

Do Remittances Promote Household Savings? Evidence from Ethiopia

Ademe Zeyede[1]
African Development Bank Group, Ethiopia Country Office, P.O.Box: 25543 code 1000

Abstract
In many circumstances there are inadequate empirical analysis on the use and potential impact of international remittances in Ethiopia, particularly on household savings. The purpose of this paper is to analyze the impact of international remittances on the level of household savings relying on a micro-level household survey data coming from the second phase of Future of African Remittances: Ethiopian National Survey 2010. A total of 410 regular international remittances-recipient households are incorporated in the analysis. Both OLS and Tobit regression techniques are adopted for the empirical inquiry. The estimated result reveals that households with higher international remittances save more. However, rich households save a lesser portion of remittances they receive from their fellow migrants. The result also shows that international remittances are not only denote a significant share of households' consumption expenditure, but also are sources of funds needed to boost investment spending through enhancing the level of household savings in Ethiopia. This paper therefore recommends that more has to be done in providing investment opportunities including financial products for remittances-recipient households to direct the money they receive in to productive investment.
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1. Introduction

Sustainable economic development of a given country can only be realized if resources are efficiently and effectively mobilized and transformed into productive activities. The capacity of a country to mobilize domestic resources to implement development programmes and projects, nevertheless, is firmly determined by the amount of economic activities that it generates. Economic activities, indeed, are driven by public and private investments, which rely on taxation and public revenue generation, and household savings mobilized by the financial system. Since household savings portfolio determines the availability of funds for investment, it has relevant contribution to a country's long-term development. However, household savings in Ethiopia remains low by African standard. Household savings as a percentage of GDP in Ethiopia is very low compared to many African countries. Therefore, the key policy concern should be to raise the level of household savings in Ethiopia.

For the last three decades there has been a significant out migration from Ethiopia, predominantly to the United States of America, Europe, Middle East and Australia, and the inflow of international remittances have increased accordingly. For example, in the period of 2000 – 2012, Ethiopia experienced a significant enlargement in international remittances from 53 USD in 2000 to 625 USD in 2012 (World Bank, 2015). Besides, the World Bank ranked Ethiopia as the eighth remittances-recipient country in Sub-Saharan Africa in 2010. However, in many circumstances there are insufficient household level data and empirical investigation on international remittances and their use, and henceforth on their real and potential impact to domestic economic development in Ethiopia, particularly on household savings. As a result, nothing has been done to examine the impact of international remittances on household savings in Ethiopia. In this regard, most of the available empirical studies suggest that international remittances have positive contribution on a country's long-term development through enhancing household savings (for example, Brown, 1994; Banain and Roberts, 2006). In spite of that, other scholars have argued that international remittances are spent mostly on daily household consumption, and are unlikely to be used for savings that would contribute to the long-term development of the recipient countries (Oberai and Singh, 1980; Durand, Parrado and Massey, 1996). The aim of this paper, therefore, focuses on examining the impact of international remittances on the level of household savings in Ethiopia.

For its empirical analysis, the paper relies on a micro-level household survey data coming from the second phase of Future of African Remittances: Ethiopian National Survey 2010. A total of 410 regular international remittances-recipient households are incorporated in the analysis. Accordingly, 47.8 per cent of the households surveyed have been saved out of the remittances they have received from their fellow migrants. The paper estimates the level of household savings on international remittances and exhibits the presence of direct empirical relationship between them. Indeed, the result of the empirical exercises reveals that households with higher international remittances save more for future use. Besides, the estimated coefficient on international remittances is not only positive but also statistically significant. The result further demonstrates that rich households save a lesser portion of remittances they receive. Moreover, form the empirical investigation it can be conclude that

[1]Country Economist, African Development Bank Group, Ethiopia Country Office

international remittances are not only represent a considerable share of households' consumption expenditure, but also are sources of funds needed to bring sustainable development through enhancing the level of household savings in the country.

The rest of the paper is organized as follows. Section two briefly reviews the literature on the developmental impact of international remittances on remittances-recipient households. Section three discusses the sources of data and rigorously describes the variables of interest. In section four the empirical framework has been specified and estimation results are analyzed. In this section, the fundamental relations between international remittances and the level of household savings is drawn. Finally, concluding remarks and some policy recommendations are presented in section five.

