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Accounting for Diaspora Remittances in the Economic Development of Sub-Saharan Africa

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Abstract

This study analyzes the impact of remittances on economic growth in Sub-Saharan Africa using a 2013 cross-country data of 48 countries. In 2013, SSA received approximately $37 billion in remittances and this figure is projected to grow steadily in the years ahead. For many countries in SSA such as Nigeria, remittances constitute the second largest source of foreign exchange, right behind crude oil exports. In spite of the recognition that remittances now constitute a major source of funds flow to SSA, the impact of these funds on economic growth has not been given adequate attention in the literature. This is the void that provides the motivation for this study. Utilizing Ordinary Least Squares regression and a cross-country data from 48 countries, our empirical analysis reveals that, rather than a positive impact as anticipated, remittances showed a statistically significant negative impact on economic growth in SSA. One plausible explanation for this state of affairs is that rather than being invested in productive endeavors such as education, and entrepreneurship, recipients of remittances may be engaging in conspicuous consumption of items such as cars, electronics, and other commodities imported from the developed economies. Hence, the remittances end up returning to where they came from. As this happens, SSA loses at both ends – first, as brains leave the region, and second, as remittances equally return to the developed economies. In light of this unexpected outcome with remittances, developing countries are advised to make a concerted effort to harness remittances for economic growth.

Keywords: Remittances, Sub-Saharan Africa, Economic Development, Migrant Workers.

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1. Introduction

Due to deteriorating economic conditions, millions of professionals in Sub-Saharan Africa (SSA) have migrated to other countries, especially the developed countries of North America and Europe in search of greener pastures. El-Khawas (2004) states that "there are more African scientists and engineers working in the United States than there are in Africa." Quite often, this brain drain is blamed for the worsening socio-economic backwardness of SSA as it exacerbates the inequality between developed and developing countries. While the economic costs of this brain drain are

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staggering, it is also a fact that these professionals remit billions of dollars to their home countries and these remittances are supposed to mitigate the losses resulting from the brain drain. In line with this reasoning, Deaton (2013) asserts that "the effects of migration on poverty reduction dwarf those of free trade," and Ratha (2013) concurs. As a matter of fact, many countries such as India and China are touted as countries that are now reaping the benefits of outward migration that was initially considered to be inimical to economic growth. Not only do Indian and Chinese migrants remit billions of dollars to their home countries, there is now a reverse migration from North America and Europe back to their home countries. These "prodigal" professionals are now returning as highly skilled professionals in technology and medicine and they are driving enviable developments in medicine and high technology start-ups. There is now a general sense that this phenomenon may have already started in SSA and will intensify in the years ahead.

Generally, remittances are transfers in cash or kind from a migrant to residents of his or her country of origin. Broadening this definition in line with entries in Balance of Payments of countries, the IMF (2009) defines remittances as a sum of two components – "compensation of employees" and "personal transfers." The World Bank (2011) states that as of 2010, there are 215 million migrants (3 percent of the world population) remitting more than $440 billion to their countries of origin. Of this amount, developing countries received a lion share of $325 billion (74% of remittances). It is worth noting that this amount captures only remittances executed through official channels such as banks, Western Union, MoneyGram and other similar organizations. Considering that many remittances are executed through informal channels such as person to person, the amount reported by the World Bank may be grossly understated. To underscore the importance of remittances to developing economies, World Bank statistics indicate that in 2009, remittances were 300 percent of official foreign aid flows and about as large as foreign direct investment flows to the developing world. As a matter of fact, remittances constitute a major source of foreign exchange for many developing countries. For one country in SSA – Nigeria – remittances constitute the second largest source of foreign exchange (about $10 billion in 2010), right behind crude oil, and by 2013, this amount had doubled to over $20 billion. For SSA, total remittances amounted to $20.6 billion in 2009 and by 2013 this amount had risen to about $37 billion. Remittances, therefore, constitute a very significant source of funds flow to SSA, second only to FDI. According to Ratha (2013), remittances are often countercyclical, compared to other private flows and help to provide a form of insurance against external shocks since migrants are likely to be more generous in times of hardship. Hence, the importance of remittances to SSA cannot be overemphasized.

