International remittances – the panacea for underdevelopment? A comparative panel data analysis of Sub-Saharan Africa and Latin America

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2010

Journal of Applied Sciences 10 (4): 235-247, 2010
ISSN 1812-5654

International Remittances-The Panacea for Underdevelopment? A Comparative Panel Data Analysis of Sub-Saharan Africa and Latin America

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Abstract: In this study, we analyzed a dynamic cross-country panel dataset on 31 sampled developing countries involving 16 Latin America and the Caribbean and 15 Sub-Sahara African countries within the framework of Blundell-Bond Generalized Method of Moments (GMM). The results show that generally the impact of remittance inflows on overall development differ across regions. Specifically, the study reveals that the positive role of international remittances in the development process of underdeveloped economies is more pronounced in Sub-Saharan Africa than in Latin America and the Caribbean sub-region where, remittances actually retard socioeconomic development prospects. It would, therefore, be politically imprudent and economically suicidal, to over-depend on international remittances as the panacea for the underdevelopment of Sub-Saharan Africa, Latin America and the Caribbean. The contribution of this study is unique because it has examined the long-run impact of international remittances on overall socioeconomic development which takes into account real per capita income, income disparity and other socioeconomic equity factors incorporated into the construction of human development index.

Key words: International remittances, panel data, GMM estimation, Latin America and the Caribbean, Sub-Saharan Africa

INTRODUCTION

Despite the emergence of various development models such as Solow (1956), Romer (1986), Lucas (1988) and Barro (1991) in connection with sources and finance of sustainable economic growth and development of underdeveloped economies, Africa and Latin America in particular have not experienced any significant socioeconomic progress. This is evident in their poor ranking in the Human Development Index (HDI) (Appendix 1). It is for this reason that the search for the most reliable strategy to propel rapid economic growth and sustainable development is still continuing.

As the search for the pro-growth and development strategy for underdeveloped economies still continues, the role of cross-border remittances in international finance and economic development has become very crucial. This is because the rate and volume of international remittances have increased tremendously since the 1990s. For example, in 1995, migrant remittances to developing countries totaled US$57.3 billion which soared up to US$95.2 billion in 2001 and further to over US$194.2 billion in 2005. Even with these values, the World Bank and other development experts strongly believe that the actual amount of remittance flows to developing countries is about 50% higher or more than the officially reported statistics. The World Bank reported that official migrant remittances grew to US$228.8 billion in 2006 and US$264.9 billion in 2007. This implies that the growth of remittances has now exceeded private capital flows or Foreign Direct Investment (FDI) and Official Development Assistance (ODA) to developing countries. Besides the consistent positive growing trend in migrant remittance flows to developing countries, it has also been observed that remittances are a reliable source of foreign capital and the least volatile source of foreign exchange since the 1990s and constitute a third of global finance (Carrasco and Ro, 2007).

There has been a consistent growing trend in international remittance flows to developing countries, which according to the World Bank (2008) migrant remittance inflows alone reached an all-time high of US$282,793 millions. This notwithstanding, from theoretical viewpoint, the implications of remittances for an underdeveloped economy appear rather ambiguous. From one perspective, it might be true that increased remittances to developing countries could lead to rapid economic growth, stability and improved livelihoods.

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From another perspective, there is also the possibility that the continuous substantial inflows of these remittances to a developing country could result in increasing brain drain, abandonment of the pursuit of aggressive pro-growth economic policies, inflation, real exchange rate appreciation and a moral hazard when beneficiary households depend on these transfers entirely or partially and thereby reduce the supply of labour. Therefore, the net effect of increasing international remittance inflows on the growth and development prospects of developing countries is theoretically ambiguous.

Although, theoretically the role of international remittances in the growth and development process of an economy has remained controversial, in recent times, there seems to be some consensus among development economists that broadly cross-border remittances could impact positively, to a reasonable extent, on economic growth and development just as any other export revenue. For example, as far as household consumption and balance of payments are concerned, international remittance inflows could be very important to developing countries in many respects.

Probably, it is based on this premise that there has been increasing interest and extensive empirical studies on the implications of remittances for economic growth and various aspects of economic development of beneficiary countries in recent years. The conclusions drawn from most of the empirical studies show that there are conflicting evidences as far as the implications of international remittance inflows for economic development proxied by poverty and income inequality are concerned. In some cases, international remittances reduce poverty but promote income inequality as found by Adams (2006) for Ghana, Matínez and Támola (2007) based on 2004 national survey on households in Honduras, Nguyen (2008) for Vietnam and Hoti (2009) for Albania. Wodon (2006) also observed that international remittances are often not pro-poor in West Africa, but they play a crucial role in poverty reduction and at the same time cushion households to absorb economic shocks.

It is becoming quite clear from recent empirical studies that international remittances are contributing to poverty reduction in developing countries, provided a poor family can afford to sponsor a family member abroad for work. Many studies, including the works of Adams (2006) for Ghana and Adams and Page (2003) for developing countries, have shown that international remittances reduce poverty by way of raising income levels significantly and may widen income disparity only when a poor family cannot bear the traveling expenses of a family member. For instance, IMF (2005) upon analyzing data for the period 1970-2003, found that for 101 sampled countries international remittances reduce absolute poverty. Likewise, Gyimah-Brempong and Asiedu (2009) for Ghana, Acosta *et al.* (2008) for Latin American countries, Nguyen (2008) for Vietnam, Loritz (2008) for El Salvador and Bolivia, Adams (2006) for Ghana, Lopez-Cordova (2004) for Mexico and Adams (2004) for Guatemala, all conclude that generally, international remittances promote social welfare through reduction in headcount poverty at the micro, meso and macro levels. Remittances may have declined poverty by 11, 6 and 5% in Uganda, Bangladesh and Ghana, respectively (Ratha and Mohapatra, 2007).

