Remitter/Receiver Relations in Africa

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Abstract:

The flow of remittances can affect poverty rates, development, and investments in the receiving country and households. Using World Bank survey data from three countries, Ethiopia, Uganda, and Kenya, this research addresses the senders' and recipients' characteristics may affect remittance amounts. The recipients' household income and living in a rural area tend to increase the amount of the remittance. Senders living in North America tend to send larger amounts than those living in Africa or Asia. Ethiopia and Uganda recipients tend to receive a larger amount than those living in Kenya. The effects of characteristics on remittance amounts are very similar between the countries. Only, Kenya appears to differ in three of the eighteen characteristics.

Key words: remittances, *Uganda, Ethiopia, Kenya*.

JEL codes: O01

REMITER / RECEIVER RELATIONS IN AFRICA

Introduction

There is growing evidence of the benefits of human capital investment and mobility on development in African economies, but there is also an ongoing debate about the effect of "brain drain." Most studies focus on how remittances affect poverty rates and development of African economies (Chami, Fullenkamp and Jahjah 2005; Gupta, Pattiloo and Wagh 2009; Anyanwu and Erhijakpor 2010). A few studies, however, explore how households' or remittance receivers' investment or allocation of remittances are influenced by the brain drain effect (households and individuals increasing educational investment because of better employment opportunities) (Adams and Cuecuecha 2010; De and Ratha 2012; Guzman, Morrison, and Sjöblom et al. 2008). With the growth of remittances in African economies, there is a need to understand how different economies and remittance recipients are affected by remittances. A critical aspect is that the remittance amount and use depends on decisions of both the sender and recipient; remittance amounts may be tied to specific uses (De and Ratha 2012). The economics of labor migration has also indicated that decisions to remit are linked to decisions of emigration. Lucas and Stark (1985) indicate that reasons for the amount remitted range from pure altruism to self-interest of emigrant. Household and/or individual characteristics, such as household income, may influence the sender. Remittance amount may be negatively related to recipient households' non-remittance income (Carling 2008). Understanding the dynamics of remittances at both the micro and macro level is important in helping to design policies to ensure the efficient use and inflow of these resources.

Uganda, Kenya, and Ethiopia are three countries that rely on cash inflow of remittances at both the macro and micro levels. These three countries were among the top 10 remittance recipient countries in Sub Sahara Africa (SSA) in 2010 (World Bank 2011a). Using data from

these three countries -- the objective is to examine how the senders' and recipients' characteristics may affect remittance amounts.

Background and Overview of Remittance Inflows

In 2010, it was estimated that the total flow of remittances to the developing world was more than US$325 billion outpacing foreign direct investment and aid (Yang 2011). Remittances to Africa increased by 141 percent between 2000 and 2007 from US$11.2 billion to 27 billion (Anyawu and Erhijakpor 2010). In 2010, Kenya, Uganda, and Ethiopia were ranked among the top 10 SSA remittance recipients at US$1.8, $0.8, and $0.4 billion (World Bank 2011a). Although displaying year-to-year variability, total remittance inflows have increased in Uganda, Kenya, and Ethiopia between 1999 and 2011 (Figure 1).

Of the three countries, Kenya is the largest remittance recipient. In 2011, Kenya's remittances were estimated at US$2.4 billion making its remittances six times larger than Ethiopia's and three times larger than Uganda's remittances (World Bank 2011a). Kenya's remittances are 25% of their total exports of goods and services making up approximately 7% of Kenya's GDP (World Bank 2013a). Remittances to Kenya have grown and by 2010 had over taken tourism as a foreign currency generator. It is estimated that three million Kenyans live as African diaspora[1]. The Kenyan government is proposing initiatives to curb the increasing costs associated with remittances, improve consular services to address diaspora issues, and tap into the diaspora to reverse brain drain (Republic of Kenya 2011). Reversing brain drain is important, because if historical skilled emigration trends continue there may be a need to attract skilled and experienced Kenyans back to develop industries (World Bank 2013a). Trends in emigration of skilled labor from the three countries are shown in Figure 2.

[1] The African Union defines the African diaspora as people of African origin living outside the continent irrespective of their citizenship and nationality and who are willing to contribute to the development of the continent and the building of the African Union.

Despite having the largest population at 84.7 million in 2011, which was more than double the population of Uganda (34.5 million) and Kenya (41.6 million), Ethiopia has the smallest levels of remittances inflows (Figure 1). Remittances in 2011 were estimated at $0.4 billion, which was only one percent of GDP and seven percent of total exports of goods and services. Asia is the top destination of Ethiopia emigrants followed by North America and Europe (United Nations 2009). It is not clear why Asia is the top destination. It may be a function of proximity to Ethiopia and/or a lack of a historical colonial links.

Remittances are the second largest source of financial inflow for Uganda (after exports) surpassing the combined total of foreign aid and foreign direct investment in 2007 (Bank of Uganda 2007). In 2011, Uganda's remittance inflow was US$937 million or approximately six percent of GDP. These remittance inflows were more than double Uganda's leading's leading export, coffee, and were 24% of total formal exports of goods and services (World Bank 2013a; Uganda Bureau of Statistics 2012).