Do the billions of dollars remitted annually to SSA have any appreciable impact on economic growth? In other words, what is the economic impact of the remittances to SSA? Are these remittances consumed on imported consumer goods, in which case, they contribute minimally to economic growth or are they invested in productive endeavors which yield jobs and aid more production, thereby leading to meaningful economic growth? In spite of these germane questions and the realization that these issues warrant an investigation, a search of the literature reveals limited empirical evidence on this issue with respect to SSA. This is a sentiment echoed by studies such as Iqbal and Sattar (2005) and Guiliano and Ruiz-Arranz (2009). In essence, the impact of remittances on the development and economic growth in SSA remains an open question. The purpose of this study, therefore, is to examine the impact of remittances on economic growth in SSA. It is hoped that the results of this study will aid policy-makers in SSA to adopt sound policy initiatives that will harness these remittances for more productive endeavors.

The remainder of the paper is organized as follows. Section 2 takes on a review of the literature while section 3 discusses data and methodology. The empirical analysis is discussed in section 4 and the paper ends with summary and conclusion in section 5.

2. Literature Review

The World Bank (2011) states that as of 2010, migrants remitted more than $440 billion to their countries of origin. Of this amount, developing countries received a lion share of $325 billion (74% of remittances). With these billions of dollars in remittances flowing to the developing world, it is inevitable that questions will arise as to their effectiveness or impact on economic growth and poverty alleviation. As expected, studies are emerging and investigating the impact of these remittances on economic growth. These studies tend to fall into two categories – those that claim a positive impact on economic growth and others that claim a negative impact on economic growth. These contrary results are not entirely surprising given that some of these studies use time series data, cross-sectional data, or survey data. Furthermore, these studies cover different time periods when the macroeconomic conditions of the recipient countries may be undergoing structural adjustments, booms or recessions. One area of agreement in all this is that more studies are needed before more robust conclusions can be achieved. With this in mind, a review of the literature will be attempted below.

Some studies have concluded that remittances contribute significantly to economic growth. Utilizing a dataset covering 100 developing countries, Guiliano and Ruiz-Arranz (2009) examined the impact of remittances on economic growth. The study found that remittances impacted economic growth positively in countries with less developed financial systems by providing an alternative means of financing investments. The same study also found that remittances do not boost economic growth in countries with high levels of financial development. Similarly, Ang (2007) investigated the impact of remittances on economic growth in the Philippines. The study concluded that while remittances had a positive impact on economic growth at the national level, the impact at the regional level was mixed. Ang goes on to state that the findings are far from being conclusive and calls for more studies. Supporting Ang, Yang (2008) concluded that remittances by Filipino migrants were positively related to economic growth. In their examination of the impact of remittances on economic growth in Pakistan during 1972-73 to 2002-03, Iqbal and Sattar (2005) concluded that remittances had a positive impact on GDP.

While touting the positive role of remittances in human capital building areas, poverty alleviation, and sustainable development, Ratha (2013) cautions that the impact of remittances to a great extent depends on the strength of domestic institutions and overall macroeconomic environment. Utilizing a panel of 36 countries in Africa, Nyamongo et al. (2012) concluded that not only do remittances impact economic growth positively, they equally contribute to the development of the financial sector. Examining remittances, investment and rural asset accumulation in Pakistan, Adams (1998) concluded that remittances had a positive and significant impact on economic growth just as Massey and Parrado (1998) found in their examination of international migration and business formation in Mexico. Adams and Page (2005) and Anyanwu and Erhijakpor (2010) conclude that remittances "… reduce the level, depth, and severity of poverty" in developing countries. Still in support of the positive relationship between remittances and economic growth, country studies such as Adams (2005) in Guatemala; and Adams et al. (2008) in Ghana; found a significant positive relationship between remittances and economic growth.

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Conversely, a number of empirical studies have found a negative relationship between remittances and economic growth. Chami et al. (2003) concluded that remittances had a negative impact on economic growth as a result of the moral hazard problem. They argued that remittances are compensatory in nature and take place under asymmetric information. Hence, the problem of moral hazard is severe enough to impact economic activity negatively. In addition, Chami et al. (2003) state that remittances differ substantially from private capital flows in terms of their motivation and their effects. In essence, they concluded that remittances cannot be reckoned as a major source of capital for economic growth. In the same vein, Guiliano and Ruiz-Arranz (2009) while acknowledging that the relationship between remittances and economic growth is a priori ambiguous, found that remittances impact economic growth negatively in countries with high levels of financial development. Although this study does not explore the moral hazard issue in great detail, Guiliano and Ruiz-Arranz state that remittances can discourage labor supply and enterprise in countries with well-functioning credit markets. In their examination of the impact of remittances on the real exchange rate in Cape Verde, Bourdet and Falck (2006) found that remittances usher in a form of the Dutch Disease syndrome "and thereby have an adverse effect on the competitiveness of the tradable sector." This sudden appreciation of the local currency introduces all manner of debilitating distortions in the whole economy as we have witnessed in many countries and economic growth suffers.

