
DIASPORA REMITTANCES AND OTHER FINANCIAL FLOWS IN AFRICA

ABSTRACT

The study examines the cyclicity, stability and stabilizing impact of international diaspora remittances, Foreign Direct Investment and Overseas Development Assistance. The study finds that: i) ODA is more stable than remittances and FDI, and remittances are the least stable in the sub-region; ii) all three series, remittances, ODA, and FDI are all pro-cyclical in the sub-region iii) All three financial flows are destabilizing in more than seventy per cent of the countries examined. FDI has no stabilizing impact in any of the countries examined. The findings suggest that it is necessary to examine counter-cyclicity separately from the stabilizing impact, since counter-cyclicity does not necessarily suggest that the financial flow is stabilizing.

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1.0 Introduction

International remittances have become a major source of external development finance, and have been found to be relatively more stable and more dependable than other forms of foreign-exchange inflows such as Portfolio Equity (PE), Foreign Direct Investment (FDI) and Overseas Development Assistance (ODA), and may even be counter-cyclical in times of economic hardship (Ratha, 2003; Buch and Kuckulenz, 2004). The flow of remittances to developing countries attracts increasing attention because of the volume and impact on receiving countries. Between 2000 and 2010, individuals living outside their countries grew from 175 to 215 million people, representing 3.2% of the world's population.¹ Most often, the remittances transfer are backed by altruistic or self-interest motives.² In 2010, official recorded remittances received amounted to US\$ 293 billion, exceeding total official development aid (US\$90 billion), and amounted to roughly sixty-three per cent of foreign direct investment inflows (US\$463 billion) received by developing countries in that year.^{3&4} Countries face a lot of unprecedented economic shocks as a result of fall in commodity prices (such as oil and other petroleum products, coffee, steel, gold and wheat), civil conflict and wars, crop and livestock loss as natural disasters.⁵ These countries must cope with such shocks as they affect the national wealth, the government's future financial plans and the growth of the economy. They do this by relying on external financial flows in times when they experience these transitory income shocks.

¹ Estimates on the number of individuals living outside their countries of birth are from Migration and remittances fact-book (2011), while data on world population are from World Bank Database (2011).

² Reasons for remitting include pure altruism, exchange, investment, insurance and pure self-interest.

³ Values are in 2005 constant US dollars

⁴ Migrant remittances are defined as the sum of workers' remittances, compensation of employees, and migrants' transfers. Aid and FDI figures are from World Bank (2011).

⁵ Main natural disasters include; weather variation, drought, pests, earthquakes, tsunamis and fire.

As part of a private welfare system, remittances transfer purchasing power and help to reduce poverty, smooth consumption, affect labour supply, provide working capital and can have multiplier effects through increased spending. Are remittances countercyclical and stable for sub-Saharan countries? Do remittances have a stabilizing impact for sub-Saharan countries? We shed light on these research questions by examining the cyclical nature of remittances and other financial flows in the sub-Saharan region. Our methodology relies on coefficients of variations to assess the stability and stabilizing impact, whereas cyclical nature is evaluated using correlations between national income and the external financial flows.

From the macroeconomic perspective, international remittances constitute a major source of foreign exchange, influence the national balance of payments, and represent a substantial share of the gross domestic product in many countries (Acosta et al., 2008; Jacques, 2004). They are also believed to reduce inequality among countries as it exceeds official aid transfers in some regions and act as a buffer from economic shocks (Ratha, 2003). In contrast, over-reliance on international remittances will leave households vulnerable to changes in migration cycles, if spent on unproductive investment and short-term consumption gains, remittances could increase inequality between households with access to remittances and those without, transit negative cultural practices that reduce the quality of life, reduce GDP when there are fluctuations in exchange rates, increase the growth of the parallel foreign exchange markets and money laundering (Chimhowu, Piesse and Pinder, 2005).

The remainder of this paper is organized as follows: Section 2 presents literature and an overview of Sub-Saharan Africa. Section 3 discusses the methodology and the data. In Section 4, presents the results, and section 5 concludes the study.

2.0 Literature Review

2.1.1 Cyclicity and Stability of Remittances in theory.

A financial inflow X [say, Overseas Development Assistance (ODA), Foreign Direct Investment (FDI) and Remittances (REM)] is counter-cyclical (pro-cyclical), if the correlation with GDP is negative (positive). X is stabilizing (destabilizing) if the coefficient of variation of $(GDP+X)$ is smaller (larger) than that of GDP, that is, if $CV(GDP+X) < (>) CV(GDP)$. Since $Var(GDP+X) = Var(GDP) + Var(X) + 2cov(GDP, X)$, it follows that $Var(GDP+X) > (<) Var(GDP) \leftrightarrow Var(X) + 2Cov(GDP, X) > (<) 0$.