2. Literature Review

Most of the existing studies on the development impact of international remittances have focused on issues such as poverty reduction, human capital formation (health and education), entrepreneurial activities and insurance against adverse shocks. Researches on the impact of international remittances on poverty using household data suggest that these financial transfers help reduce both the level and severity of poverty (Adam, 2004; Lopez-Cordova, 2006; Taylor, Mora and Adams, 2005). Moreover, in terms of poverty reduction, international remittances have substantial influences in rural areas of developing countries (Maimbo and Ratha, 2005). On the other hand, international remittances provide insurance against adverse shocks by diversifying the sources of household income. For instance, a recent study found that Ethiopian households that receive international remittances are less likely than other households to sell their productive assets to cope with food shortages (Mohapatra, Joseph and Ratha, 2012).

International remittances play a central role in encouraging investment on education. According to Cox and Ureta (2003), international remittances have positive and significant impact on school retention rates in El Salvador. Yang (2005) also found that positive exchange rate shocks significantly increase remittances spending on education in Philippines. Likewise, the potential positive effect of international remittances on financial constraints changes the opportunity cost of acquiring more schooling in Peru (Salas, 2014). Besides, Kifle (2007) conclude that, in Eritrea, remittances-receiving households with school-age children spend a significant portion of international remittances on child education.

Since there is a general perception that international remittances predominantly go to help cover basic household expenditures, an in-depth analysis of the impact of international remittances in promoting household savings has not been done so far. In this regard, Kaberuka and Namumbiru (2014) discover that international remittances have negative and statistically significant effect on gross domestic savings in Uganda. Zhu et al. (2009) also failed to find any evidence of the link between remittances and capital accumulation (household savings) in rural China. However, recent evidence shows that remittances-recipient households use the money they received from their fellow migrants to improve their future economic wellbeing through savings. For example, in Latin America and the Caribbean, remittances-recipient households put some portion of their remittances aside for savings (Orozco et al., 2005). Accordingly, the inflows of international remittances have significant effect on the economic and financial system of the recipient country through savings. This paper, therefore, contributes to the literature by examining the impact of international remittances on household savings in Ethiopia.

3. Data Issues

The data used in this study come from the second phase of Future of African Remittances: Ethiopian National Survey 2010. During the period July and September, a national survey on international remittances in Ethiopia was carried out by Bendixen and Amandi Research Personnel. The survey had two phases and was administered by the World Bank. The first phase consisted of a national survey of the adult population (persons aged 18 or older) of Ethiopia. In this phase of the survey 2002 Ethiopian adults were interviewed in July and August 2010.

Once the national survey was completed, Bendixen and Amandi Research Personnel analyzed the results to determine the areas of concentration of the remittances recipient population, after which the second phase of the survey was conducted. This phase encompassed a targeted survey of the remittances recipient population in Ethiopia. In this phase a total of 410 interviews with a regular international remittances recipient households were conducted mainly in two cities (Addis Ababa and SNNP) during August and September 2010. Apart from the usual demographic characteristics indicated in table 1 below, this phase of the questioners comprised a number of variables aimed at obtaining a greater detail about the amount, usage and the receiving processes of international remittances. However, the survey does not provide comprehensive data on in-kind remittances received, the households' asset holdings and annual expenditure out of household income (household income excluding international remittances).

Table 1: Household Head Characteristics

Variables		Number	Percent (%)
Gender	Male	212	51.71
	Female	198	48.29
	Total	410	100
Age	18 to 24	103	25.12
	25 to 34	178	43.41
	35 to 49	79	19.29
	50 to 64	44	10.73
	65 and over	6	1.44
	Total	410	100
Education level	None	13	3.17
	Primary	51	12.44
	Secondary	87	21.22
	Technical	34	8.29
	Undergraduate	193	47.07
	Gradate	32	7.80
	Total	410	100

Apart from collecting data on annual household income and family size, the survey archives how frequently the household received international remittances in the past 12 months, and how and on what the remittances were used and spend. In this regard, 33 per cent of the remittances-receiving households reported that they had received remittances from their fellow migrants four times per year. Besides, as it is depicted in table 2 below, the annual volume of international remittances received by the household vary substantially, from 20 to 5500 USD, with a mean value of 882 USD. However, these figures do not reflect the real amount of remittances that the sampled household received in the specified year. This is because the survey did not actually collect data on in-kind transfers. It is clear that for some remittances-recipient households, remittances in-kind constitute vibrant sources and means of breeding additional income. As a result, the empirical analysis based on this survey data might understate the actual significance of international remittances in the household.

