

Remittances and savings from international migration: Theory and evidence using a matched sample

Una Okonkwo Osili

Department of Economics, Indiana University–Purdue University at IN, United States

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Abstract

The central question of this paper concerns the implications of remittance flows for migrants and their origin households in the country of origin. This paper represents the first attempt to present a disaggregated view of international remittance flows using a matched sample of international migrants and their origin families. I investigate two types of remittances: transfers to the home family and savings in the country of origin. The empirical evidence provides support for the altruistic model of transfer behavior. Wealthier origin families tend to receive lower transfers, other things being equal. However, remittances sent to finance origin country investments are positively associated with origin household wealth. The estimation strategy addresses two common problems that arise in investigating remittance behavior: omitted variable bias and the measurement of origin household resources.

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1. Introduction

Over the past decade, migrant remittances to developing countries have grown rapidly reaching \$127 billion in 2005 and surpassing official development assistance (World Bank, 2005).¹ Migrants' remittances currently rank as the second-largest source of external inflows to

E-mail address: uosili@iupui.edu.

¹ Most official estimates of migrant remittances are based on balance of payments statistics. Official estimates often provide an underestimate of remittance flows, as they generally exclude remittances that occur through informal channels (World Bank, 2005).

developing countries after foreign direct investment (FDI). Despite their economic magnitude, transfers between international migrants and their households of origin remain a relatively understudied aspect of international resource flows.

This paper examines the impact of remittance flows on households in the country of origin by providing a disaggregated view of migrants' remittances. Much of the early work on migrants' remittances suggests that transfers are sent primarily to help meet the consumption needs of the origin household or to provide economic support during periods of income shocks. However, recent evidence also reveals the significant economic potential of remittances that are invested in the origin community. In particular, migrants' remittances may finance investments in the country of origin in the form of land and housing acquisition, financial assets, and microenterprises (Adams, 1991; Dustmann and Kirchkamp, 2002; Mesnard, 2004; Woodruff and Zenteno, 2004). Because migrants' savings can contribute significantly to capital accumulation in the country of origin, both origin and host country governments have begun to show interest in this aspect of international remittances.

This paper develops a model that jointly examines the migrants' decisions to save and to transfer resources to the origin household. Distinguishing between migrants' savings in the country of origin and their family transfers is crucial because the two types of remittances may have different implications for economic development in the origin country. The model recognizes that migrants face tradeoffs in their savings and transfer decisions. I extend the seminal model (Galor and Stark, 1991) in order to study the migrants' savings allocation decisions. The key insight from the model is that migrants will generally diversify their asset portfolios by saving in both origin and host countries. The model provides testable predictions for how migrant and origin household characteristics impact transfers to origin families and savings in the origin and host countries.

Economic theory requires data on both sending and receiving households to understand the motivations for migrants' remittances to the country of origin. However, most existing studies rely on either data from the migrant or data solely obtained from the origin family, but do not include both. This paper uses a new matched sample of both international migrants and their origin households to investigate remittance flows. The U.S.–Nigeria Migration Study is the first dataset to provide a comprehensive picture of international migrants and their origin families. This unique dataset contains information on migrants' savings in the origin and host country, as well as migrants' transfers to family members in the country of origin.

The empirical results in this paper provide support for the theoretical model. In particular, I find that migrants' motives for sending transfers to the origin family differ significantly from their motives for saving in the origin community: Migrants' transfers to the origin family reflect altruistic motives. Poorer origin families tend to receive larger transfers, other things being equal. However, remittances sent to finance investments in the country of origin (origin savings) are positively associated with origin household resources. Finally, migrant and origin family characteristics also have different implications for origin savings compared to savings in the host country.

Two common problems arise in the empirical work investigating remittance behavior: omitted variable bias and the measurement of origin household resources. The results presented in this paper attempt to deal with these concerns. First, estimates rely on independent measures of the economic circumstances of both the migrant and the origin household, thus reducing concerns of omitted variable bias that emerge if only one side of the migrant–origin family transaction is observed. Second, origin household wealth is measured accurately to deal with the concern that assets may be owned by absentee family members or influenced by past transfers from the family migrant.

The remainder of this paper is organized as follows: Section 2 outlines the theoretical model. Section 3 presents the data sources. Section 4 discusses the results. Section 5 presents conclusions.

2. A model of migrants' savings and transfers

In this section, I present a conceptual framework for migrants' transfers to the origin family and savings decisions. Based on direct observations from fieldwork and data collection, I uncover that migrants send remittances to provide economic support to their origin households, but migrants also send remittances as a means to accumulate savings in the origin country, often in the form of investments, such as land, housing, microenterprises, and financial assets.