It should be noted that published remittance amounts underestimate actual remittances, because some remittances are sent though unofficial channels that go unreported. In terms of the channels in which recipients obtain their remittance, it has been documented that larger transaction costs reduce the amount received in African countries. The costs of sending money (remitting) through 'formal channels' (Banks and remitting companies like MoneyGram) to Africa are five percent higher than sending to other regions in the world (World Bank 2013b). Reducing this cost to average global remittance rate would have saved Uganda remitters approximately US$50 million in 2011. These transaction costs affect the amount that is received and vary according to the remittance corridor. Assessing the avenues in which people obtain their remittances may provide insights into the source of transactions costs, that policy/remitters

may be able to change. Freund and Spatafora (2005) indicate that reducing transaction costs may reduce the amount of remittances that go through informal channels and improving remittance accounting.

Human Capital and Brain Drain Debate

Human capital mobility from developing countries includes the highly educated who emigrate that earn a high return to their human capital because of their skill-set and those workers who initially emigrate to obtain higher education, but obtain employment in the destination country. This movement has led to the debate on the gains and losses brain drain has on human capital movement in the post-colonial African countries. One of the main arguments against skilled emigration is if a person (emigrant) leaves their home country and their productivity was higher than the average marginal productivity of the country's labor force, the home country stands to lose productivity (Bhagwati and Hamada 1974). This argument against emigration fails to take into account the following issues:

> emigration may improve a country if the emigrant's remittances are higher than his/her contributions to social welfare had he/she stayed in the home country, and
>
> the emigrants' stature and position as a foreign employed worker may act as an incentive for people left in the home country to increase their investment in human capital.

These issues may be implicitly addressed by using efficient labor market theory. The arguments against brain drain make the assumption that a potential emigrant would be: 1) employed full-time in their home country; and 2) government expenditures on the emigrant's education would be repaid in terms of taxes on income.

In a global economy where developing countries in SSA have high levels of unemployment, human capital investment is a private venture and remittances have been increasing, the argument against skilled worker emigration may not hold. Grubel and Scott

(1966) argue that a country can maximize the income of the population if the emigrant improves his/her own income and his/her departure does not reduce the income of those left behind. When beneficial brain drain acts as incentive for remittance recipients to increase their human capital, this societal gain reduces the net social welfare loss because of the departure of the emigrant. But, there is a proposed measure of national sustainable development where a nation's wealth is measured by the stock of human capital rather than the flow of income (Arrow et al. 2012). Brain drain, therefore, may not only play a role in both issues but with an aging population in developing countries and increase in consumption of natural capital; the drain effect may provide direct and indirect incentives for human capital formation that is essential for sustainable development (World Bank 2011b). The three countries that are the subject of this study show increasing tends in migration of skilled labor (Figure 3).

Remittance Allocations

There is growing evidence that remittances have a major impact on development through increasing human and reproducible capital, while at the same time stimulating growth in income and employment (De and Ratha 2012; Anyanwu and Erhijakpor 2010). Remittances in Africa have been shown to drive development and reduce poverty. Anyanwu and Erhijakpor (2010) results suggest that a 10% increase in remittances may lead to a 2.9% reduction in head count poverty of a country. This finding suggests that increased remittances may help mitigate poverty; a developing country may benefit by increasing emigrants that remit back to their home countries. The later goal of increasing emigrants may play an important role in human capital formation given that emigration of highly skilled labor has been shown to increase human capital (Beine, Docquier, and Rapoport 2008). The emigration of highly skilled capital, however, may not directly imply an increase in remittances. There is a debate on whether highly skilled

emigrants remit more than the non-skilled emigrants (Fanni 2007; Bollard et al. 2011). Some studies conclude skilled emigrants tended to remit less (Niimi, Ozden, and Schiff 2010; Fanni 2007), but a recent micro data analysis that focused on skilled emigrants' remittances has shown the contrary; indicating that skilled emigrants tend to remit more because of higher incomes (Bollard et al. 2011;). Freund and Spatafora (2005) show doubling the number of migrants in OECD countries would lead to a 75 percent increase in remittances.

Apart from remittance amounts, expenditure allocation of these cash transfers is important. Studies have indicated that the sex of the recipient and personal relationship to remitter play an important role in expenditure allocation (De la Briere et al. 2002; Lopez-Erika et al. 2011; Guzman, Morrison, and Sjoblom 2008). Guzman, Morrison and Sjoblom (2008) find that in households where the remitter is the husband to the household-head (wife) have higher expenditure allocations towards education and vice versa. This implies that gender and relationship to remitter plays an important role in understanding the dynamics of budget allocations and amount received. At the household level it has also been indicated that there is a difference in proportion of expenditure allocation of inland and international remittances (Adam and Cuecuecha 2010). They indicate that on the margin a household receiving international remittance was more likely to spend more on education than they would have spent on investment goods without remittances.