The above notwithstanding, the effects of international remittances on the overall socioeconomic development of regional blocs and sub-Saharan Africa, in particular, have not received much attention under any rigorous macroeconometric study to enable policymakers and development practitioners to formulate effective policies to expedite the socioeconomic development process of the sub-region. As of now, not much is known regarding the role that remittances play in promoting overall development of poor countries in the long-run. In order to contribute to this growing debate, this study explores the impact of international remittances on the overall development of developing countries, with focus on Sub-Saharan Africa (SSA) and Latin America and the Caribbean (LAC).

Given the foregoing, the central objective of this study is to examine the long-run macroeconomic implications of international remittance inflows for the overall development of Africa and Latin America using panel data from 31 countries-SSA (16) and LAC (15) for the period 1986 to 2006. Specifically, the study seeks to examine the long-run effects of international remittances on socioeconomic development of LAC and SSA separately and jointly using human development index as a proxy for the socioeconomic development.

MATERIALS AND METHODS

Trends in remittances and other capital flows to developing countries: The global volume of cross-border remittance flows is widely acknowledged to be huge, even if the actual amount cannot be determined with absolute accuracy, given the high possibility that a significant number of migrants are very likely to patronize the informal international money transfer services. In this regard, most official estimates are likely to be underestimation of the real volume of remittance flows. The World Bank (2003) estimates that in 2002 remittances

amounted to US$113.4 billion, exceeding the double of aid-related flows which amounted US$49 billion and second only to FDI of US$143 billion as a source of external finance for developing countries.

Over the years, it has been observed that international remittance flows are not evenly distributed across regions. For example, in the year 2002, remittance flows to Latin America and the Caribbean were US$25 billion whilst US$16 billion went to South Asia, US$14 billion went to the Middle East and North Africa and US$4 billion to Sub-Sahara Africa (World Bank, 2003). In 2001, the Indian economy received US$10 billion in remittances with Mexico receiving US$9.9 billion in remittances, Philippines US$6.4 billion, Morocco US$3.3 billion, Turkey US$2.8 billion and Senegal US$0.2 billion (World Bank, 2003). Ideally, these figures would need to be adjusted for Gross Domestic Product (GDP) and population sizes in order to reflect the relative importance of remittances. Indeed, as a share of GDP, remittances are significantly higher in lower-income countries than in other developing countries (Ratha, 2003). The leading source regions from which remittances are sent to developing countries are North America (Canada and the United States), Western Europe (Germany, Belgium, Switzerland, France and Italy) and the Arabian Gulf (Saudi Arabia) (World Bank, 2003).

From the statistics provided in Table 1, in 1980, LAC attracted 10.42%, while SSA received 7.59% of total remittance inflows to developing regions. By 1990, the percentage of remittances to developing countries received by LAC and SSA stood at 18.42 and 6.0%, respectively. Since the early 2000s, LAC has been receiving about one-quarter of remittance inflows to developing countries. By the end of the year 2005, one-quarter or 25.09% of total remittances received by developing countries went to LAC alone, while SSA received just 5.13% of the gross flows. It is clear that while remittance inflows to SSA have been increasing over the last two decades in absolute terms, the sub-region's percentage share of remittances consistently declined over the period. Indeed, from Table 1 above, LAC outperformed SSA in terms of portfolio and remittance inflows. It is only in Official Development Assistance (ODA) inflows that SSA did better than LAC. Further, between 2000 and 2005, total remittances to LAC far exceeded its receipt of portfolio and ODA inflows combined.

Table 1 shows that on the whole remittance flows to developing countries have been increasing steadily since 1990. For example, from a mere US$31.1 billion in 1990, remittance flows to developing countries increased by more than 300% to US$96.5 billion in the year 2001. By the end of 2005, remittance flows to developing countries increased further to US$194.2 billion.

Table 1: Official, portfolio and remittance flows to LAC and SSA, 1980-2005

	Year					
Variables	1980	1985	1990	1995	2000	2005
Remittances						
Developing countries	18,384	19,565	31,058	57,302	84,186	194,174
Latin America-Caribbean	1,915	2,603	5,722	13,335	19,987	48,716
Sub-Saharan Africa	1,396	1,173	1,862	3,193	4,623	9,969
Portfolio flows						
Developing countries	1,205	3,585	4,474	37,194	34,339	121,792
Latin America-Caribbean	812	-795	2,565	16,578	7,810	28,991
Sub-Saharan Africa	32	-184	362	3,805	5,154	7,784
ODA						
Developing countries	26,626	25,793	50,703	57,093	46,555	90,363
Latin America-Caribbean	2,141	3,342	5,111	6,267	4,841	6,309
Sub-Saharan Africa	7,623	9,226	17,839	18,716	13,194	32,620

Source: Authors' compilation from World Bank sources

Theoretical underpinnings and literature review: The outflow of human capital resources from developing to developed economies appear to be somehow beneficial to the world economy today. This is due to the fact that developing countries are earning substantial foreign exchange through migrant remittances whereas the advanced and semi-industrialized are enjoying higher surplus value as a result of employing cheap labour from these developing countries. International remittances are typically transfers from well-meaning individuals, private organizations or governments to their counterparts in, usually but not always, underdeveloped or deprived economic environments. At the household level, these remittances are targeted at meeting specific needs of the recipients and thus, tend to augment the purchasing power of recipients and thereby reduce their poverty levels in low-income countries in the long-run.