In the model below, migrants live for two periods while the origin family only lives for one period.² During the first period, migrants choose individual consumption, savings, and transfers to the origin family. Consistent with observations from field research and data collection, I introduce the probability of return migration in the second period. The probability of return migration to the origin country has attracted considerable attention in the existing literature (Galor and Stark, 1990; 1991; Dustmann, 1997). Migrants face some probability of return migration to the origin country, and wages in the origin country are lower than host-country wages and save in the first period in order to finance second-period consumption. More formally, in the model, an exogenous parameter, p , captures the probability that the migrant returns to the origin country in period two, where p lies between 0 and 1.³

$$(U(c_1, c_2, \psi(c^f)) = U_1(c_1^m) + B[pV_2(c_2^o) + (1-p)V_2(c_2^m)] + \alpha\psi(c^f) \quad (1)$$

The migrant's objective function is defined above as a strictly concave, time-separable utility function defined over first- and second-period consumption and origin-family utility in period one. The migrant's objective function is defined above as strictly concave, time-separable utility function defined over first- and second-period consumption and origin-family utility in period one, c_1 , the consumption of the migrant in period two, c_2 , and the utility of the origin or home family, $\psi(\cdot)$. The price of host-country and origin-country consumption in both periods is normalized to 1.⁴ B represents the discount rate on the migrant's second-period utility and is defined to be greater than zero. The migrant's second-period consumption is c_2^o if return migration takes place and c_2^m if the migrant remains in the host country:

The importance of the origin family in the migrant's utility function is represented above by the weight, α , that the origin family occupies in the migrant's utility function. This weight, α , may provide an important source of unobserved heterogeneity across migrants ($0 < \alpha < 1$). The origin family's utility, $\psi(\cdot)$ is defined as a function of origin-family consumption, c^f in period one. Origin-family consumption, c^f , depends on the origin-family income generated in the origin country, y^f , and remittances from the migrant, r , in period one. I assume that the origin family's utility function, $\psi(\cdot)$ is concave and twice continuously differentiable.

A key aspect of the model is that migrants can accumulate assets in the origin and in the host country, and the expected returns to migrants' savings differ across locations. The migrant can invest in a "safe" asset (for example, a savings account in the U.S.) or a "risky" asset in the origin country (such as housing, land, or a microenterprise). Host-country assets earn a constant return,

² The migrant transfers, r , to the origin family in the first period only. I assume that the origin family does not survive to the second period. The justification here is that the migrant's family members often consist of elderly parents.

³ The parameter, p , is meant to capture exogenous events, such as deportation, death, or illness of a family member in the origin country, that may induce the migrant to undertake return migration (Dustmann, 1997 models the probability of return as an endogenous parameter).

⁴ Prices are assumed to be the same across the host and origin country. However, this assumption does not change any of the substantive implications of the model considered here, as it would be straightforward to normalize origin country consumption by a constant k . See Stark et al. (1997) for a model in which prices differ across the host and origin country.

R , which is known. Origin-country assets are considered to be “risky” because migrants, while residing abroad, incur higher costs in monitoring these assets.⁵ Specifically, if the migrant remains in the host country (the U.S.), then the net returns to investing in the origin country asset, R_m , will be low due to higher monitoring costs for the origin assets. However, the net returns to origin assets, R_o , will be relatively high if the migrant returns in the second period to the country of origin due to the lower costs of monitoring origin country assets. I assume that R , R_m , and R_o are given exogenously and $0 < R_m < R < R_o$.

The migrant maximizes utility (1) subject to the budget constraints described below. In the migrant’s first-period budget constraint, c_1^m refers to the migrant’s consumption in period one, y_1^m represents the migrant’s income in period one, r is the migrant’s transfer to the origin family in period one, and s represents migrants’ savings⁶ and consists of migrants’ assets in the country of origin, s^o , and assets in the host country, s^m :

$$c_1^m = y_1^m - r - s \tag{2}$$

$$s = s^o + s^m \tag{3}$$

The migrant’s second-period origin-country income, y_2^o , represents income in the event of return migration, while y_2^m is the migrant’s income in the case that the migrant remains in the host country where $y_2^o < y_2^m$.

Thus, the migrant’s budget constraint in period two is given below:

$$\begin{aligned} c_2^o &= y_2^o + R s^m + R_o s^o && \text{with probability } p \\ c_2^m &= y_2^m + R s^m + R_m s^o && \text{with probability } (1-p) \end{aligned} \tag{4}$$

Substituting constraints (2)–(4), the migrant’s problem can be written as follows:

$$\max \{ U_1(y_1^m - r - s) + B[pV_2(y_2^o + R s^m + R_o s^o) + (1-p)V_2(y_2^m + R s^m + R_m s^o)] + \alpha\psi(y^f + r) \} \tag{5}$$

Assuming interior solutions for remittances and savings,⁷ the migrant’s first-order conditions are shown below:

with respect to r :

$$r: -U'_1(c_1) + \alpha\psi'(c^f) = 0 \tag{6}$$

with respect to s^m :

$$s^m: -U'_1(c_1) + BR\{[pV'_2(c_2^o) + (1-p)V'_2(c_2^m)]\} = 0 \tag{7}$$

with respect to s^o :

$$s^o: -U'_1(c_1) + B\{[R_m p V'_2(c_2^o) + (1-p)R_h V'_2(c_2^m)]\} = 0 \tag{8}$$

⁵ In addition, origin country assets may be risky due to weak investor protections and unstable macroeconomic conditions in the origin country. Migrant investment decisions may also depend on information costs, capital restrictions, borrowing constraints, or utility from investing in the country of origin.