Table 2. Summary Statistics

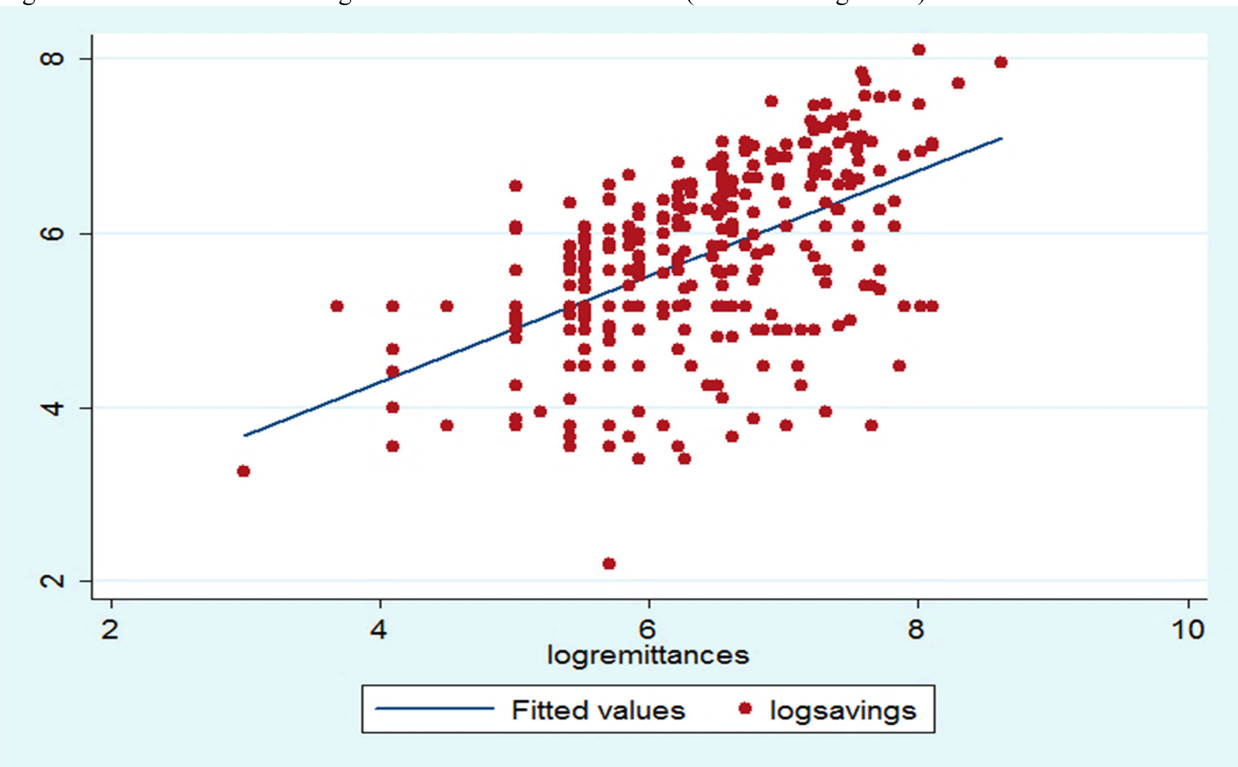
Variables	Mean	Std. Dev	Min	Max	Number of Observation
Household income	2163.1	2514.6	72	36000	345
Remittances	882.1	787.6	20	5500	370
Expenditure out of remittances	526.4	594.5	0	4000	364
Total household savings	497.3	491.3	9	3242	311
Household savings out of remittances	255	433.2	0	2750	364
Household size	3.1	2.1	1	12	398

The survey data do not support the idea that international remittances are a wholesome income transfer which mainly used for consumption purposes. Antagonistically, almost half of the sampled remittances-recipient households invest and save a substantial amount of remittances at home. While many remittances-recipient households (34 per cent) spend all amount of international remittances they received on daily expenses such as food, clothes, housing, utilities, health care, wedding and funerals, 29%, 9% and 1% of them spend part of remittances to pay for education fees, to invest on small businesses and to buy or built houses respectively. In this setting, the household expenditure out of remittances on education and training is certainly an investment on human capital formation. Recent evidence also indicates that international remittances play significant role in stimulating individuals to start-up new businesses, which could generate savings in the near future, through relaxing liquidity constraints.