Survey Data

To analyze the impact that the remitter's relationship to receiver has on the total amount sent, data from a remittance survey administered by the World Bank in 2010 are used. Data were collected by the World Bank Africa team with the goal of understanding the flow of remittance to Uganda, Kenya, and Ethiopia. A multistage stage random sampling was used to target

remittance recipients. This survey was carried out in two phases. The first phase was a national survey on adult population that identified and collected information on characteristics of remittance recipients. The second phase used this information to carry out the randomized survey of recipients. This second survey focused on generating a representative sample of adult recipients with the goal of understanding the channels of receipts of remittances, use, and investment (World Bank 2010). The total number of individual remittance receivers was 1,212 with 401 respondents in Uganda, 410 in Ethiopia, and 401 from Kenya. Of the total respondents, 54% were male, 67% lived in an urban area, and 65% were below 35 years of age.

Regional location of the remitter is diverse with 37 percent of total remitters residing in North America, 28% in Europe, 16% in Asia, and 19% in Africa (Table 1). The largest percent of remitters to Uganda reside in Africa, whereas, for Ethiopia the largest percentage of remitters are located in North America, composed of the United States of America and Canada. For Kenya, 67% of the remitters reside in either North America (36%) or Europe (31%).

Socio-demographic variables such as age, location of residence (rural or urban), and gender are used in the analysis. Data on the household income of the individual was also reported as monthly income in the specific national currency. This data is transformed to an annual household income in U.S. dollars by multiplying it by 12 then converting it into dollars using the 2010 average exchange rate for each country. Exchange rate used to convert U.S. dollars for 2010 are 2,522 Ugandan Shillings per U.S. dollar, 16.9 for Ethiopian Birr, and 88.81 for Kenyan Shillings (World Bank 2013c). Respondents were asked to indicate how many people benefited from the remittances; 18% of the respondents indicated that only one person benefitted. The majority of the remittances received, however, were shared among multiple individuals. Family ties to the remitter were obtained by using the responses categories of

husband/wife, mother, father, sister, brother, son, daughter, and other relative categories. Also, the respondents were asked how often the communicated with their relatives. Responses are summarized into the categories of once a week, once a month, couple of times a year, and rarely. Respondents were asked to provide the amount of remittance received using interval ranges. The interval average is multiplied by the number of times the respondent indicated they received remittances during a calendar year to obtain total annual remittances.

Model

To analyze the remitter recipient relationship an ordinary least squares estimation is used to assess the factors that affect the amount of remittance received by individuals in Kenya, Ethiopia, and Uganda. The equation used to explain annual remittance amounts, Y_{ij}, is

$$Y_{ij} = \alpha + \beta X_{ij} + \gamma R_{ij} + \mu_{ij} \quad (1)$$

where X_{ij} is a vector of characteristics of the household receiver i in country j, R_{ij} a vector of characteristics of the remitter, μ_{ij} is the error term, and α, β, and γ are matrices of coefficients to be estimated. Variables used in the estimation are presented in Table 2.

Results

Estimated coefficients from equation (1) are presented in Table 3. In the estimation, the natural logarithm of household income and number of beneficiaries along with remittance amount (dependent variable) are taken before estimation. The coefficients associated with seven of the variables not counting the intercept are significant at the 10% level or less. An increase in the receiving household non-remittance income increases the amount of remittances that those households received. Household heads between the ages of 50-64 years received higher remittances compared to those aged 18-24. Remittances are larger in Uganda and Ethiopia than in Kenya. Recipients that lived in an urban area receive smaller remittances than their

counterparts living in rural areas. Remitters working in Africa send lower remittance amounts compared to counterparts working in North America. Remitters who were either a brother or sister to the household head or a close relative (other relative) sent smaller remittances compared to a remitter who was either the father or mother to the household head. As the number of beneficiaries increase, the average amount of remittances sent increases.

Equation (1) is re-estimated individually for each country (Table 4). Household income is only significant in the Uganda equation, whereas, urban recipients are significant in Kenya and Ethiopia equations but not in the Uganda equation. The number of beneficiaries is significant in the Ethiopia and Uganda equations, but not the Kenya equation. The greater than 65 age category is significant in the Uganda equation, whereas the 50-64 age category is significant in the Ethiopia equation. Similarly, Africa is significant in the Uganda equation, but Asia is significant in the Ethiopia equation. Sister or brother is significant in both the Kenya and Ethiopia equation but not in the Uganda equation; similarly other relatives are significant in both Kenya and Ethiopia but not in the Uganda equation. Finally, communication once a month is significant in the Kenya equation. Taking the joint equation and individual equations together suggests there may be differences between the countries.

To further explore if coefficients associated with individual countries are statistically different, the following test procedure is employed. Data for the three countries are arranged in a block format with zeros on the off-diagonals. The model is re-estimated including individual coefficients for each country. F-tests are conducted on the groups of coefficients given in Table 4 to determine how the countries may differ. The null hypothesis of equality of the coefficients is rejected for household income (non-remittance income), remitters residing in Africa and Asia, and communicating at least once a month. In all the other tests, the null hypotheses of the

equality of the coefficients are not rejected. This indicates that for most of the effects of the explanatory variables are similar among the countries.