The fact that X is countercyclical, that is, that $cov(GDP, X) < 0$, does not ensure that $Var(GDP+X) < Var(GDP)$ or that $CV(GDP+X) < CV(GDP)$. Whether X is stabilizing or not, will depend on the level of both its variance ($Var(X)$), and its mean ((X/GDP)) denoted here by μ . If $Var(X)$ is large and μ is small, X might be countercyclical and destabilizing and the same time. A possible but less likely situation is for X to be pro-cyclical as well as stabilizing. In this case, $Cov(GDP, X) > 0$, and since $Var(X) > 0$, it follows that $Var(GDP+X) > Var(GDP)$.

However, it is possible for X to be stabilizing, ie; for $CV(GDP + X) = \frac{SD(GDP+X)}{(GDP+X)}$ to be smaller than $CV(X) = \frac{SD(X)}{\bar{X}}$ (where “SD” stands for the “standard deviation”, and the upper bars above the denominators denote the mean values). A necessary condition for that to occur is for χ to be sufficiently large so that the ratio $[(GDP+X)/GDP]$ is larger than $SD(GDP+X)/SD(GDP)$. This would most likely be valid for small and poor countries with very low levels of GDP, high levels of migrants and recipients of large amounts of remittances (Neagu and Schiff, 2009).

2.1.2 Cyclicality and Stability of Remittances: Empirical Evidence

The cyclical nature of remittances may help confirm whether migrants are moved by altruistic or self-interest motives. Counter-cyclicality implies that remittances would be expected to move in the reverse direction with periodically observed fluctuations of GDP, increasing whenever there is an economic crisis, and declining whenever there is a boom in the origin countries of the migrants. If true, remittances will serve as a macroeconomic stabilizer to smooth out large fluctuations in the national income observed over different phases of the business cycle (Sayan, 2004).⁶ The stability of these inflows also opens up an opportunity for developing countries to lower borrowing costs in international capital markets by securitizing future flows of remittances.⁷ Remittance inflows remained substantial during conflict in Cote d'Ivoire (Black, et al, 2004). They increased following natural disasters suffered by Jamaican, Indian and Philippine households, respectively (Clarke and Wallsten, 2003; Gupta, 2006; Yang, 2008). Ratha (2006) indicates that remittance inflows increased after natural disasters in Bangladesh, the Dominican Republic, Haiti and Honduras, as well as in response to conflicts in Albania and Sierra Leone.

Conversely, remittances do not seem to increase in the wake of natural disasters and are more pro-cyclical in countries with shallower financial systems (Lueth and Ruiz-Arranz, 2007; Giuliano and Ruiz-Arranz, 2009). Finally, counter-cyclicality and stability of remittances is observed less often than pro-cyclicality and instability, suggesting that, for majority of the larger number of countries examined, the investment motive of remitting is stronger than the altruistic motive (Neagu and Schiff, 2009).

⁶ A strong case in point can be made by considering the disastrous consequences of the first Gulf War for economies receiving large amounts of remittances from Kuwait and other Gulf countries (Wahba, 1991).

⁷ However, since remittances are private transfers, foreign borrowing against such flows would only be possible with additional stipulations like surrender requirements, prohibition of foreign currency accounts and/or taxes on remittances.

2.1.3 Overview of Sub-Saharan Africa

Sub-Saharan Africa (SSA) is described as one of the poorest and least developed regions of the world, prone to political and economic instability, religious and civil conflicts, high levels of unemployment, corruption, rent-seeking, poor governance, weak regulatory frameworks and institutions. These factors together among others have resulted in high levels of poverty and general economic deprivation leading to regular and consistent migration of both skilled and unskilled labour to other regions of the world in search of better working and living conditions.⁸ The current classification of countries into income groups by United Nations shows that more than half of the Sub-Saharan African (SSA) countries are also classified as fragile states.^{9&10} In some cases, 60-90% of its labour force is employed in agriculture, with most of its activities still at the subsistence level and thus vulnerable to climate change and global warming.

According to World Bank estimates, after a dramatic rise between 1970 and 2000 from 93.11 million US dollars to 5.2 billion US dollars, remittances have steadily increased to 19.02 billion US dollars in 2010, approximately, 2 per cent of the regional GDP (Freund and Spatafora, 2005).¹¹ However, the recorded remittances are only a small fraction of the total remittances to the sub-region. Informal remittances to sub-Saharan Africa are relatively high, at 45-65 per cent of the amount of formal remittances (Freund and Spatafora, 2005). Relative to GDP, remittances were

⁸ See United Nations Human Development reports.

⁹ Angola, Burundi, Cameroon, Central African Republic, Chad, Comoros, Congo, Dem Rep, Congo, Republic, Cote d'Ivoire, Eritrea, Guinea, Gambia, Guinea-Bissau, Liberia, Sao Tome and Principe, Sierra Leone, Somalia, Sudan, Togo and Zimbabwe

¹⁰ A fragile state is defined as having either: a) a composite World Bank, African Development Bank and Asian Development Bank Country Policy and Institutional Assessment rating of 3.2 or less; or b) the presence of a United Nations and/or regional peace-keeping or peace-building mission (e.g. African Union, European Union, NATO), with the exclusion of border monitoring operations, during the past three years (World Bank, 2012)

¹¹ All figures are in 2005 constant US dollars.

approximately 34% of GDP in Lesotho, approximately 5% in the Gambia, Togo, Senegal, Cape Verde, Kenya, Guinea-Bissau, Uganda, Nigeria and Mali.

