has an insignificant positive association with economic growth of Africa in the aggregate model. In the disaggregate model, this variable shows a significant positive impact on the growth of Lesotho and Nigeria and a significant negative impact on the growth of Morocco. Its positive impact on the growth of Kenya is negligible. Conversely, this variable has an insignificant negative impact on the growth of Cameroon. Generally, this finding seems to suggest that this factor is a very important growth determinant for individual African countries.

Inflation is used as a proxy to assess the effect of changes in prices on the economic growth of Africa. It strongly impacts negatively on growth in the aggregate model. Its coefficient remains negative but insignificant for Cameroon, Kenya, and Lesotho and Morocco. However, this coefficient becomes positive but insignificant for Nigeria. The results in the aggregate model confirms our prediction of high rates of inflation in Africa impacting negatively on growth. It is agreed that remittances induce inflation generated by an unresponsive supply and an induced rising demand. In this situation, Glytsos (2002) notes that inflation can rise to such an extent as to annihilate the positive effects of remittances.

Total labour force is used to determine the influence on human investment on growth. This variable is negatively and significantly associated with growth in the global model. When we disaggregate the results by country, it remains negatively and insignificantly associated with growth in Cameroon, and Kenya, whereas in Lesotho and Nigeria it is positive but insignificant. However, this variable shows a very strong positive impact on the growth of Morocco. This finding is partially consistent with our expectation of a positive association between labour force (human investment) and growth in some individual countries given that a large proportion of remittances are spent on human investment.

The foreign direct investment as a ratio of GDP (FDI/GDP) is used as an indicator of a major inflow which is closely related to Overseas Development Assistance (ODA). The coefficient of FDI/GDP is positive but insignificant in the global model. In the disaggregated results by country, it remains positive and significant in Cameroon but insignificant in Morocco. Ebah (2009) found out that FDI does not cause significant changes in GNI per capita in Cameroon. Surprisingly this variable strongly affects negatively economic growth in Nigeria. This finding seems to suggest that this factor impacts differently on growth in different countries. Chanery and Carter (1973) observed that ODA which is closely linked to FDI/GDP accelerates economic growth in some countries while retarding it in others. Also Fayissa and El-kaissey (1999) quoted in Chanery and Carter (ibid) found that ODA accelerates economic growth.

Gross capital formation/GDP exhibits unstable signs in the aggregate and the disaggregated models. It is strongly negatively related to the growth of the whole group of countries studied. In the disaggregated model it remains strongly and positively associated to economic growth in Cameroon, Lesotho, and Nigeria. In Kenya and Morocco, this factor portrays a negative but insignificant impact on growth.

The coefficient of the constant term exhibits unstable signs both in the aggregate and disaggregated models. This variable significantly impacts positively on economic growth in the global model and remains positive but insignificant on the growth of Cameroon and Kenya in the disaggregated model. It portrays an insignificant negative impact on economic growth in Lesotho, and Nigeria and a significant negative impact on the growth of Morocco. These findings suggest that there are variables other than those specified in the model that impact negatively and positively on the growth of African countries.

In the whole sample of countries studied the coefficient of multiple determination adjusted for degrees of freedom is 0.93 in the aggregate model and 0.35, 0.92, 0.955, 0.9825 and 0.86 for Cameroon, Kenya, Lesotho, Morocco, and Nigeria respectively. This means that in the aggregate model about 93% of the variation in the growth for the whole group of countries is accounted for by the variables included in the study. In the disaggregated model, 35%, 92%, 95%, 98% and 86% of the same variation in growth is explained by the total number of variables considered. In the disaggregated model, some of the unexplained variation in growth in some countries may indicate that our estimations did not take into consideration some factors peculiar to some societies which we could not find measures for. The global performance of the growth model for Africa and the selected countries is shown by the F-test in columns 2, 3,4,5,6, and 7 in Table 5. The different variables of the growth functions specified and tested for the selected African counties in this model are seen to be highly significant.

5. Conclusion and policy issues

The estimates of the generalized or group growth function showed that remittences and external debt/GDP positively and significantly explained the variation in GDP per capita growth. The current account balance, inflation, gross capital formation and labour negatively and significantly explained the variation in the growth of the whole group of countries studied. From the disaggregated results it is found that in Cameroon remittances, foreign direct investment, and gross capital formation are significant positive factors that explain changes in the growth of the country. In Kenya, only remittance/GDP is a significant positive factor of growth. In Lesotho, remittance/GDP, exports as a ratio of GDP and gross capital formation are the only significant positive factors of growth. In Morocco, the only significant positive factors of growth are remittances and the labour force while exports portray a significant negative impact on the growth of this country.In Nigeria, remittances, exports and gross capital formation significantly associate positively with growth while the positive influence of inflation, external debt, and total labour force is insignificant.

From the foregoing, it is clear that although households spend a large portion of their remittances on their social needs, some still try to invest. This is why remittance funds have a significant positive impact on the economic growth of all the economies studied.Meanwhile emerging evidence points to the fact that a majority of African governments and other development actorsr have neglected this important source of development funds.

From a policy perspective the following conclusions are important:

i) Where use must be made of remittance money, then the terms of trade and balance of payment should be greatly monitored to ensure that African countries derive maximum benefit from such funds.

ii) African counties should develop units in their financial ministries or set up separate ministries to be in charged of mobilizing remittance funds and channeling them into productive investment.

iii) Given the peculiarities of different African countries as well as the different regional and economic groupings, it is recommended that remittances management be considered as a priority area to improve and strengthen cooperation on.

iv) African governments as individuals and groups should sponsor research on the comparative analysis of the use of remittance money in the continent given that the way this money is used will determine to a large extent how it impacts on growth.

v) Western governments should facilitate the transmission mechanisms of remittances to Africa so as to increase the quantity of funds coming in from this source.

vi) Banks in African economies should reduce the charges to recipients of remittance money.

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