Using a panel data from the Indonesian Family Life Survey in their evaluation of the economic impact of remittances in Indonesia, Adams and Cuecuecha (2010) found that households receiving remittances in Indonesia are poorer than other households. Furthermore, they found that households receiving remittances spend more at the margin on consumption goods instead of deploying these remittances in more productive investments. On their part, El-Khawas (2004) and Reinert (2007) argued that remittances cannot be large enough or impact economic growth enough to compensate developing countries for the huge losses suffered at home as a result of brain drain, as the forfeited income taxes and value-added taxes accrue to the destination countries. They further argued that these migrants are probably the ones most equipped to be entrepreneurs and innovators that are responsible for sustainable economic growth.

In light of available literature, it is clear that the relationship between remittances and economic growth remains ambiguous. Furthermore, the literature on the impact of remittances on economic growth in SSA is severely limited. This study, therefore, adds another perspective to the debate by examining the relationship between remittances and economic growth in SSA. Hopefully, this study provides some insights and sheds a little more light on this very important issue.

3. Data and Methodology

In empirical estimations of the determinants of economic growth, several variants of empirical models are engaged in the effort to capture the impact of various variables on economic growth. One common approach underlying these models is that they basically follow the production function approach where gross domestic product (GDP), a standard measure of economic growth or output, depends on inputs of labor, capital, and technological progress. These basic inputs are impacted to a large extent by the prevailing economic, political, social and business environment in the countries of interest. Hence, in addition to the basic inputs of labor and capital, other control variables designed to capture the various environments are also added to the regression equation. Proxies of these environments inter alia include monetary policy, fiscal policy, aid, savings, and system of governance. The GDP is then regressed on these determinants of economic growth to ascertain the factors that are statistically significant and those that are not.

It must be pointed out that in the literature on the determinants of economic growth, no single model estimated to date contains all these variables and neither is there a standard or generally agreed upon model. In reality, what is observed and depending on the particular emphasis of the study in question, is that variants of this model are estimated as demonstrated by studies such as Sachs and Warner (1997a); Sachs (1997b); Barro (1991); Barro and McCleary (2003); Easterly and Levine (1997); Easterly and Pfutze (2008); Burnside and Dollar (2000); Feeny (2005); Sharma and Bhattarai (2013). In most of the studies examining the impact of remittances on economic growth, the remittance variable is added as another independent variable.

In this study, the basic model estimated follows:

$$RGDP = f(FDI, AID, REM, GOV, LTR) \quad (1)$$

Where RGDP = real GDP per capita

FDI = *foreign direct investment*

AID = *foreign aid (overseas development assistance)*

REM = *remittances from the diaspora*

GOV = *government expenditures (proxy for fiscal policy)*

LTR = *literacy rates indicating the skill levels of the workforce*

So, equation (1) can be more specifically written as follows:

$$RGDP = \beta_0 + \beta_1 FDI + \beta_2 AID + \beta_3 REM + \beta_4 GOV + \beta_5 LTR + \varepsilon \quad (2)$$

A priori, one would expect the following relationships:

$\delta RGDP/\delta FDI > 0$; $\delta RGDP/\delta AID > 0$ or < 0; $\delta RGDP/\delta REM > 0$ or < 0;

$\delta RGDP/\delta GOVT > 0$ $\delta RGDP/\delta LTR > 0$

The data used in this study come from the World Bank. Appendix A provides a listing of the countries covered in this study along with their GDP and annual remittances in 2013. Table 1 presents the correlation matrix of the variables used in our regression analysis in Table 3.