3.0 Methodology and Data

The methodology relies on correlations between financial flows and GDP to evaluate the cyclical nature, while coefficients of variations are used to assess the stability and stabilizing impact of financial inflows. To examine the stylized facts of business cycles and analyse the co-movements between the series of interest, each series must be de-trended first by removing the evolutionary (time-variant) trend within each series. De-trending makes it possible to separate fluctuations around the trend of each time series, allowing the examination of the statistical properties of the co-movements of deviations of real GDP, real remittances, real ODA and real FDI from their respective trends (Lucas, 1977; Kydland and Prescott, 1990).

In light of this definition, we work with original and de-trended series, $x_t \in \{y_{it}^H, r_{it}^H, o_{it}^H, f_{it}^H\}$ where y^H represents the home country's real GDP, r^H represents the home country's real remittances receipts, o^H represents the home country's real overseas development assistance receipts, f^H represents the home country's real foreign direct investment net inflows, with i representing each of the sub-Saharan countries employed for this study and t representing the time period of the study (1980-2010).

We first analyse the co-movements of each of the three financial series against national income, without trending. We then de-trend each series x_t to separate its trend (growth) component, τ_t , from the cyclical components, c_t :

$$c_t = x_t - \tau_t \tag{8}$$

We employ the Hodrick-Prescott (HP) filter (1997) which is widely used by economists; it proves to a useful de-trending device, most often producing similar

results to the polynomial filters.¹² When respective trends are properly filtered out from real remittances and output series for each country, the remaining cyclical components would be stationary with zero mean for each variable. Then, contemporaneous and asynchronous cross-correlations between the cyclical components of respective series can be calculated to identify cyclical characteristics of remittances. Pro-cyclicality (counter-cyclicality) of remittances in the context of this study refers to the tendency of real remittance receipts by each country to move above (below) its trend, whenever the corresponding real GDP is above (below) its respective trend. In the absence of such tendencies, remittances and output are said to be acyclical (Sayan, 2006).

Data

We employ the following indicators of financial flows namely: Remittances, Foreign Direct Investment (net inflows), Official Development Aid and GDP.¹³ The Gross domestic product (GDP) for home countries was chosen as an appropriate measure of national income against the Gross national product (GNP), due to the fact that the latter includes the net factor income from abroad (NFI).¹⁴ Raw data have been obtained from the World Bank's *World Development Indicators database* (WDI). Where necessary, the series were converted from nominal to real terms and have been seasonally adjusted.¹⁵

¹² The Hodrick Prescott filter add-in for excel was downloaded from http://www.web-reg.de/hp_addin.html

¹³ The remittance figure is the sum of the "workers' remittances", "compensation of employees", and "migrants' transfers" items in the IMF's IFS data for all countries not listed as high income in the World Bank's income groupings.

¹⁴ Since NFI includes net remittance receipts, home country's GDP series leave out remittances sent home by migrant workers in the country in question, and thus would be a more appropriate measure to analyse the cyclical behaviour of real remittances sent home by migrant workers against the home country output.

¹⁵ All the series employed are in US dollars and have been converted into real terms by using the GDP deflator with 2005 as the base year gotten from the Louis Fed database.

The sample includes 45 sub-Saharan African countries out of which 26 are low income, 12 lower middle income and 7 upper middle income countries. By geographical grouping, 7 are Central African countries, 17 from Eastern Africa, 5 from Southern Africa and 16 from Western Africa.¹⁶ Appendix Table A lists the names of the countries and the classifications by income group and by regions.

Table 1 presents general statistics related to the shares of REM, FDI and ODA in GDP. Panel a includes means, medians, standard deviations, and the maximum values for all countries and years pooled together, while panel b lists the same for country averages (across years). Both panels reveal that ODA is more important than REM as a share of GDP. The series have a large dispersion as shown by the magnitude of standard deviations relative to that of the means. The maximum values of the three series range from 66.80% for FDI to 74.14% for ODA in panel a, and from 41.95% for ODA to 262.15% for FDI in panel b.

Table 1: Summary Statistics

Variables (%)	a) Statistics of indicators by country and year					b) Statistics of country averages				
	Obs	Mean	Median	Std dev	Max	Obs	Mean	Median	Std. dev	Max
REM/GDP	1395	4.11	0.722	11.53	67.91	45	4.11	1.05	9.82	60.42
FDI/GDP	1395	8.86	1.324	120.04	66.80	45	8.86	1.85	38.8	262.15
ODA/GDP	1395	13.38	9.79	16.25	74.14	45	13.38	10.93	10.8	41.95

4.1 Results: Remittances, Foreign Direct Investment (FDI), Overseas Development Assistance (ODA).

4.1.1 Cyclicity of remittances

The altruistic motive for remittances predicts that in periods of economic crisis characterised by declining GDP, migrants send more money to their families in their home countries. To investigate the cyclical nature of the financial flows vis-à-vis GDP, correlations between GDP on the one hand, and REM, ODA and FDI on the other, are calculated for each country, at the aggregate level, geographical and

¹⁶ Appendix Table A1 lists the names of the countries and the classifications by income group (using the World Bank (July 2012) classification and by regions (using United Nations classification).

income-level groups. We present results using both the original indicators and the de-trended series. Additionally, the tables also include correlations between GDP and the sum of all three indicators, REM+ODA+FDI. Correlations between GDP and the sum of two of the three indicators (REM+ODA, REM+FDI, ODA+FDI) are provided in Appendix Tables A2 through A5.