To examine how the coefficients for income and location may differ further tests are conducted on these coefficients. The null hypothesis that there is no difference between the effect of household incomes on remittances between Ethiopia and Uganda is not rejected. The null hypotheses for the equality of the income coefficients between Kenya and Ethiopia and Kenya and Uganda are rejected. Taken together, these three tests indicate that Kenya differs from Ethiopia and Uganda in terms of how income influences remittances. Similarly, further tests on whether the coefficients are different for remitters residing in Africa and Asia are performed. The null that there is no significant difference between remitters in Asia for Kenya and Uganda, and Uganda and Ethiopia is not rejected. The null hypothesis that the coefficients for the remitters in Asia are the same for Kenya and Ethiopia is rejected. For remitters residing in Africa, the null hypothesis that the coefficients are the same for Kenya and Ethiopia, and Ethiopia and Uganda is not rejected. The null hypothesis that the coefficients are the same for Kenya and Uganda for remitters residing in Africa, however, is rejected. Only the null hypothesis on the equality of Kenya and Ethiopia, once a month communication with the remitter coefficients is rejected. No null hypothesis involving the equality of coefficients for Ethiopia and Uganda are rejected.

Discussion and Conclusions

Results indicate that as the household income increases, the amount of remittances received also increases. The results also indicate that as the number of household dependent increase, the amount of remittances sent increase. Further, households in rural areas received higher remittances that those in urban areas. These results are similar to earlier studies that have

indicated that remitters tend to come from richer families, which have the higher ability to remit and remitter remit because of altruistic reasons.

Remitters that reside in Africa and Asia tend to send less money that those in North America. One possible explanation is that remitters residing in North America tend to earn higher salaries and a more favorable currency exchange rate. These two factors most likely account for the larger remittance amounts from North America remitters. Tougher screening policies to admit emigrants to this region compared to Africa or Asia may also mean higher skilled immigrants with the potential to earn a larger salary are immigrating to North America relative to Asia and Africa.

The general equality of individual country coefficients may have policy implications. All null hypothesis of the inequality of country coefficients that are rejected involve Kenya. This may be because of two reasons; 1) Kenya's average population has a higher non-remittance income than Uganda and Ethiopia and is on a better development path with larger remittance population; and 2) Kenya has a developing market for securities and assets that may be attracting emigrants to reinvest in their home country (United Nations 2012; Republic of Kenya 2011). Currently, Kenya is developing National Exchange Securities and the notion of diaspora bonds to attract remittances. Further research should examine these policies and determine which policies should be considered by countries such as Uganda and Ethiopia to increase their level of remittances and investments.

In addition to reduce the issue of transaction costs on remittances; M-Pesa[2] (Safaricom) partnered with Western Union in 2009 to facilitate remittances from United Kingdom to Kenya , which is among the top three remittance corridor of Kenya. Such policies by government may

[2] M_Pesa is mobile-phone based money transfer and micro financing service by Safaricom and Vodacom which are the largest mobile phone operators in Kenya. http://www.mit.edu/~tavneet/M-PESA.pdf

incentivize remitters in the diaspora and also increase the total amount received. African countries may try to improve relations with other countries that form the largest remittance corridors to potentially increase labor transfers to these countries. Further research needs to examine if these policies are the reason for the country differences with Kenya.

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References

Adams, R., Jr., and A. Cuecuecha. 2010. Remittances, Household Expenditure and Investment in Guatemala. *World Development* 38(11):1626–1641.

Anyanwu, J.C., and A. Erhijakpor. 2010. Do International Remittances Affect Poverty in Africa? *African Development Review* 22:828–839.

Arrow, K.J., P. Dasgupta, L.H. Goulder, K.J. Mumford, and K. Oleson. 2012. Sustainability and the Measurement of Wealth. *Environment and Development Economics* 17:317-353.

Bank of Uganda (Uganda Bureau of Statistics, GTZ). 2007. Inward remittances survey report. Bank of Uganda, Kampala.

Beine, M., F. Docquier, and H. Rapoport. 2008. Brain Drain and Human Capital Formation in Developing Countries: Winners and Losers. *The Economic Journal* 118:631–652.

Bhagwati, J.N., and K. Hamada. 1974. The Brain Drain, International Integration of Markets for Professionals and Unemployment: A Theoretical Analysis. *Journal of Development Economics* 1:19-24.

Bollard, A., D. McKenzie, M. Morten, and H. Rapoport. 2011. Remittances and the Brain Drain Revisited: The Microdata Show that More Educated Migrants Remit More. *The World Bank Economic Review* 25:132-156.

Carling, J. 2008. The Determinants of Migrant Remittances. *Oxford Review of Economic Policy* 24:581-598.

Chami, R., C. Fullenkamp, and S. Jahjah. 2005. Are Immigrant Remittances a Source of Capital for Development? *IMF Staff Papers* 52:55-81. International Monetory Fund, Washington D.C.