In the survey, remittances-recipient households were also asked questions about their saving behaviors: whether they had saved any portion of international remittances they have received for the last 12 months and, if so, how much. Accordingly, 47.8 per cent of the households surveyed have been saved out of the remittances they have received from their fellow migrants for the last 12 months. The average level of household savings out of remittances have been reaching 255 USD per annum even though the volume has been vary significantly from 0 to 2750 USD across households. Note that the volume of total household savings has been derived by summing up household savings out of their labor income and remittances.

Figure 1 below shows the relationship between total household savings and international remittances received. While some individual observations are somewhat dispersed, the fitted line suggests the existence of strong and positive association between household savings and international remittances. This positive association is examined in a multivariate specification where a number of explanatory variables (household income, household size, household expenditure out of remittances, and others) are incorporated.

Figure 1. Total household savings and international remittances (both are in log forms)



4. Empirical Specification and Estimation Results

The empirical strategy adopted in this paper models the relationship between international remittances and household savings in Ethiopia. Accordingly, the econometric specification is stated as follows:

$$HHS_i = \alpha + \beta_1 HHI_i + \beta_2 Rem_i + \beta_3 Exp_i + X_i\theta + \epsilon_i \qquad (1)$$

Where HHS_i, HHI_i, Rem_i, Exp_i, and X_i represent household savings, household income, international remittances received, household expenditure out of remittances received, and a $1 \times p$ vector of household characteristics (gender, age and education level of the household head, and household size), respectively. The error term (ϵ_i) captures unobserved random disturbances while i denotes the unit of measurement (the household).

In order to investigate the impact of international remittances on the level of household savings in Ethiopia, OLS regression technique is adopted. However, there are some number of households in the survey with zero savings out of remittances, and to control for these censored data, equation (1) is, therefore, estimated using Tobit regression method. Fortunately, the reported estimates resulting from both methods (OLS and Tobit) are approximately the same. The following tables show some of the results from the regression analysis made in order to determine the aforementioned relationship.

Regression results reported in Table 3 show how international remittances, household income, expenditure out of remittances and demographic characteristics affect the level of total household savings. Note that, since the regression results are based on logarithmic equations, the estimated coefficients provide an approximation of the elasticity of total household savings. It seems that international remittances have substantial effects on the level of household savings. Indeed, the result implies that households with higher international remittances save more for future use. Besides, the estimated coefficient on international remittances is not only positive but also statistically significant. As can be seen in table 3, a 1 per cent increase in international remittances received leads to a 1.12 per cent increases in total household savings.

Consistent with the existing theories and previous findings, household income has positive and statistically significant effect on total household savings. The value of the coefficient on household income suggests that a 1 percentage point increase in household income is associated with a 0.75 percentage point increase in total household savings. On the other hand, to cope up with shocks related to food shortage, Ethiopian households that receive international remittances do not sell their productive asset rather rely on cashes and other means, presumably on remittances (Mohapatra, Joseph and Ratha, 2009). As a result, the estimated coefficient corresponding to expenditure out of international remittances shows that the level of spending out of remittances received have significant effect on the way how households allocate (either to save or spend) their resources. Specifically, a 1 per cent increase in the level of expenditure out of remittances reduce the amount of total household saving by 0.83 per cent.

The dynamic smoothing model implies that households with higher income (labor income and remittances) smooth consumption over generations by leaving inheritances to their children. In this regard, one would expect that a household comprising of large family members would save more, with income hold constant. Contrarily, although it is not statistically significant, the relationship between household size and the level of total household savings is negative in Ethiopia. On the other hand, the life cycle model seems to be applicable for the remittances-recipient households in Ethiopia. Even if it is not possible to draw strong conclusion, the estimated result indicated in Table 3 shows that a remittances-recipient household headed by older individual tends to save more.