Conceptually, two main schools of thought can be identified with regard to the broad impact of foreign remittances on developing economies. These are the remittance-optimistic developmental and the remittance-pessimistic migrant syndrome schools of thought. The philosophical ideology of the remittance-optimistic developmentalist school is that international remittances have the potential of enhancing the development process in both developed and developing countries. This school argues that international remittances normally contribute positively to the elimination of production and investment constraints, raising the average household incomes in real terms and lessening, if not solving, balance of payment problems of developing countries. International remittances also contribute to narrowing the trade gap and facilitating debt servicing. The developmentalist school again argues that migrants, especially permanent emigrants, sometimes use

part of their earnings to finance critical development projects in their native country. The developmentalist school further contends that the emergence of remittances on the global scene has encouraged international migration to advanced economies resulting in increasing large-scale production due to cheap labour from developing countries. This reduces the average cost of production in the industrialized countries. Therefore, international remittances have a two-side positive impact on the global economy. This view is supported by the empirical works of Lucas (2004), Lowell and Findlay (2002), Stark *et al*. (1997), Massey *et al*. (1998), Bhagwati (2003), Ammassari (2003) and Stahl and Arnold (1986) which suggest that developing countries stand to gain from brain drain by way of remittances from their migrant nationals who would have otherwise been unemployed or lowly-paid in their poor native countries. International remittance-receiving households often tend to have a higher propensity to invest than do non-remittance-receiving households. Results from some empirical studies on developing countries have concluded that international remittances do not necessarily lead to passive dependency as suggested by the pessimistic school, but may rather lead to increased economic activities and wealth (De Haas, 2003).

The main argument of remittance-pessimistic school is that the quest for international remittances leads to international migration which drains native developing countries of highly trained and skilled labour and capital by crowding-out domestic production of tradable goods in the brain-drained underdeveloped economy. This implies that advanced economies stand to gain more in international migration and remittances through cheap labour, high taxation on migrant earnings and, to some extent, from commissions paid by migrants when transferring remittances to their native countries. Accordingly, the low wages paid to migrants in advanced economies are not sufficient to benefit developing countries substantially in narrowing the development gap between the advanced and the developing countries. Based on this conception, remittance-pessimistic school believes that international remittances, apart from deepening foreign-dependent mentality of developing countries, may promote higher inequality among households and macroeconomic instability in the form of inflation through excess demand for consumables relative to deficit in domestic production capacity of developing countries (Stark and Levhari, 1982; Lipton, 1980; Ahlburg, 1991; Rubenstein, 1992).

From theoretical perspective, there are divergent views with regard to the contribution of remittances to development. As far as the optimistic school is concerned, remittances impact on the development process of a country through increased consumption of basic needs of life, poverty alleviation and empowerment. International remittances are a source of additional income to improve the welfare of beneficiaries at the regional, national and local levels. Remittances do not only increase the real disposable income of beneficiary households, they also have the potential to promote real economic growth at the local and national levels in developing countries since a portion of them can be channelled into productive investments. This, in turn, can serve as a more sustainable means of poverty reduction and overall socioeconomic progress and development. In contrast, the pessimistic school is of the opinion that increasing remittance inflows to developing countries may lead to moral hazards in the form of excessive economic dependency, low productivity as a result of increasing brain drain and higher rates of voluntary unemployment. Possibly, the extent to which remittances would contribute to development might differ from place to place depending upon some institutional, cultural and socioeconomic fundamentals.

From empirical perspective, there are a number of obvious mechanisms through which remittances might promote development. Since, remittances are usually directed at meeting specific needs of the recipient, they can directly reduce poverty and hence, promote human development in the long-run. According to the results of an empirical study by Adams (1991), international remittances account for 15% of total income of poor Egyptian households. In Burkina Faso, Konseiga (2005) finds that one-third of the very poor household receives cross-border remittances which constitute about 20% of their total incomes. In Lesotho, the poverty headcount is expected to increase by, at least, 10% if remittances were completely removed. Adams and Page (2003) however, find that due to high travel costs to Europe and North America, most migrants are from households with incomes above the poverty line and therefore, remittances do not benefit the very poorest of the society. The conclusions drawn from some other studies by Adams (1989, 2006) on Egypt and Ghana, respectively, Barham and Boucher (1998) on Nicaragua and Rodriguez (1996) on the Philippines show that remittances widen the income-gap in developing countries. This, however, does not suggest that remittances, on the average, do not promote development, as higher remittance inflows may have positive multiplier and trickling-down effects in the long-run.