Table 1 – Correlation Matrix for Variables Used in Table 3

	LTR	*REM/gdp*	*FDI/gdp*	*GOV/gdp*	*AID/gdp*
LTR	1.000				
REM/gdp	(0.036)	1.000			
FDI/gdp	(0.159)	0.121	1.000		
GOV/gdp	0.327*	0.179	0.175	1.000	
AID/gdp	(0.306) *	0.404*	0.197	(0.038)	1.000

*Correlation is significant at the 0.05 level (2-tailed)

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4. Empirical Results and Discussion

For empirical estimations, Ordinary Least Squares (OLS) estimation technique is utilized with SPSS (Version 25, 2017) software. The OLS technique appears adequate for this study due to the nature of the data utilized. The usual econometric issues of auto-correlation, multicollinearity, and heteroscedasticity do not appear to be of serious concern as certain steps were employed to ensure that the incidence of these issues and their accompanying biases were minimized. First, a table of simple correlations was produced to identify variables that were significantly correlated, and these variables were not simultaneously included in the same regression, thereby minimizing the incidence of multicollinearity. Second, wide disparities in our sample countries dictate that all variables be scaled to avoid observing relationships driven by size. Hence, all variables are adjusted by population, GDP or introduced as growth rates, and this minimizes the incidence of heteroscedasticity and associated biases. Since we are using a cross-sectional data, auto-correlation which poses more problems in time-series data is not of serious concern here. In spite of these precautions, diagnostic tests for auto-correlation, heteroscedasticity, and multicollinearity were equally carried out, and they confirm that these issues do not constitute a threat to our analysis.

Table 2 displays the results of our regression analysis (Model A) with RGDP per capita as the dependent variable and Remittances per capita, FDI per capita and Literacy Rates as independent variables. Government expenditure (GOV) was excluded from Model A because of its statistically significant correlation with AID, FDI, and LTR, as this minimizes the incidence and undesirable effects of multicollinearity. In the same vein, AID was excluded because of its statistically significant correlation with REM. The F-statistic of 11.471 indicates that the null hypotheses that the regression coefficients are jointly equal to zero can be rejected at the 0.01 level of significance. Therefore, model A does capture some relationship between the dependent and independent variables. The adjusted R2 of 0.473 in model A is within the range for cross-sectional studies of this nature.

Table 2 – OLS Regression Results (absolute t-values in parentheses)

Dependent Variable:	*Real GDP per capita*
Independent Variables	*Model A*
Constant	-2010.076 (2.008)
REM/capita	3.901 (1.022)
FDI/capita	20.077 (3.882) ***
LTR	54.762 (3.639) ***
F-Test	11.471
R^2	0.518
Adjusted R^2	0.473
Number of observations	35

***Statistically significant at the 0.01 level.

Because of the statistically significant correlations between GOV, AID, FDI, and LTR, GOV and AID were excluded from this regression to minimize the incidence and problems associated with multicollinearity.

Turning to individual estimates, the coefficient of remittances is negative indicating a negative relationship between remittances and GDP. Although, there are plausible explanations for this outcome; these are mute points here since the variable is not statistically significant. Foreign direct investment (FDI) has a statistically significant positive impact on GDP and this confirms a priori expectations. The coefficient of literacy rates (LTR) is positive and statistically significant at the 0.01 level. This also confirms a priori expectations that higher literacy rates boost productivity.

Table 3 displays the results of our regression analysis with RGDP per capita as the dependent variable while the independent variables, except LTR, are scaled by GDP. Again, scaling by GDP minimizes the incidence of heteroscedasticity which is always a theoretical possibility in a cross-sectional data. The F-statistics of 4.301, 6.242 and 3.926 in Models B, C, and D respectively, indicate that the null hypotheses that the regression coefficients are jointly equal to zero can be rejected at the 0.05 level of significance. Furthermore, the adjusted R2 values in models B, C, and D are within the range for cross-sectional studies of this nature.