De, P.K., and D. Ratha. 2012. Impact of Remittances on Household Income, Asset and Human Capital: Evidence from Sri Lanka. *Migration and Development* 1:163-179.

De la Briere, B., E. Sadoulet,A. De Janvry, and S. Lambert. 2002. The Roles of Destination, Gender, and Household Composition in Explaining Remittances: An Analysis for the Dominican Sierra. *Journal of Development Economics* 68:309-328.

Lopez-Ekra, S., C. Aghazarm, H. Kötter, and B. Mollard. 2011. The Impact of Remittances on Gender Roles and Opportunities for Children in Recipient Families: Research from the International Organization for Migration. *Gender & Development* 19: 69-80.

Faini, R. 2007. Remittances and the Brain Drain: Do More Skilled Migrants Remit More? *The World Bank Economic Review* 21:177-191.

Freund, C., and Spatafora, N. 2005. Remittances: transaction costs, determinants, and informal flows. *World Bank Policy Research Working Paper No. 3704*.

Grubel, H.B., and A.D Scott. 1966. The International Flow of Human Capital. *American Economic Review* 56:268-74.

Gupta, S., C.A. Pattiloo, and S. Wagh. 2009. Effect of Remittances on Poverty and Financial Development in Sub-Saharan Africa. *World Development* 37:104–115.

Guzmán, J. C., A.R. Morrison, and M. Sjöblom. 2008. The Impact of Remittances and Gender on Household Expenditure Patterns: Evidence from Ghana. In A. Morrison, M. Schiff and M. Sjöblom (dds.), *The International Migration of Women* (pp. 125-152): World Bank & Palgrave, Macmillan.

Lucas, R. E., and O. Stark. 1985. Motivations to Remit: Evidence from Botswana. *The Journal of Political Economy* 93:901-918.

Niimi, Y., C. Ozden, and M. Schiff. 2010. Remittances and the Brain Drain: Skilled Migrants Do Remit Less. *Annals of Economics and Statistics/Annales d'Économie et de Statistique*, 98:123-141.

Republic of Kenya. 2011. Diaspora Policy of Kenya. Available at http://www.kenyahighcommission.net/khccontent/images/pdffiles2012/diaspora%20policy%20of%20kenya.pdf . Accessed May 29, 2013.

Uganda Bureau of Statistics. 2012. Statistical Abstract 2012. Available at http://www.ubos.org/onlinefiles/uploads/ubos/pdf%20documents/abstracts/2012%20Statistical%20Abstract.pdf . Accessed May 29, 2013.

United Nation (UN) 2012. Statistical Annex. Available at http://www.un.org/en/development/desa/policy/wesp/wesp_current/2012country_class.pdf . Accessed May 31, 2013

World Bank 2010. Uganda-Future of African Remittances: National Surveys 2010. Available at http://microdata.worldbank.org/index.php/catalog/595/overview Accessed May 31, 2013.

World Bank. 2011a. Migration and Remittance Factbook . 2011. Washington, The International Bank for Reconstruction and Development.

World Bank 2011b. The Changing Wealth of Nations: Measuring Sustainable Development in the New Millennium. Washington, DC: World Bank.

World Bank 2013a. World Bank Indicators. http://data.worldbank.org/indicator . Accessed May 29, 2013.

World Bank 2013b. Send Money Africa Database. Available at https://sendmoneyafrica.worldbank.org/sites/default/files/SendMoney_Africa_Remittances_Report_2013.pdf . Accessed May 29, 2013.

World Bank 2013c. World Bank Indicators. Official Exchange Rate (LCU per US $, Period Average). Available at http://data.worldbank.org/indicator/PA.NUS.FCRF. Accessed May 29, 2013.

Yang, D. 2011. Migrant Remittances. *Journal of Economic Perspectives* 25:129–152.

Table 1. Regions in which the Remittance Sender Lives (percent)

	North America	Europe	Asia	Africa	No Response
Kenya	36	31	13	19	1
Ethiopia	48	23	22	6	0
Uganda	25	29	14	31	1
Total	36	28	16	19	1

Table 2. Variables Used in the Estimations

Variable	Statistics			
	Mean	St. Dev	Min	Max
Annual Household Income ($)				
Household Income	3043	5700	71	135120
No. of individuals benefit from remittances				
Beneficiary	4	2	1	14
	Frequency		Percentage	
Age				
18 to 24	207		22.33	
25 to 34	379		40.88	
35 to 49	229		24.7	
50 to 64	94		10.14	
Over 65 years	18		1.94	
Nation				
Kenya	326		35.17	
Ethiopia	320		34.52	
Uganda	281		30.31	
Gender				
Female	417		44.98	
Male	510		55.02	
Location				
Rural	303		32.69	
Urban	624		67.31	
Region of residence of remitter				
North America	345		37.22	
Europe	248		26.75	
Asia	150		16.18	
Africa	184		19.85	
No. of times communicate with remitter				
Once a week	295		31.82	
Once a month	350		37.76	
Couple of times a year	277		29.88	
Rarely	5		0.54	
Relationship to remitter				
Father or Mother	61		6.64	
Brother or Sister	414		45.05	
Husband or Wife	79		8.6	
Son or Daughter	122		13.28	
Other type of relative	243		26.44	