In underdeveloped and low-income economies, like those of SSA and the LAC regions, there is a high tendency that remittances will be used for consumption of basic human necessities of life purposes due to low incomes and low marginal propensity to save. If

remittances are used essentially for transaction purposes and hence spent on consumer goods, the multiplier effects will encompass increased effective demand, higher employment, lower dependency, increased average income and hence poverty reduction in especially low-income countries. As remittances are also largely used for financing education and healthcare, they enhance productivity through quality human capital development and therefore, promote long-run growth and development prospects of underdeveloped economies (Ozden and Schiff, 2005).

Under the circumstances where, remittances, in excess of meeting critical subsistence needs, are used for financing business activities and investment opportunities, they may once again promote long-run growth and development of poor remittance-receiving countries. For instance, Chilivumbu (1985), Russell *et al.* (1990) and Ozden and Schiff (2005) find that international remittances received in excess of meeting the normal living standards are channeled into financing education, housing, small and medium-scale businesses and agricultural inputs including livestock and irrigation schemes in SSA. In particular, Konseiga (2005) finds that in Burkina Faso, remittances have contributed tremendously to agricultural and natural resource management which have enhanced higher productivity.

It has also been established that international remittances contribute largely to alleviating the credit constraints and hence, promote increased investment. Even if recipients do not personally invest remittances directly, any proportion of remittances saved with financial institutions augment the bank reserves available for credit extension. This implies that the consistent inflows of substantial remittances could help improve both the availability and cost of credit in credit-constrained developing countries such as those of SSA and LAC. In this regard, Fayissa and Nsiah (2008) confirm that remittances boost economic growth in developing countries in general, but with higher impact on countries with underdeveloped financial system by contributing to investment finance and reducing liquidity constraints in the long-run.

Furthermore, international remittance inflows have significantly contributed to poverty-reduction and accommodation of vulnerability shocks in low-income countries. In a study of 71 developing countries, Adams and Page (2005) reveal that a 10% increase in migrant remittances per capita leads to a 3.5% decline in the proportion of the population living in poverty. Besides, remittances reduce vulnerability to shocks as well as the volatility of nationwide output, consumption and investment and thereby contribute immensely to general macroeconomic stability.

Barham and Boucher (1998) for the case of Bluefield (Nicaragua), reveal that the Gini coefficient for household income falls from 0.47 to 0.43% when using reported figures, but inequality actually rises from 0.38 to 0.43% after correcting the pre-remittances distribution using imputed income for remittance-receiving families.

Adams (1991), in a study based on a survey of 1000 households in rural Egypt used income data from households with and without migrants to determine the effects of remittances on poverty, income distribution and rural development. It was concluded that although, remittances were helpful in alleviating poverty, paradoxically they also contributed to inequality in the distribution of income. On the contrary, Gustafsson and Makonnen (1993) reveal that in Lesotho, migrant remittances actually decrease inequality. Chimhowu *et al.* (2004) support the view that remittances do increase inequality at the local level, but at the international level they transfer resources from developed to developing countries and so they contribute to reducing inequality across nations in the long-run.

From theoretical and empirical analysis, the impact of remittances on an economy is inconclusive. It depends upon the context of the analysis-whether a micro, a meso, or a macro level was used. The impact of remittances on any economy at whichever level may also depend upon some basic structural differences in general. This implies, to examine the actual impact of remittances on development, there is the need to use an all-embracing comprehensive index, such as Human Development Index (HDI). The HDI is a comprehensive measure of life expectancy, literacy, educational attainment and GDP per capita worldwide. It is globally acclaimed as a standard means of measuring human development-a concept that the United Nations Development Programme refers to as connoting the process of widening the options of persons, giving them greater opportunities for education, healthcare, income, employment among others. The fundamental use of HDI is to measure the level of development of a country.

The empirical model and methodological issues

Relevant variables and data considerations: Within the scope of macroeconomics, the review of the literature shows that the overall socioeconomic development of a nation could be influenced by several variables. However, in most of the empirical studies, the notable variables that have been identified as promoting development are human capital development, investment in socioeconomic infrastructure, macroeconomic stability and growth, international trade or economic openness and rewards on resource transfers of which remittances have become a dominant component for developing countries. Data on

some of these variables, notably development index and remittances, are inadequate due to the fact that measurements of these variables are recent phenomena. As a result any empirical investigation into these issues cannot employ time series econometric approach. For this reason, our empirical analysis used a balanced annual panel dataset ranging from 1986 to 2006 from secondary sources. The key variables were obtained from International Monetary Fund (IMF) sources such as Balance of Payments Statistics (BoPS) Yearbooks and International Financial Statistics (IFS) Yearbooks as well as World Development Indicators (WDI) published by the World Bank. International remittances were computed as the sum of compensation of employees, workers' remittances and migrant transfers as reported in the BPS by the IMF. Investment (INV) was computed as the share of gross fixed capital formation to GDP in constant US dollars, whilst economic openness was computed as the sum of exports and imports to GDP. Inflation, as a measure of macroeconomic instability, was proxied by the logarithmic values of consumer price index. Development (DEV) was proxied by Human Development Index (HDI) as reported in Human Development Report (HDR). Similarly, the rate of secondary school enrolment as reported in WDI was used to represent Human Capital Development (HCA).