Table 2 reports the coefficients of correlation for various country aggregations. The correlation between GDP and REM across all the countries is positive, and varies widely in size. The figure for all 45 countries is 0.41 and 0.57, for original and de-trended indicators, respectively. Most groups have positive correlation coefficients, which indicate pro-, rather than counter-cyclicality. The finding that Remittance transfers acts in this nature implies to a large extent that the investment motive for remitting dominates the insurance motive, that is, that migrants are more motivated by self-interests rather than altruism towards their families. When the cyclical components are separated from the trend, the three series remain positive but, foreign direct investment declines to 0.18, whereas remittances and overseas development assistance increase to 0.55 and 0.21, respectively.

Table 2: Averages of country level correlation coefficients between various inflows and GDP, 1980-2010.

Simple Average

	REM		FDI		ODA		REM+FDI+ODA	
	original	de-trended	original	de-trended	original	de-trended	original	de-trended
All Sub-Saharan Countries	0.41	0.57	0.55	0.18	0.2	0.21	0.51	0.42
Central Africa	0.55	0.83	0.04	0.30	0.26	0.48	0.15	0.62
Eastern Africa	0.74	0.39	0.54	0.20	0.63	0.32	0.81	0.41
Southern Africa	0.35	0.12	0.54	-0.06	0.73	0.19	0.60	-0.01
Western Africa	0.86	0.71	0.80	0.42	0.46	0.17	0.83	0.6
Low Income	0.55	0.56	0.09	0.09	0.71	0.63	0.75	0.63
Lower Middle Income	0.80	0.74	0.76	0.51	0.46	0.24	0.82	0.66
Upper Middle Income	0.75	0.39	0.48	-0.1	0.61	0.01	0.57	-0.09

The share of countries with the non-de-trended indicators of interest negatively correlated with GDP is provided in table 3. On one hand, 27% and 29% of countries have countercyclical REM and ODA respectively (between 8 and 60% in the various

groups for the former, and between 19 and 57% in the various groups for the latter). We see an increase although slightly of the percentage of countries for which REM is negatively correlated with GDP, whereas only 9% show counter-cyclicality in terms of ODA, when the series are de-trended. REM is more counter-cyclical for Southern African and low income and Upper Middle Income countries. FDI are more counter-cyclical in Central African and low income countries, but when de-trended they prove to be more counter-cyclical in Southern Africa and Upper Middle Income countries. ODA are more counter-cyclical in Central African and lower middle income countries, when de-trended it appears to be more counter-cyclical in Western Africa and Upper Middle Income countries.

Table 3: Cyclicity: Percentage of countries for which Inflow A is negatively correlated with GDP, 1980-2010.

	Number of countries	REM		FDI		ODA		REM+FDI+ODA	
		original	de-trended	original	de-trended	original	de-trended	original	de-trended
All Sub-Saharan Countries	45	27%	29%	18%	24%	29%	9%	9%	13%
Central Africa	7	14%	43%	29%	57%	43%	14%	14%	29%
Eastern Africa	17	24%	35%	24%	18%	29%	12%	12%	6%
Southern Africa	5	60%	40%	20%	40%	40%	20%	20%	60%
Western Africa	16	25%	13%	6%	13%	19%	0%	0%	0%
Low Income	26	31%	19%	19%	19%	23%	8%	8%	4%
Lower Middle Income	12	8%	42%	17%	25%	25%	8%	8%	17%
Upper Middle Income	7	43%	43%	14%	43%	57%	14%	14%	43%

4.1.2 Stability

In order to evaluate the stability of Remittances, Overseas Development Assistance and Foreign Direct Investment, coefficients of variation covering the period 1980-2010 are calculated for each indicator by country. Additionally, these coefficients of variation are calculated across all countries, as well as for separate geographical regions and income level groups. The averages of the coefficients of variation for various aggregates are presented in Table 4.

Across the 45 sub-Saharan countries, ODA is the most stable of all the inflows (with CV of 1.25), followed by FDI (3.23) and REM (3.83). The ranking of stability from the most stable to the least stable is ODA-FDI-REM. This pattern is robust to aggregations in Eastern African and Western African geographical regions, low income and lower middle income countries.