Table 3. Estimation Results of Amount Remitted on Recipient Characteristics

	Coef.	Std. Err.	t	P>t	[95% Conf. Interval]	
Household Income	0.10	0.05	1.87	0.06	-0.01	0.20
25 to 34	0.07	0.11	0.61	0.54	-0.15	0.28
35 to 49	0.02	0.13	0.14	0.89	-0.24	0.27
50 to 64	0.29	0.20	1.47	0.14	-0.10	0.67
Over 65 years	0.21	0.28	0.74	0.46	-0.34	0.75
Ethiopia	0.47	0.11	4.26	0.00	0.25	0.68
Uganda	0.60	0.11	5.73	0.00	0.40	0.81
Male	0.01	0.08	0.17	0.87	-0.15	0.18
Urban	-0.21	0.09	-2.23	0.03	-0.39	-0.02
Europe	-0.10	0.11	-0.92	0.36	-0.30	0.11
Asia	-0.20	0.11	-1.75	0.08	-0.42	0.02
Africa	-0.26	0.13	-2.10	0.04	-0.51	-0.02
Once a month	-0.10	0.10	-0.98	0.33	-0.30	0.10
Once a Year	-0.60	0.11	-5.39	0.00	-0.82	-0.38
Rarely	-0.41	0.57	-0.72	0.47	-1.54	0.71
Brother or Sister	-0.37	0.17	-2.15	0.03	-0.70	-0.03
Husband or Wife	0.13	0.21	0.62	0.54	-0.28	0.54
Son or Daughter	-0.27	0.22	-1.19	0.23	-0.71	0.17
Other relative	-0.49	0.18	-2.76	0.01	-0.83	-0.14
No. of Beneficiaries	0.26	0.07	3.76	0.00	0.12	0.39
_cons	5.51	0.46	11.87	0.00	4.60	6.43

Table 4. Estimation Results of Remittance Amounts by Country of Recipient

	Kenya		Ethiopia		Uganda	
Variable	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.
Household Income	0.05	0.12	0.04	0.08	0.16	0.07***
25 to 34	0.08	0.24	0.20	0.15	0.04	0.17
35 to 49	0.01	0.27	0.19	0.19	0.07	0.20
50 to 64	0.16	0.41	0.55	0.27**	0.12	0.33
Over 65 years	0.24	0.58	-0.04	0.50	0.41	0.59
Male	-0.04	0.18	-0.03	0.12	0.07	0.13
Urban	-0.39	0.19**	-0.27	0.19	0.05	0.13
Europe	0.02	0.21	-0.19	0.14	-0.09	0.17
Asia	0.41	0.28	-0.62	0.15***	-0.15	0.21
Africa	0.10	0.27	-0.30	0.24	-0.44	0.17***
Once a month	0.26	0.22	-0.27	0.14*	-0.15	0.16
Once a Year	-0.53	0.24**	-0.55	0.17***	-0.57	0.15***
Rarely	1.73	1.55	-1.15	0.73	-0.31	0.74
Brother or Sister	-0.58	0.34*	-0.60	0.32*	-0.19	0.23
Husband or Wife	0.14	0.43	-0.34	0.38	0.32	0.29
Son or Daughter	-0.22	0.45	-0.60	0.39	-0.10	0.32
Other relative	-0.65	0.37*	-0.83	0.33***	-0.36	0.24
No. of Beneficiaries	0.15	0.17	0.27	0.09***	0.31	0.09***
_cons	5.94	1.03***	6.80	0.69	5.35	0.62***

******significance at 1%, ** significance at 5%,* 10% significance level***

Table 5. F Tests on the Equality of Individual Country Coefficients

	Kenya = Ethiopia = Uganda		Kenya = Ethiopia		Kenya = Uganda		Ethiopia = Uganda	
Coefficients	F-Test	P > t	F-Test	P > t	F-Test	P > t	F-Test	P > t
Household Income	2.27	0.07	3.32	0.07	3.12	0.08	0.08	0.77
25 to 34	0.26	0.77						
35 to 49	0.44	0.65						
50 to 64	1.87	0.15						
Over 65 years	0.56	0.57						
Male	0.18	0.84						
Urban	0.46	0.50						
Europe	0.65	0.52						
Asia	3.40	0.03	6.75	0.01	2.28	0.13	0.65	0.42
Africa	3.67	0.03	1.04	0.31	7.33	0.01	1.10	0.29
Once a month	2.54	0.08	4.41	0.04	3.14	0.80	0.02	0.88
Once a Year	0.11	0.94						.
Rarely	1.68	0.19						
Brother or Sister	0.50	0.61						
Husband or Wife	0.36	0.70						
Son or Daughter	0.58	0.56						
Other relative	0.10	0.90						
No. of Beneficiaries	0.17	0.84						