One very interesting insight is revealed in Table 3 with regard to remittances. While the sign of the coefficient of remittances was negative and not statistically significant in Table 2 (Model A), they maintained the negative signs in addition to becoming statistically significant in Table 3 (models B and C). According to available literature, the impact of remittances depends greatly on how the remittances are deployed or consumed, the development of domestic institutions, and overall macroeconomic environment. If remittances are used primarily in the consumption of imported commodities such as electronics and cars, their impact is minimal to negative as the resources are ultimately returned to the developed economies (Reinert 2007; Ratha 2013). On the other hand, if remittances are invested in productive endeavors such as education, skill acquisition, and entrepreneurial endeavors, they boost overall productivity of the economy as confirmed by Yang (2008) and Deaton (2013). Government expenditure (GOV) in Table 3 (Model D) maintains a marginally statistically significant positive impact on GDP, thereby confirming a priori expectations. Literacy rates (LTR) have a statistically significant positive impact on GDP as expected while foreign aid (AID) indicates a statistically significant negative impact on GDP. The negative impact of foreign aid is not unexpected given the mixed results of earlier empirical studies such as Burnside and Dollar (2000), Easterly et al. (2003), Sharma and Bhattarai (2013) and Didia et al. (2015). Surprisingly, foreign direct investment (FDI) was not statistically significant here.

Because of the statistically significant correlations between the explanatory variables, all five variables were not included in any regression model simultaneously. Significantly correlated were staggered in models B, C and D to minimize the incidence and problems associated with multicollinearity.

The surprising aspect and perhaps the most interesting or significant results of this study lie in the negative coefficient of remittances. Ordinarily, one would expect that economic growth would be impacted positively as more remittances flow into SSA. Although illuminating, the results here provide the impetus for a deeper evaluation of the deployment of remittances in the economies of SSA. With regard to remittances, some studies such as Chami at al. (2003) and Adams and Cuecuecha (2010) have suggested that remittances should not be expected to seriously boost economic growth because such resources rather than being invested, are devoted primarily to consumption goods such as food, electronics, cars and other luxuries imported from developed countries. Hence, the remittances ultimately return to where they came from – developed economies. In effect, by sending remittances to relatives at home, the diaspora may be inadvertently

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engaged in creating some citizens who now shun the labor market and wait for remittances from abroad. By this chain of events, remittances may be negatively impacting economic growth in SSA as the empirical estimations here confirm. This study, therefore, provides support for studies that confirm that remittances do not boost economic growth.

Table 3 – OLS Regression Results (absolute t-values in parentheses)

Dependent Variable: Real GDP per capita			
Independent Variables	*Model B*	*Model C*	*Model D*
Constant	234.052 (0.179)	-1408.847 (1.167)	1853.019 (1.055)
LTR		59.978 (3.513) ***	
REM/gdp	-169.001 (2.180) **	-96.472 (1.917) *	
FDI/gdp	-76.832 (1.393)	-20.743 (0.567)	-54.218 (0.771)
GOV/gdp			168.187 (1.665) *
AID/gdp			-41.829 (2.684) **
F-Test	4.301	6.242	3.926
R^2	0.275	0.355	0.227
Adjusted R2	0.211	0.298	0.170
Number of observations	37	37	43

*Statistically significant at the 0.10 level, **statistically significant at the 0.05 level, ***statistically significant at the 0.01 level.

5. Summary and Conclusion

Due to a dearth of economic opportunities, professionals and other skilled personnel from SSA have been emigrating to other countries in search of greener pastures. Given that these professionals still cater for relatives in their home countries, billions of dollars are remitted home annually to SSA. In other words, the brain drains which has featured prominently in discussions as partly responsible for the lack of economic growth in SSA may now be a blessing in disguise in light of the remittances now flowing back to SSA. Therefore, the objective of this study is to evaluate the impact of these remittances on the economic growth of SSA. Are the remittances off-setting the loss in productivity due to the brain drain that continues unabated? This question assumes an urgent dimension in light of the recent exploits of the diaspora from other countries such as India, who are credited with "silicon valley" style technology transfer to India among others. In the case of SSA, there are insinuations or suggestions that the volume of remittances may be compensating for the loss in productivity due to the exodus of professionals and other skilled personnel. Thus, more empirical studies are needed to address this issue. This study, therefore, adds to the limited existing literature by examining the impact of remittances on the economic growth of SSA.