Table 4: Stability of Capital Inflows; Averages of coefficients of variation, 1980-2010 Simple Average

	REM	FDI	ODA
All Sub-Saharan Countries	3.83	3.23	1.25
Central Africa	2.22	2.78	1.01
Eastern Africa	2.33	2.197	0.92
Southern Africa	0.85	1.55	0.73
Western Africa	4.15	3.35	1.53
Low Income	2.15	2.06	0.96
Lower Middle Income	3.01	2.34	1.51
Upper Middle Income	1.66	2.91	1.15

The finding that Remittances are the most unstable may pose a problem for the countries that depend heavily on the inflows of remittances to their countries. This pattern varies across incomes and geographical regions. For Central African, Southern African and Upper Middle income countries, Foreign Direct Investment is the least unstable of the three financial flows. The stability of FDI decreases with countries' income, with Upper Middle Income countries like South Africa. Remittances are most stable for Upper Middle Income countries and Southern Africa, which also confirms that the remittance transfers to South Africa may be driving our results substantially. Overseas development assistance is most stable for Low income countries, and this may be as a result of the presence of conflicts in those areas. For the geographical classifications, all the three indicators, REM, ODA and FDI are most stable for Southern Africa, and are least stable for Western Africa. Again, the presence of South Africa and Nigeria may be behind our results.

Table 5: Stability: Percentages of countries with more stable Inflow A than B*, 1980-2010

	Number of countries	Series A		
		REM	REM	ODA
		Series B		
		ODA	FDI	FDI
All Sub-Saharan Countries	45	27%	82%	96%
Central Africa	7	14%	100%	100%
Eastern Africa	17	24%	76%	100%
Southern Africa	5	80%	100%	100%
Western Africa	16	19%	75%	88%
Low Income	26	15%	77%	100%
Lower Middle Income	12	42%	92%	83%
Upper Middle Income	7	43%	86%	100%

*Stability measured by coefficient of variation.

Table 5 summarizes the country-level situation by presenting the percentage of countries for which a particular inflow (series A) is more stable, that is, has a lower coefficient of variation –than another inflow (series B). Remittance inflows are more stable than overseas development assistance in 27% of the countries, but are more stable than FDI in 82%of the countries employed in the study. ODA is significantly more stable than FDI in almost all of the countries examined which represents all of the Central African, Eastern African, Southern African, Low Income and Upper Middle Income countries and, REM in 73% of the countries employed in the sample..

4.1.3 Stabilizing Impact of remittances.

Table 6 below presents the shares of countries for which Capital Inflow A is more stabilizing than GDP. The results depict overseas development assistance (ODA) as the most stabilizing of the three inflows with 29 per cent of analysed countries having $CV(X) < CV(GDP)$. This is followed by remittances at 20 per cent; Foreign Direct Investment has no stabilizing impact on the sub-Saharan economies employed in the study. Remittances are most stabilizing in Southern Africa and Upper Middle Income. For overseas development assistance, it is most stabilizing in Western Africa and Lower Middle Income countries. Remittance inflows have destabilizing impact in more than three-quarters of the countries employed in the study and FDI have no

stabilizing impact in all of the sub-Saharan countries. The stabilizing impact of REM increases with countries' income, but increasing income has no effect on the stabilizing impact of FDI. Remittances have the most stabilizing impact in Southern Africa and the least in Central Africa. For ODA, the stabilizing impact is most effective on Lower Middle Income and Western African countries. Table 3 and 4 implies that all three capital flows are more pro-cyclical and are more often than not, destabilizing for sub-Saharan Africa.

Table 6: Stabilizing impact: Percentage of countries for which the Capital Inflow is Stabilizing, 1980-2010*.

	Number of countries	A			
		REM	FDI	ODA	REM+FDI+ODA
All Sub-Saharan Countries	45	20%	0%	29%	29%
Central Africa	7	0%	0%	29%	0%
Eastern Africa	17	18%	0%	18%	41%
Southern Africa	5	80%	0%	20%	40%
Western Africa	16	13%	0%	44%	25%
Low Income	26	12%	0%	27%	31%
Lower Middle Income	12	25%	0%	42%	33%
Upper Middle Income	7	43%	0%	14%	14%

* $CV(X) < CV(GDP)$

5.0 Conclusion and Policy Implication

It is received wisdom that remittances are a growing source of foreign exchange to recipient countries. The question lies in whether these remittances are counter-cyclical and stable for the countries, especially developing countries. To check this, this study investigated the stability, cyclicity and stabilizing impact of remittances, FDI and ODA. Both at the country and aggregate levels, it was found that Remittance inflows to the sub-region are less stable than Overseas Development Assistance and Foreign Direct Investment, net inflows. Second, while ODA is counter-cyclical in 29% of the countries (9% according to analysis based on de-trended indicators),

remittances and FDI are counter-cyclical in only 27% and 18% of the countries examined (29% and 24% if variables are de-trended).