The empirical model: To empirically examine the responsiveness of overall socioeconomic development (DEV) to international remittance inflows (REM) from macroeconomic perspective, we specify a simple log-log-linear function which comprises remittances as an explanatory variable of an otherwise orthodox overall economic development model of the form:

$$\ln DEV_{it} = \phi_0 + \phi_1' \ln DEV_{it-\rho} + \phi_2' \ln REM_{it-\rho} + \phi_3' \ln REMDUM_{it-\rho} + \phi_4' \ln Z_{it} + \phi_5 TDUM_t + \mu_{it}$$

where, DEV_{it} represents overall development proxied by the marginal variations in human development index as computed by the World Bank, REM stands for international remittances measured as the proportion of remittance inflows to GDP in constant US dollars, REMDUM is a regional slope dummy, Z represents a set of control variables other than the lagged values of development ($DEV_{it-\rho}$), TDUM stands for time dummy, ln is the notation for logarithm, ρ denotes the optimal lag notation and μ_{it} is an i.i.d. error term. It is expected a priori that when estimated $\phi_1', \phi_2', (\phi_2' + \phi_3'), \phi_5 > 0$ whereas $\phi_4' < / > 0$ depending upon the specific variable under consideration. REMDUM takes the value of zero if the country in question is from SSA otherwise the current remittance values are for LAC countries. The notations ϕ_1', ϕ_2', ϕ_3' and ϕ_4' are row vectors of the coefficients of the current and lag values of the respective variables. To capture differential regional dynamic impacts, the REMDUM is lagged appropriately to correspond to the lags of REM. Accordingly, the impact of remittances on the overall development for LAC countries would be given by the sum of ϕ'_2 and ϕ'_3. The TDUM takes values 0 for the period preceding the year 2000 and 1 for the year 2000 and beyond when it is assumed that the world economy has been more integrated with increasing interest and pursuit of globalization.

Present empirical model suggests that the extent of overall development of any country at any point in time (DEV_{it}) depends on previous level of development ($DEV_{it-\rho}$), current and past values of remittances (REM) and current and/or previous values of the control variables (Z). The essence of introducing REMDUM directly into the empirical model is to allow for some element of heterogeneity which enabled us to test for any possible variations in the impact of remittances on socioeconomic development of SSA as against LAC countries. The inclusion of a time dummy variable (TDUM) in the model is not only to satisfy the theoretical recommendation for efficient estimators but also to see if there has been structural change with the surge in remittance flows in the 2000s following the perception that the world economy has become more integrated as a result of increasing interest and appreciation of the globalization concept.

The control variables included in Z consist of a wide array of potential explanatory variables that can be used in this framework. Our approach to this study is that instead of including many variables in the already bulky variety of pro-growth and economic development models, we incorporate a set of variables that has been widely used and acknowledged in a number of empirical economic growth and development models. The study of Lucas (1988), Barro (1996), Fischer (1993), Forbes (2000), Banerjee and Duflo (2003) and Knowles (2005) are of extreme relevance. Thus, based on the empirical study of Barro (1996), these variables include the secondary school enrolment used as a measure of human capital development, gross fixed capital formation as a percentage of real GDP which is used as a proxy for investment (INV), inflation proxied by the logarithmic form of Consumer Price Index (CPI) and economic openness which was proxied by the ratio of total exports and imports to GDP. Essentially, the selection of the regressors was informed by the comparability of the findings of this study with existing empirical works on

economic growth and development. However, a general- to-specific modeling procedure was followed to arrive at the estimated parsimonious model.

Methodology and estimation procedure: Dynamic panel model following Arellano and Bond (1991) was estimated. In view of the biases associated with the quality of the instruments in Arellano-Bond GMM specification, the study further employed a system estimator that exploits both the temporal and the cross-sectional variation in the data, following Blundell and Bond (1998). The choice of the dynamic panel data model was informed by the fact that data on remittance flows and development index are very scanty such that the panel has small T and large N. It is also guided by evidences that the relationship under consideration is linear; the left-hand side variable is singular and dynamic; the explanatory variables are not strictly exogenous; there are fixed individual effects; and there are heteroskedasticity and autocorrelation within the cross-sectional units but not across them. The selection of the 31 countries of which 16 are LAC countries and the remaining 15 are SSA countries (Appendix 1) was strictly based on data availability. The study was conducted at Avetile-Peki in the Republic of Ghana between February 2009 and May 2009. The econometric software used for analyzing the balanced panel data was STATA10.0.

The study employed Blundell-Bond system GMM estimation technique. This is preferred to difference GMM following Arellano and Bond (1991) and deviation GMM after Arellano and Bover (1995) since in system GMM, one can include time-invariant regressors which tend to disappear in difference GMM. Further, the system GMM allows for more instruments and thus, makes the coefficient estimates more efficient and consistent. To test for the joint validity of the instruments used, the Sargan-Hansen test for over-identifying restrictions was performed after the two-step GMM estimation (Bond, 2002). Besides, Arellano and Bond (1991) test was performed to detect autocorrelation in the idiosyncratic disturbance term, a situation that will render some lags invalid as instruments. Furthermore, in order to prevent cross-individual correlation or contemporaneous correlation, a time dummy (TDUM) was introduced into the model.