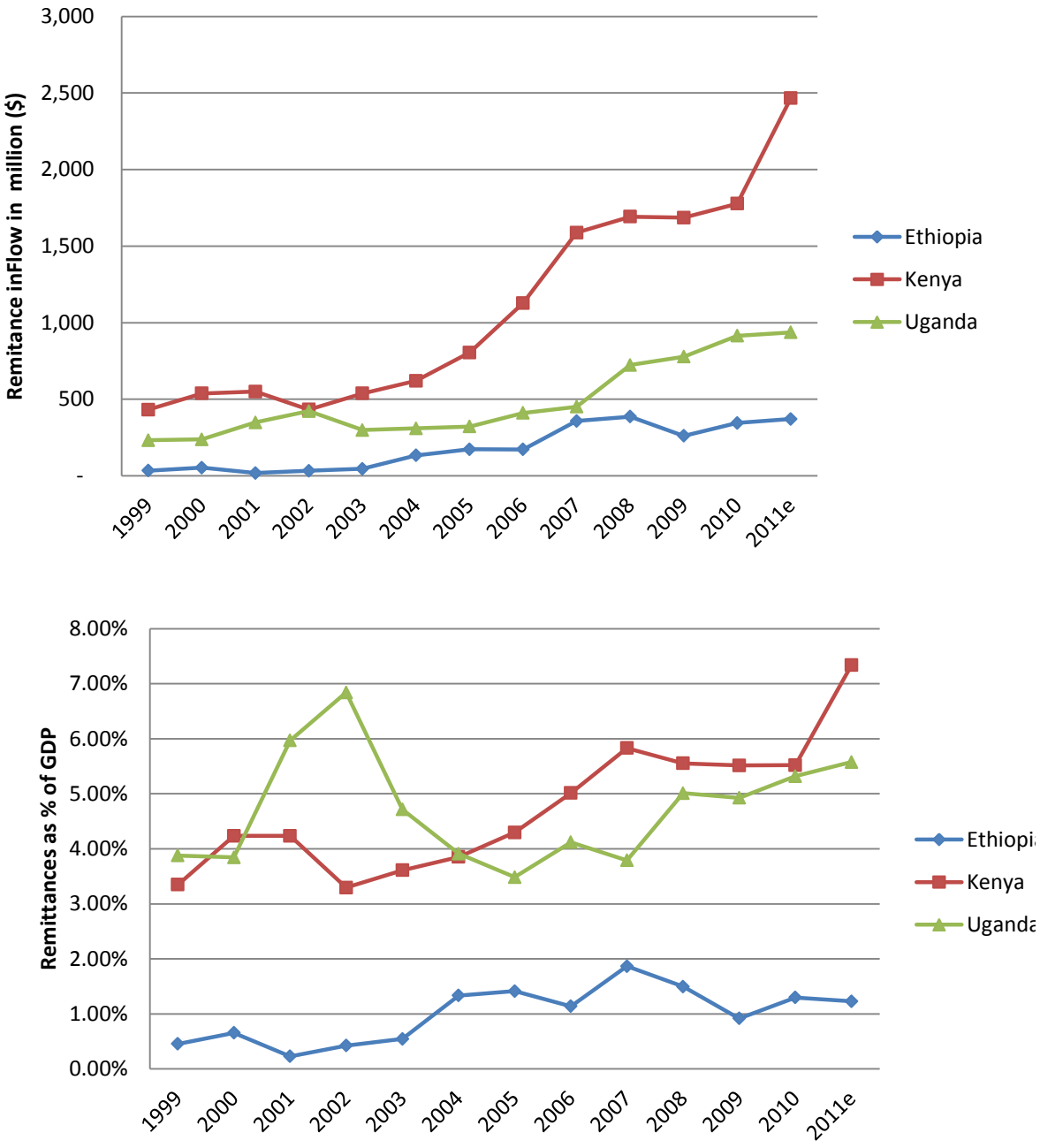

Figure 1. Remittance Inflow from 1999-2011

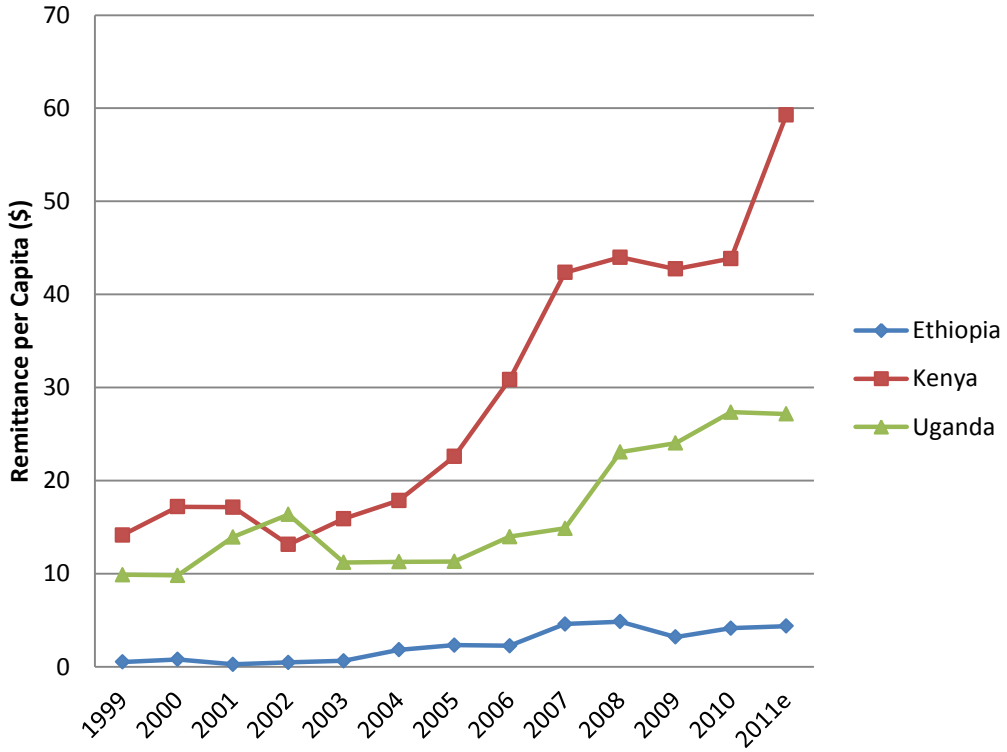

Figure 2. Per Capita Remittance

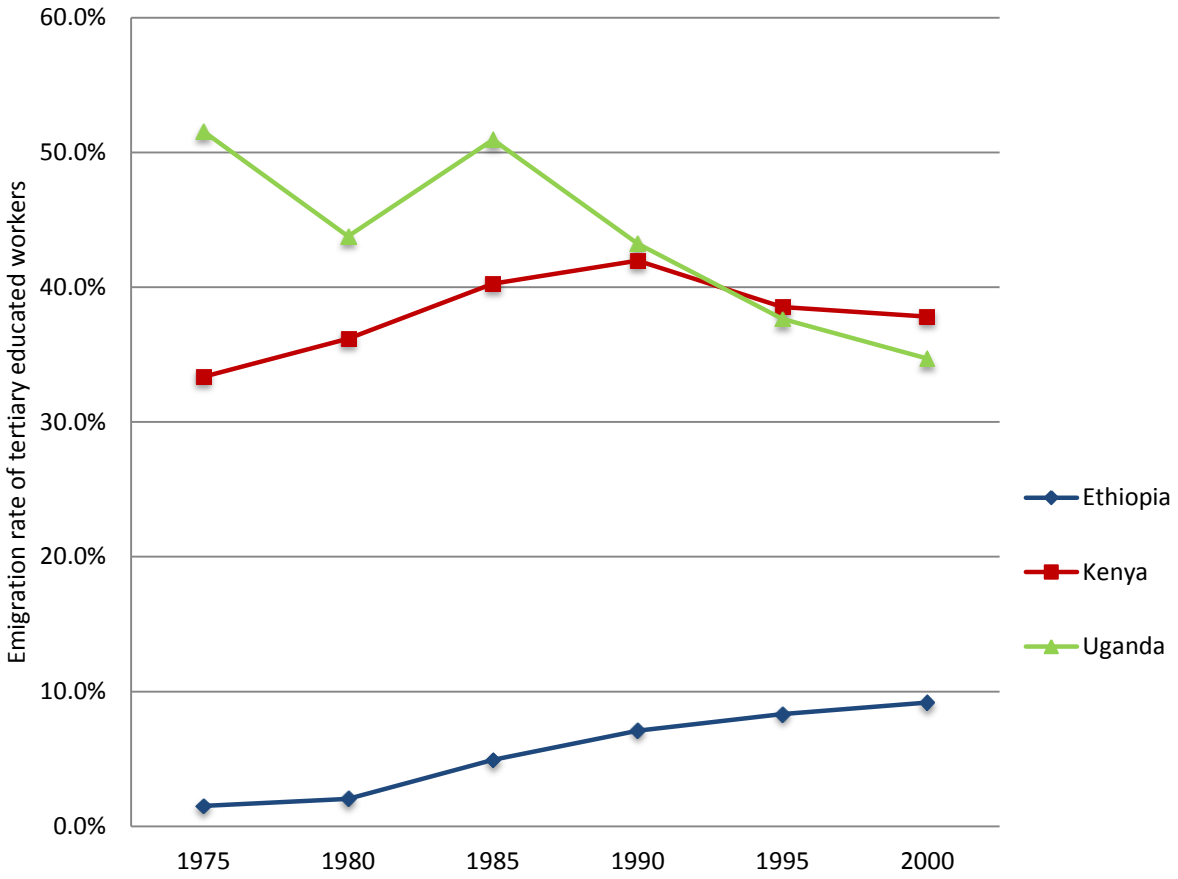

Figure 3. Rate of Emigration of Skilled Labor

The emigration rate is the ratio of the number of skilled emigrants age 25 or older. o the six major receiving countries (USA, UK, Germany, France, Canada and Australia) to the total number of skilled natives aged 25+ (residents + emigrants)