Although, remittances are seen to increase at times of major upheavals such as natural disasters, armed conflicts or economic crises in migrants' source countries, we find them to be pro-cyclical as well as destabilizing for a majority of developing countries over large periods of times (1980 to 2010 in our analysis). Moreover, adding REM to FDI and ODA inflows raises the pro-cyclicality of these inflows as well as their destabilizing impact. The results should be treated cautiously as large remittances to countries like Nigeria and South Africa could be affecting the analysis. This suggests that the cyclical and stabilizing virtues of remittances inflows be examined on a country-by-country basis. The country-level patterns in the observed behaviour of remittances and other inflows require further empirical examination. The objective of this paper was to simply provide evidence on the behaviour of remittances, as well as ODA and FDI. The results would help provide an insight into the motives behind remittance transfers.

Our conclusions should also be treated cautiously based on the fact that they are drawn solely based on the examination of formal remittance flows; while informal channels are estimated by the researchers to still attract about 50% of remittances (Ratha, 2006). The lack of appropriate report on informal remittance flows prevents its inclusion in our study. Therefore, the cyclical behaviour of informal remittances cannot be established, and neither is it possible to know the impact of including informal remittances on our findings. Remittance flows being pro- or counter-cyclical and stabilizing or not may also depend on their importance relative to GDP and other sources of inflows.

The policy implications of the results are numerous. On one hand, the fact that the financial flows are pro- rather than counter-cyclical implies that their presence are most often felt when the economies are on a path of growth. This does not mean that the financial flows have no role to play in the economy, it means they play a better role, when the national incomes of the economies are growing, making it a viable environment for setting up businesses or investment in key sectors like the financial, power and real estate sectors. On the other hand, this means that in the presence of shocks to national income, the inflows from these capital indicators may be on the flat or even non-existent. Policy makers must thus ensure that alternative means are set up such as foreign reserve accounts, to provide aid in the presence of transitory income shocks. The destabilizing nature of these financial flows in the sub-region may thus, be as a result of their pro-cyclical nature. However, even though REM may be small as a share of GDP, it may amount to a large share of the income of recipient households and may therefore have a substantial impact on the stability of these households' income and play a role in insuring the families against transitory shocks to income.

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APPENDIX

A: List of sub-Saharan African countries employed in the study

WORLD BANK LIST OF SUB-SAHARAN COUNTRIES (JULY 2012)							
	COUNTRY	COUNTRY CODE	INCOME GROUP	LENDING CATEGORY	GEOGRAPHICAL REGION	OTHER (1)	OTHER (2)
1	ANGOLA	AGO	UMI	IDA	CENTRAL AFRICA		Fragile State
2	BENIN	BEN	LI	IDA	WESTERN AFRICA	HIPC	
3	BOTSWANA	BWA	UMI	IBRD	SOUTHERN AFRICA		
4	BURKINA FASO	BFA	LI	IDA	WESTERN AFRICA	HIPC	
5	BURUNDI	BDI	LI	IDA	EASTERN AFRICA	HIPC	Fragile State
6	CAMEROON	CMR	LMI	IDA	CENTRAL AFRICA	HIPC	
7	CAPE VERDE	CPV	LMI	BLEND	WESTERN AFRICA		Fragile State
8	CENTRAL AFRICAN REPUBLIC	CAF	LI	IDA	CENTRAL AFRICA	HIPC	Fragile State
9	CHAD	TCD	LI	IDA	CENTRAL AFRICA	HIPC	Fragile State
10	COMOROS	COM	LI	IDA	EASTERN AFRICA	HIPC	Fragile State
11	CONGO, REP	COG	LMI	IDA	CENTRAL AFRICA	HIPC	Fragile State
12	COTE D'IVOIRE	CIV	LMI	IDA	WESTERN AFRICA	HIPC	Fragile State
13	ERITREA	ERI	LI	IDA	EASTERN AFRICA	HIPC	Fragile State
14	ETHIOPIA	ETH	LI	IDA	EASTERN AFRICA	HIPC	
15	GABON	GAB	UMI	IBRD	CENTRAL AFRICA		Fragile State
16	GAMBIA, THE	GMB	LI	IDA	WESTERN AFRICA	HIPC	
17	GHANA	GHA	LMI	IDA	WESTERN AFRICA	HIPC	
18	GUINEA	GIN	LI	IDA	WESTERN AFRICA	HIPC	Fragile State
19	GUINEA-BISSAU	GNB	LI	IDA	WESTERN AFRICA	HIPC	Fragile State
20	KENYA	KEN	LI	IDA	EASTERN AFRICA		
21	LESOTHO	LSO	LMI	IDA	SOUTHERN AFRICA		
22	LIBERIA	LBR	LI	IDA	WESTERN AFRICA	HIPC	Fragile State
23	MADAGASCAR	MDG	LI	IDA	EASTERN AFRICA	HIPC	
24	MALAWI	MWI	LI	IDA	EASTERN AFRICA	HIPC	
25	MALI	MLI	LI	IDA	WESTERN AFRICA	HIPC	
26	MAURITANIA	MRT	LI	IDA	WESTERN AFRICA	HIPC	
27	MAURITIUS	MUS	UMI	IBRD	EASTERN AFRICA		
28	MOZAMBIQUE	MOZ	LI	IDA	EASTERN AFRICA	HIPC	
29	NAMIBIA	NAM	UMI	IBRD	SOUTHERN AFRICA		
30	NIGER	NER	LI	IDA	WESTERN AFRICA	HIPC	
31	NIGERIA	NGA	LMI	IDA	WESTERN AFRICA		
32	RWANDA	RWA	LI	IDA	EASTERN AFRICA	HIPC	
33	SAO TOME & PRINCIPE	STP	LMI	IDA	CENTRAL AFRICA	HIPC	Fragile State
34	SENEGAL	SEN	LMI	IDA	WESTERN AFRICA	HIPC	
35	SEYCHELLES	SYC	UMI	IBRD	EASTERN AFRICA		
36	SIERRA LEONE	SLE	LI	IDA	WESTERN AFRICA	HIPC	Fragile State
37	SOMALIA	SOM	LI	IDA	EASTERN AFRICA	HIPC	Fragile State
38	SOUTH AFRICA	ZAF	UMI	IBRD	SOUTHERN AFRICA		
39	SUDAN	SDN	LMI	IDA	EASTERN AFRICA		Fragile State
40	SWAZILAND	SWZ	LMI	IBRD	SOUTHERN AFRICA		
41	TANZANIA, UNITED REPUBLIC	TZA	LI	IDA	EASTERN AFRICA	HIPC	
42	TOGO	TGO	LI	IDA	WESTERN AFRICA	HIPC	Fragile State
43	UGANDA	UGA	LI	IDA	EASTERN AFRICA	HIPC	
44	ZAMBIA	ZMB	LMI	IDA	EASTERN AFRICA	HIPC	
45	ZIMBABWE	ZWE	LI	BLEND	EASTERN AFRICA		Fragile State