PRESENTATION OF EMPIRICAL RESULTS

The empirical results of this study are presented in Table 2. The autocorrelation and over-identifying restrictions tests which were carried out under a two-step system estimation procedure are reported in Appendix 2.

The test results indicate that at 5% level of statistical significance, the over-identifying restrictions are valid and there exists second-order autocorrelation in the Blundell-Bond two-step estimation reported in Appendix 2. This has been factored into the one-step system estimation for the results reported in Table 2. Accordingly, the results presented in Table 2 are autocorrelation-robust. The results suggest that initial level of development, initial investment and human capital development impact positively on development process of SSA and LAC. Considering the magnitudes of the estimated coefficients of lagged development index (at lag 1, 2), it can be said that development follows a historical process. The current level of development is strongly positively influenced by its immediate past level by a partial impact of 74%. This own impact of development index tippers-off with the passage of time as shown by 13% positive influence of the previous two years' level. Overall, 87% of the overall development of an economy is explained by the immediate two years past levels of development of these economies.

With regard to other explanatory variables in the empirical model, all the predetermined variables with the exception of economic openness were significant in explaining socioeconomic development. The current level of investment negatively impacted on development across LAC and SSA over the study period. A 100% increase in investment would contemporaneously induce 2.8% decline in overall development across the two sub-regions. Dynamically, investment significantly influenced development positively over the study period. A 100% rise in investment in the immediate past would cause socioeconomic development index to increase by 3.01% across LAC and SSA. Considering both the contemporaneous and dynamic effects, investment had a positive impact on development across the two sub-regions. The overall impact appears to be marginal but it must be noted that the development index is constructed with values between 0 and 1 so even a minute increase in the index implies some significant change in the overall economy.

Human capital development as captured by secondary school enrolment had a strong positive impact on the overall development of SSA and LAC. The coefficient estimate of lnHCA suggests that doubling school enrolment would generate 2.33% increase in development index in the two sub-regions.

Inflation had a significant negative impact on overall development in the long-run. The magnitude of its coefficient estimate indicates that a 100% rise in inflation rate would induce a 0.23% decline in development index across the two sub-regions. This confirms the a priori expectation that an inflationary environment represents a

Table 2: Estimated results of the impact of remittances on development

System dynamic panel estimation — Number of observations: 554
Group variable: CCODE — Number of groups: 31 (LAC = 16; SSA = 15)
Time variable: Year — Obs per groups: Min = 14, Avg = 17.87, Max = 18
Number of instruments: 410 — Wald χ^2 (13): 11976.66 Prob>χ^2: 0.0000
Modelling development (DEV) by blundell-bond one-step panel estimation procedure

lnDEV	Coefficient	SE	z	P>|z|	[95% Conf.	Interval]
lnDEV_1	0.7397460	0.0343136	21.56	0.000	0.6724926	0.8069994
lnDEV_2	0.1302141	0.0297751	4.37	0.000	0.0718561	0.1885722
lnINV	-0.0280398	0.0090687	-3.09	0.002	-0.0458142	-0.0102654
lnINV_1	0.0301074	0.0082626	3.64	0.000	0.0139130	0.0463019
lnREM	0.0099894	0.0041169	2.43	0.015	0.0019205	0.0180583
lnREM_1	0.0054357	0.0041348	1.31	0.189	-0.0026682	0.0135397
lnREM_2	-0.0098055	0.0037345	-2.63	0.009	-0.0171251	-0.0024860
lnREM_3	0.0048779	0.0027232	1.79	0.073	-0.0004595	0.0102153
lnEOP	0.0041899	0.0042927	0.98	0.329	-0.0042235	0.0126034
lnHCA	0.0232778	0.0048767	4.77	0.000	0.0137197	0.0328359
lnCPI	-0.0023065	0.0010720	-2.15	0.031	-0.0044076	-0.0002053
lnREMDUM	-0.0133723	0.0031646	-4.23	0.000	-0.0195749	-0.0071697
TDUM	0.0165357	0.0047802	3.46	0.001	0.0071668	0.0259046
CONSTANT	-0.1345665	0.0266462	-5.05	0.000	-0.1867920	-0.0823410

Instruments for differenced equation
GMM-type: ln(2/.).lnHDI ln(1/.).ln.lnINVGDP ln(1/.).ln3.lnREM
Standard: D.lnEOP D.lnHCA D.lnCPI D.TRDUM D.lnTREND D.TDUM
Instruments for level equation
GMM-type: lnD. lnHDI lnD. lnINVGDP ln3D.lnREM
Standard: Cons

Source: Authors' estimations

macroeconomic instability which impacts negatively on economic growth and subsequently on overall development of low-income countries.

International remittances are statistically significant in promoting socioeconomic development in SSA marginally. At 2% level of statistical significance, a 100% increase in current inflow of remittances would contribute directly to reversing the underdevelopment of SSA by about a mere 1%. Although, overtime international remittances undermine socioeconomic development as suggested by the negative sign of the second lag of remittances, the total contemporaneous and dynamic impact of remittance inflows on development in SSA is positive. Within the study of LAC, international remittances actually undermine overall development contemporaneously as suggested by the negative differential effect of 1.34%. This means that, contemporaneously, a 100% rise in remittances would generate 0.34% decline in socioeconomic development across LAC.