Education is found to have negative impact on the level of total household savings of remittances-recipient households in Ethiopia, even though not important to have a significant effect. This suggests that precautionary household savings may be lower for a household headed by a highly educated individual because she/he may face less unemployment risks. In fact, a higher education level is associated with a higher income and the portion of income saved apparently depends up on the level of income earned. However, the reported result is based on how household savings is affected by the level of education when household income is held constant. Furthermore, the regression results show that a female headed remittances-recipient households tend to save more. This implies that understanding gender relations at the household level will play an important role in planning for the effective use and allocation of international remittances and household savings mobilization.

Table 3. Total household savings and international remittances

Variables	(1) OLS	(2) Tobit
Log of household income	0.748***	0.753***
	(0.0507)	(0.0504)
Log of remittances	1.116***	1.118***
	(0.0777)	(0.0768)
Log of expenditure out of remittances	-0.827***	-0.827***
	(0.0686)	(0.0678)
Log of household size	-0.00761	-0.00971
	(0.0514)	(0.0509)
Gender of the household head (Female)	0.105*	0.109*
	(0.0588)	(0.0583)
Age of the household head	0.0137	0.0116
	(0.0823)	(0.0813)
Education level of the household head	-0.140	-0.145
	(0.108)	(0.107)
Constant	-2.015***	-2.059***
	(0.290)	(0.293)
Number of observations	286	286
R-squared	0.77	

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

In order to examine the response of the level of household savings out of remittances due to a change in the variables specified above, remittances-recipient households, in the survey, were asked a particular question about whether they save part of remittances they received and if so how much. Adopting the same regression methodologies (OLS and Tobit), as a result, the level of household savings out of remittances is regressed against a number of variables, including household income, international remittances, expenditure out of remittances and other demographic elements. Important results of the regression analysis, from which some remarkable inferences can be drawn, are reported in Table 4 below.

Except household income, household size and education level of the household head, all other variables have similar impact on the level of household savings out of remittances with that of total household savings. The negative relationship between household income (excluding international remittances) and household savings out of international remittances indicate that rich households save a lesser proportion of remittances they receive. Since rich households can save from their income, they rather tend to spend a higher proportion of remittances on productive assets. Contrary to the above regression results, household size and education level of the household head have positive and statistically significant impact on the level of household savings out of remittances.

Table 4. Household savings out of remittances and international remittances

Variables	(1) OLS	(2) Tobit
Log of household income	-0.0152	-0.0152
	(0.0187)	(0.0182)
Log of remittances	1.857***	1.857***
	(0.0306)	(0.0298)
Log of expenditure out of remittances	-0.884***	-0.884***
	(0.0301)	(0.0293)
Log of household size	0.0448**	0.0448**
	(0.0200)	(0.0195)
Gender of the household head (Female)	0.00835	0.00835
	(0.0242)	(0.0235)
Age of the household head	0.00989	0.00989
	(0.0266)	(0.0259)
Education level of the household head	0.0880**	0.0880**
	(0.0387)	(0.0377)
Constant	-1.206***	-1.206***
	(0.148)	(0.144)
Number of observations	135	135
R-squared	0.98	

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

5. Conclusion

For more than a quarter of a century there has been a significant out migration from Ethiopia, and the inflow of international remittances have increased accordingly. A significant proportion of households in Ethiopia depend on international remittances for their livelihoods. This is particularly common for households living in urban areas. But what is the impact of international remittances on the level of household savings in the country? To demonstrate the link, the empirical analysis relies on a micro-level household survey data coming from the second phase of Future of African Remittances: Ethiopian National Survey 2010. A total of 410 regular international remittances-recipient households are incorporated in the analysis. The paper estimates the level of household savings on international remittances and explores the existence of direct empirical relationship between them. The empirical result reveals that households with higher international remittances save more. The result further demonstrates that rich households save a lesser portion of remittances they receive from their fellow migrants.

Moreover, form the results of the empirical exercise it can be conclude that international remittances are not only denote a significant share of households' consumption expenditure, but also are sources of funds needed to boost investment spending through enhancing the level of household savings in the country. As a result, this paper suggests that more has to be done in providing investment opportunities including financial products for remittances-recipient households to direct the money they receive in to productive investment. However it should bear in mind that this conclusion and policy suggestions are based on remittances-recipient households living in urban areas. In order to have full picture of the developmental impact of international remittances in Ethiopia, the paper therefore strongly suggests that further empirical analysis based on nationally-representative household data should be carried out.

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