Source: World Bank and the United Nations databases (2012).

LI (Low Income)- \$1,025 or less; LMI (Lower Middle Income)- \$1,026-\$4,035; UMI- \$4,036-\$12,475

IDA-International Development Association (lend to countries with per capita income of less than \$1,195); IBRD-International Bank for Reconstruction and Development (lend to countries with per capita income of \$1,195 or more.

A2: Cyclicity: Averages of country-level correlation coefficients between pairs of Inflows and GDP, 1980-2010.

Simple Average

	REM+FDI		REM+ODA		FDI+ODA	
	original	de-trended	original	de-trended	original	de-trended
All Sub-Saharan Countries	0.55	0.41	0.37	0.5	0.49	0.25
Central Africa	0.06	0.59	0.3	0.77	0.13	0.41
Eastern Africa	0.72	0.36	0.8	0.4	0.71	0.34
Southern Africa	0.56	-0.04	0.61	0.18	0.59	-0.03
Western Africa	0.85	0.64	0.78	0.59	0.76	0.37
Low Income	0.51	0.34	0.78	0.69	0.69	0.56
Lower Middle Income	0.83	0.69	0.77	0.65	0.73	0.46
Upper Middle Income	0.53	-0.09	0.75	0.12	0.52	-0.10

A3: Cyclicity: Percentage of countries for which capital Inflow A is negatively correlated with GDP, 1980-2010

	Number of Countries	A					
		REM+FDI		REM+ODA		FDI+ODA	
		original	de-trended	original	de-trended	original	de-trended
All Sub-Saharan Countries	45	16%	20%	11%	9%	11%	11%
Central Africa	7	14%	43%	14%	14%	14%	29%
Eastern Africa	17	24%	12%	12%	12%	18%	6%
Southern Africa	5	20%	60%	20%	20%	20%	40%
Western Africa	16	6%	6%	6%	0%	0%	0%
Low Income	26	19%	12%	12%	8%	12%	4%
Lower Middle Income	12	8%	25%	8%	8%	8%	8%
Upper Middle Income	7	14%	43%	14%	14%	14%	43%

A4: Stabilizing Impact: Percentage of countries for which Capital Inflow is stabilizing, 1980-2010.*

	Number of countries	A		
		REM+FDI	REM+ODA	FDI+ODA
All Sub-Saharan Countries	45	2%	42%	16%
Central Africa	7	0%	43%	0%
Eastern Africa	17	0%	35%	24%
Southern Africa	5	20%	40%	0%
Western Africa	16	0%	50%	19%
Low Income	26	0%	42%	19%
Lower Middle Income	12	8%	50%	17%
Upper Middle Income	7	0%	29%	0%
* CV(A) < CV(GDP)				

A5: Top 10 countries with the highest total remittances received, 2010.

	Country	Total remittances (in millions) US\$	GDP (in millions)	Total Population	Total Remittances as % of GDP	Total remittances per capita
1	Nigeria	10045.020	202522.959	158.423	4.960	63.406
2	Sudan	1973.796	62045.783	43.552	3.181	45.320
3	Kenya	1776.987	32198.151	40.513	5.519	43.862
4	Senegal	1346.047	12855.298	12.434	10.471	108.255
5	South Africa	1119.266	363910.426	49.991	0.308	22.389
6	Uganda	914.502	17010.766	33.424	5.376	27.361
7	Lesotho	745.903	2179.351	2.171	34.226	343.576
8	Mali	436.210	9251.389	15.370	4.715	28.381
9	Togo	333.095	3153.401	6.028	10.563	55.258
10	Benin	248.060	6633.056	8.850	3.740	28.029

The data presented in the above table are from the World Bank databank. "Total remittances" refers to the sum of the 1) workers' remittances 2) compensation to employees, and 3) migrant transfers reported by each country.