DISCUSSION OF EMPIRICAL RESULTS

Although, remittances are likely to induce some positive impact on overall development overtime, the overall remittance impact would be negative across the LAC sub-region. It is possible that given the magnitude of remittance flows to LAC, school dropout rate might increase likewise the rate of emigration of the youth and active labour force, in search of greener pastures. Therefore, it is likely that international remittance inflows might help to a point beyond which the devastating effects of the Dutch Disease might outweigh the benefits of these resources. This finding is consistent with the views of those within the remittance-pessimistic school such as Stark and Levhari (1982), Lipton (1980), Ahlburg (1991) and Rubenstein (1992). These scholars opine that international remittances may adversely impact on developing economies through two main channels-international migration channel and monetary channel. Through the international migration channel, the quest for remittances may lead to brain-drain which, in turn, reduces productive capacity in migrant-originating developing economies. Further, through the monetary channel, international remittance inflows may induce expansion in the level of money supply of the remittance-recipient countries as more and more of the inflows are spent on consumption rather than investment. This may fuel inflation and create macroeconomic instability that ultimately impacts negatively on socioeconomic development in the remittance-recipient countries.

However, the positive impact of remittance flows on socioeconomic development in SSA also confirms the views held by the proponents of the remittance-optimistic school of thought. Largely, the finding of a positive relationship between international remittances and socioeconomic development in SSA is consistent with the findings of Gyimah-Brempong and Asiedu (2009) on Ghana, Acosta *et al.* (2008) on developing countries, Nguyen (2008) for Vietnam, Loritz (2008) on El-Salvador and Bolivia, Ratha and Mohapatra (2007) on Uganda, Bangladesh and Ghana, Lowell and Findlay (2002) for

developing countries, Ammassari (2003) on Cote d'Ivoire and Ghana. These and other empirical findings suggest that international remittance-receiving households often tend to have higher propensities to consume and invest than do non-remittance-receiving households. This leads to the elimination of production and investment constraints and thereby invigorating socioeconomic development in remittance-recipient developing countries.

Overall, the long-run impact of international remittances on socioeconomic development in a particular country will depend largely on the uses to which the remittances are put. Where, the remittances are largely spent on consumables, their overall impact on the economy may be insignificant if not entirely negative. This may be the case in import-dependent developing economies with weak industrial base and small entrepreneurial society where, the greater proportion of consumables is made up of imports. In countries where, the remittances are largely invested in critical social infrastructure and human capital, there is bound to be sustainable long-run economic growth with expanding export base. Under this scenario, per capita income growth is likely to outstrip population growth, leading to overall socioeconomic development, all other things being equal.

With regard to the effects of other explanatory variables in our model, the results show that investment would contemporaneously induce a decline in overall development across the two sub-regions. The reason for this is not far-fetched. The act of investment entails a cost to current consumption and growth, probably, confirming the accelerator theory of investment-output relationship. The positive impact of human capital on socioeconomic development in the two sub-regions is also consistent with the general position in the literature. The negative impact of inflation on socioeconomic developments in SSA and LAC also confirms the a priori expectation that an inflationary environment represents a macroeconomic instability which impacts negatively on per capita income growth and ultimately undermines the overall socioeconomic development in low-income countries.

POLICY IMPLICATIONS AND CONCLUSIONS

The central objective of this study was to examine the extent to which international remittances impact on the overall development of SSA and LAC sub-regions separately. Our empirical results suggest that, in general, international remittance inflows do contribute to the overall development of SSA but not LAC where, remittances actually retard socioeconomic development. More specifically, this study reveals that, in the long-run, although, international remittance inflows are statistically significant in reversing underdevelopment of low-income countries of SSA, their contribution to the development process of SSA is very marginal. However, it should be noted that a marginal change in the development index will require significant changes in the overall economy. Thus, any factor that brings about a minor change in the development index should not be dismissed outright, no matter how minute that change is.

For countries in the LAC sub-regions, increasing inflows of international remittances actually retard their general socioeconomic development. These results do not necessarily suggest that remittances could not prompt growth and development in LAC but rather remittances do not generate significant macroeconomic effects in these countries, probably, because remittances have not been channeled to the productive sectors of the economy in these countries. It is possible that the inflows of remittances beyond a certain threshold could be detrimental as the Dutch Disease could become more endemic. Quite clearly, the findings of this study have confirmed that of Gupta *et al*. (2007) that remittances are not a panacea or a substitute for sustainable development of low-income countries. This implies that large-scale international migration from low-income countries to industrialized countries may have undesirable long-run consequences with regard to sustainable development. This may be due to the numerous reasons cited by the remittance-pessimistic school.

Generally, the study concludes that given that the long-run impact of international remittance inflows appears marginally positive in SSA but detrimental to the development of LAC, greater efforts should be made to channel remittance inflows to more productive sectors of the developing economies. Moreover, the fact that remittances do not have significant direct positive impact on development index does not mean that their indirect impact may not be significantly positive. Accordingly, efforts should be made to look at the impact of remittances on factors such as economic growth and stability, trade expansion, balance of payments, investment and consumption in their entirety before drawing definite conclusions about remittance impacts on developing countries at the macro-level. The debate on developmental impacts of remittances rages on just like the aid effectiveness debate. This is principally because external resource inflows per se do not automatically promote economic growth and development. To a very large extent, the development impact of external resource inflows mostly depends on the uses to which these inflows have been put. The results suggest that generally, given the dynamics of development index, LAC and SSA countries need big push to develop their economies in a comprehensive manner. Further, the traditional

development strategies of increasing investment and building a strong quality human capital base should be seriously pursued alongside making efforts to attract and channel remittances into productive sectors of the economies of SSA and LAC.