Our empirical estimations reveal that remittances impact economic growth negatively in SSA. In the final analysis, remittances return to where they came from as the recipients in SSA may be engaging in the conspicuous consumption of food, electronics, cars and other luxuries imported from the developed economies. If these remittances were invested in education, entrepreneurship, and other productive endeavors, the impact on economic growth in SSA might be different from what our empirical analysis reveals. In addition, the macroeconomic environment and the absence of essential institutions constitute a serious impediment to the effectiveness of capital including remittances. Consequently, SSA is losing at both ends. First, SSA suffers losses in productivity resulting from the unprecedented brain drain witnessed in the last few decades and absorbs losses again in the diaspora remittances that ultimately return to the developed economies as payments for imported consumer goods. This vicious cycle is bound to continue until SSA diversifies its economies and starts manufacturing the commodities it consumes. In light of this unexpected outcome with remittances, developing countries are advised to make a concerted effort to harness remittances for economic growth. For instance, senders of remittances can be encouraged to invest such resources in development projects or companies at home, and the interest earned would accrue to relatives. These results notwithstanding, remittances remain a major source of financial flows to SSA. It is just a matter of having the right ingredients or policies on the ground to properly harness them for sustainable economic growth.

In interpreting the results of this study, it is worthwhile to stress the caveats or limitations in using cross-country studies to assess the economic growth of SSA. First, there is no standard or generally accepted model for studies of this nature. Therefore, in applying the neo-classical production function approach which is generally common in studies of this nature, a researcher is at liberty to focus on the variables of interest in that particular study. Consequently, variables that are statistically significant in one study may not be included in other studies and even when they are included, they may not be statistically significant. Secondly, aggregation of data in cross-sectional studies may mask some effects that could become more apparent in time series studies of individual countries. Hence, future studies on remittances may continue to examine individual countries and use the current study as a springboard for comparison of results. Furthermore, the impact of omitted variables cannot be brushed aside given the reported adjusted R2 values. Lately, variables such as culture, governance, and ethnic diversity have been recognized as major determinants of economic growth, but they are largely omitted in empirical analysis due to the difficulty in operationalizing them. The inclusion of these variables may alter the dynamics of our empirical estimations. Future studies will, therefore, contribute substantially to the literature if they can incorporate these variables in their empirical estimations.

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Appendix A: Sample Countries, Gross Domestic Product and Remittances (current $), 2013

Country	*GDP*	*Remittance*
Angola	124912063308.20	36637411.34
Benin	9156748441.42	248729820.8
Botswana	14915780533.09	36004262.29
Burkina Faso	11934606509.59	308381848.5
Burundi	2714505634.53	48639473.9
Cameroon	29567504655.49	244059167
Cape Verde	1850951315.46	175965459.1
Central African Republic	1518565219.01	
Chad	12949854262.81	
Comoros	618663921.86	115937833.5
Congo (Brazzaville)	14085852120.48	
Congo (Democratic Republic)	30014813755.77	33111316.85
Cote d'lvoire	31273049200.24	384669276.4
Djibouti	1455000000.00	35645759.36
Equatorial Guinea	21942597765.36	
Eritrea		
Ethiopia	47648211133.22	624371165.5
Gabon	17590716232.49	
The Gambia	903779326.21	180692707.1
Ghana	47805069494.91	1863990000
Guinea	6231725484.56	93010000
Guinea-Bissau	1026664188.53	63787684.42
Kenya	55097343447.56	1304277242
Lesotho	2532392022.47	462918822.8
Liberia	1946500000.00	383412500
Madagascar	10601690871.76	427480935.4
Malawi	5518901971.40	34132186.12
Mali	12813248724.80	894509061
Mauritania	5724227536.49	
Mauritius	12129642296.44	552880.1027
Mozambique	16018848990.67	152410998.7
Namibia	12713366873.47	11478699.06
Niger	7667951987.69	145870768.6
Nigeria	514966287206.51	20797132347
Rwanda	7622526429.09	123098879.3
Sao Tome and Principe	302925489.68	26566722.92
Senegal	14810978041.47	1777391979
Seychelles	1411061260.71	12874328.25
Sierra Leone	4920343194.99	69660689.73

Appendix A Contd.

Country	*GDP*	*Remittance*
Somalia	5352000000.00	
South Africa	366623856821.78	970655337.2
Sudan	72065940085.77	619508803.4
Swaziland	4575596300.79	30002132.22
Tanzania	44333456244.74	381930784.2
Togo	4080929201.28	397359048.9
Uganda	24879053946.91	940664379.3
Zambia	28045460442.19	53980262.06
Zimbabwe	15223528900.00	1890271473

Sources: World Bank national accounts data, and OECD National Accounts data files

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