A6: Top 10 countries with the highest total remittances received as a % of GDP, 2010.

	Country	Total remittances (in millions) US\$	GDP (in millions US\$)	Total Population	Total Rem as % of GDP	Total rem per capita
1	Lesotho	745.9	2,179.35	2.171	34.226	343.58
2	Gambia, The	115.7	806.52	1.729	14.345	66.92
3	Togo	333.1	3,153.40	6.028	10.563	55.26
4	Senegal	1,346.1	12,855.30	12.434	10.471	108.26
5	Cape Verde	138.6	1,648.093	0.496	8.412	279.51
6	Kenya	1,776.9	32,198.151	40.513	5.519	43.86
7	Guinea-Bissau	48.1	878.518	1.515	5.479	31.78
8	Uganda	914.5	17,010.8	33.424	5.376	27.36
9	Nigeria	10,045.0	202,522.9	158.423	4.960	63.41
10	Mali	436.2	9,251.4	15.370	4.715	28.38

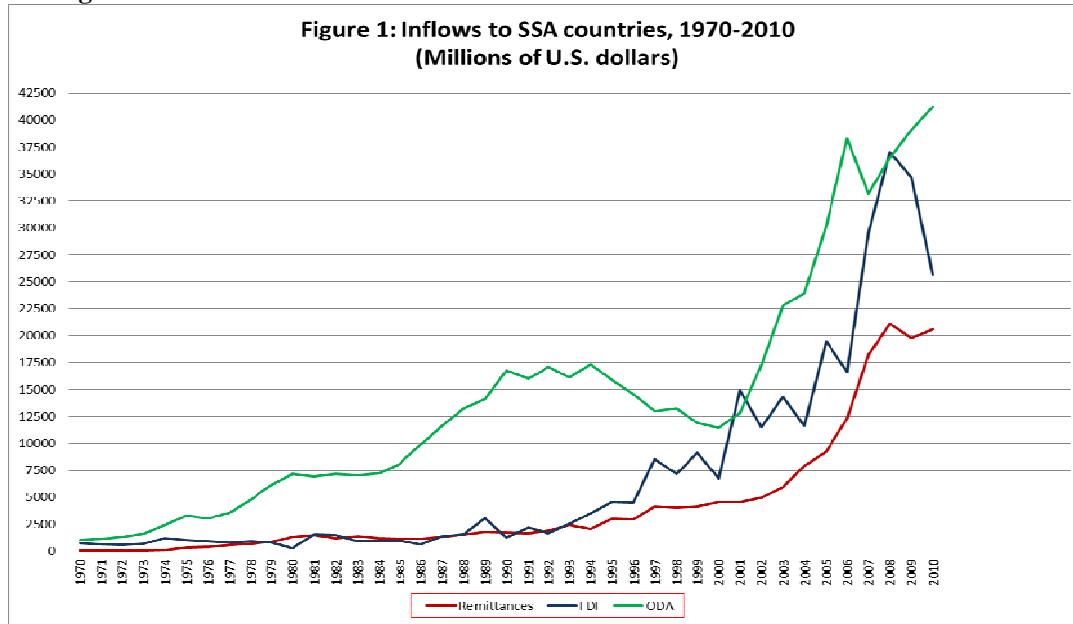
The data presented in the above table are from the World Bank databank. "Total remittances" refers to the sum of the 1) workers' remittances 2) compensation to employees, and 3) migrant transfers reported by each country.

A7: Top 10 countries with the highest total remittances received per capita, 2010.

	Country	Total remittances (in millions) US\$	GDP (in Millions)	Total Population	Total Remittances as % of GDP	Total remittances per capita
1	Lesotho	745.903	2179.351	2.171	34.226	343.576
2	Cape Verde	138.637	1648.093	0.496	8.412	279.509
3	Mauritius	226.410	9723.858	1.281	2.328	176.744
4	Seychelles	10.837	936.609	0.087	1.157	124.560
5	Senegal	1346.047	12855.298	12.434	10.471	108.255
6	Swaziland	109.000	3697.607	1.056	2.948	103.220
7	Gambia, The	115.699	806.524	1.729	14.345	66.917
8	Nigeria	10045.020	202522.959	158.423	4.960	63.406
9	Togo	333.095	3153.401	6.028	10.563	55.258
10	Botswana	99.511	14858.674	2.007	0.670	49.582

The data presented in the above table are from the World Bank databank. "Total remittances" refers to the sum of the 1) workers' remittances 2) compensation to employees, and 3) migrant transfers reported by each country.

B1. Figure 1: Inflows to sub-Saharan countries.



B2. Figure 2: Average Workers' Remittances: 5-year averages.