From the foregoing, the study recommends that in order to disentangle SSA and LAC from the shackles of underdevelopment:

- There is the need to invest in the development of their human resource base through access to higher standards of formal education at least to the secondary levels
- Incentives and systems must be improved to attract higher savings for investment purposes. This is because the total impact of investment on development is positive and significant in the long run
- Specific policies on the reduction in the rate of inflation must be aggressively pursued across the SSA and LAC sub-regions. For instance, governments in these economies should desist from pursuing deficit financing which will degenerate into excessive money supply in the long-run; rather policies aimed at expanding aggregate supply should be at the centre of their economic policy framework
- Policymakers in SSA and LAC should put in place measures that would ensure that international remittance inflows are channeled into productive sectors of the economy. Efforts should be directed at creating incentives for individual recipients to save some portions of their remittance-incomes with financial institutions, which would go a long way to augment the resource base of financial institutions and hence, reduce constraints to credit extensions in these economies
- Policymakers should mobilize resources to give a big push to their economies for take-off. This will require creating investment opportunities and removing both demand- and supply-side structural bottlenecks associated with investment, production and distribution

APPENDIX

Appendix 1: List countries included in the estimation and the 2008 HDI rankings

List		Rank 2006	Rank 2008
Latin America and Caribbean (LAC) countries			
1	Argentina	46	46
2	Belize	89	88
3	Bolivia	111	111
4	Brazil	70	70
5	Colombia	80	80
6	Costa Rica	50	50
7	Dominican Republic	92	91
8	Ecuador	72	72
9	El Salvador	101	101
10	Guatemala	121	121
11	Honduras	117	117
12	Mexico	51	51
13	Nicaragua	120	120
14	Panama	58	58
15	Paraguay	98	98
16	Peru	79	79
Sub-Saharan African (SSA) countries			
1	Benin	161	161
2	Cape Verde	118	118
3	Ethiopia	169	169
4	Ghana	142	142
5	Kenya	144	144
6	Mali	168	168
7	Namibia	129	129
8	Niger	174	174
9	Nigeria	154	154
10	Rwanda	165	165
11	Senegal	153	153
12	Sudan	146	146
13	Tanzania	152	152
14	Togo	159	159
15	Uganda	156	156

Source: Authors' compilation from UNDP-HDR (2006, 2008)

Appendix 2: Modelling development (DEV) by blundell-bond two-step panel estimation procedure

System dynamic panel estimation				Number of observations: 554		
Group variable: CCODE				Number of groups: 31		
Time variable: Year				Obs per groups: Min = 14, Avg = 17.87, Max = 18		
Number of instruments: 410				Wald χ^2 (13): 17721.20 Prob>χ^2: 0.0000		
lnDEV	Coefficient	Std. Error	z	P>lzl	(95% Conf.	Interval)
lnDEV_1	0.7138613	0.0312895	22.81	0.000	0.6225351	0.7751876
lnDEV_2	0.1633414	0.0635767	2.57	0.010	0.0387335	0.2879494
lnINV	-0.0213471	0.0105328	-2.03	0.043	-0.0419911	-0.0007032
lnINV_1	0.0193468	0.0152470	1.27	0.204	0.0105368	0.0492304
lnREM	0.0140379	0.0121608	1.15	0.248	0.0097968	0.0378725
lnREM_1	0.0018224	0.0059019	0.31	0.757	-0.0097451	0.0133899
lnREM_2	-0.0108958	0.0044544	-2.45	0.014	-0.0196263	-0.0021653
lnREM_3	0.0037905	0.0043160	0.88	0.380	-0.0046686	0.0122497
lnEOP	0.0013746	0.0092587	-0.15	0.882	-0.0195214	0.0167721
lnHCA	0.0345061	0.0147949	2.33	0.020	0.0055087	0.0635035
lnCPI	-0.0021249	0.0012878	-1.65	0.099	-0.0046489	-0.0003991
lnREM(L)	-0.0152800	0.0124065	-1.23	0.218	-0.0395963	-0.0090363
TDUM	0.0155955	0.0031069	5.02	0.000	0.0095061	0.0216848
CONSTANT	-0.1888493	0.0880608	-2.14	0.032	-0.3614453	-0.0162532

Instruments for differenced equation	Blundell-bond test:
GMM-Type: L(2/.).LHDI L(1/.).L.LINVGDP L(1/.).L3.Irem	Order 1: -2.7865 (0.0040)
Standard: D.LEOP D.LHCA D.LCPI D.TRDUM D.LTREND D.TDUM	Order 2: -2.0131 (0.0441)
Instruments for level equation	Order 3: -1.1.7787 (0.0753)
GMM-Type: LD. LHDI LD. LINVGDP L3D.Irem	Sargan test:
Standard: _Cons	χ^2 (396) = 26.73946
Warning: GMM two-step standard errors are biased	Prob >χ^2 = 1.0000

Source: Authors' estimation

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