⁶ I ignore the costs of moving savings across locations (i.e., between the origin country and the host country).

⁷ I assume that an interior solution exists as most migrants in my sample report sending transfers. This can also be justified because monetary transfers tend to flow from the migrant to the origin family and not vice versa.

From the first-order condition (6) above, at the margin, a decrease in the migrant's utility resulting from a transfer to the origin family must be offset by an increase in utility to the origin household from the migrant's transfer. The migrant's first-order conditions with respect to savings, s , also yield some insights. Eq. (8) states that the migrant's marginal utility in period one is equal to the expected discounted marginal utility of consumption in period two. At the margin, a decrease in utility in period one, resulting from an increase in the migrant's savings in period one, is offset by an increase in the migrant's utility in period 2 that results from higher migrant savings in period one.

Results based on a standard functional form – log preferences – allow some additional predictions for how migrant- and origin-family characteristics will affect the migrant's transfers to the family of origin.⁸ First, transfers to the origin family are predicted to increase with the income of the migrant, y_1^m , and decrease with the wealth of the origin family, y^f . Second, migrants will increase their origin savings as the current resources of the migrant and origin households rise. Thus, migrants from wealthier origin households are expected to have relatively high levels of origin savings but will have relatively low levels of transfers to their origin households.

Finally, the model predicts that the migrant's contingent second-period income, y_2^o , in the event of return to the origin country, will have different implications for transfers, r , and origin savings, s^o . In particular, migrants' origin savings fall as y_2^o , the migrant's contingent second-period income rises. Therefore, migrants with higher expected future incomes, in the event of return migration, are expected to send relatively large transfers to the origin families but will have relatively low levels of origin savings. Intuitively, this is because an increase in y_2^o reduces the migrant's "need" to save towards second-period consumption. In contrast, an increase in y_2^o will increase migrants' savings in the host country as the migrant attempts to smooth consumption across the two states.

The model provides predictions for how migrant- and origin-family characteristics will affect the migrant's decision to send transfers to the relatives and to save in the origin country. These results are summarized in the matrix of predicted correlations below:

Variable	Transfers to origin family, r	Savings in origin country, s^o	Savings in host country, s^m
Migrant's first-period income, y_1^m	Positive	Positive	Positive
Migrant's second-period income, y_2^o	Positive	Negative	Positive
Origin household's resources, y^f	Negative	Positive	Positive

From the above, the comparative-statics results depend on migrant and origin-family characteristics. Transfers to the origin family, r , and savings, s , can be modelled as a function of the migrant and origin household's income, y^m and y^f , respectively.

3. Empirical specification and data

The study of transfers and savings within the context of international migration requires high-quality data on migrants and their origin families. I use a matched sample of Nigerian immigrants in Chicago and their origin families in Nigeria to closely examine the transfer of resources among locationally distant family members.

⁸ Detailed results are available from the author in an unpublished appendix. The comparative statics results with respect to future income in the event of return migration are obtained using a specific functional form (log preferences).

3.1. Empirical specification

From the theoretical model presented in Section 3, the transfer to the origin family, r , sent by the migrant household (or received by the origin household) can be modelled as a function of the migrant's income, the origin household's income, and the migrant's contingent second-period income – y^m , y^f , and y_2^o , respectively. The reduced form expression for r also includes the migrant's weight on the origin household's utility function, which is unobserved, represented by a vector of variables Z . The error term is ε_{1i} .

$$r_i = B_0 + B_1 y_1^m + B_2 y^f + B_3 y_2^o + B_4 Z + \varepsilon_{1i} \quad (9)$$

The parameters of interests in the above Eq. (9) are as follows: B_1 , B_2 , and B_3 represent the coefficients on migrant's current income, origin-family income, and migrant's contingent future (origin-country) income, respectively. The theoretical model predicts that lower-income origin families should receive larger remittances from the migrant, other things being equal (or that the sign of B_2 is negative).⁹ In addition, the model predicts that remittances and migrants' current and future income (measured by the sign of B_1 and B_3) are positively related. This means that migrants with higher current incomes will send larger transfers, holding other variables constant. In addition, an increase in the migrant's contingent second-period income (in the event of return migration) will lead to larger transfers to the origin family.

The reduced form expressions for the migrants' savings in the origin country, total savings, s^o , and host-country savings, s^m , are shown below.

$$s^o = \delta_0 + \delta_{10} y_1^m + \delta_{20} y^f + \delta_{30} y_2^o + \delta_{40} Z + \varepsilon_{2i} \quad (10)$$

$$s^m = \delta_m + \delta_{1m} y_1^m + \delta_{2m} y^f + \delta_{3m} y_2^o + \delta_{4m} Z + \varepsilon_{3i} \quad (11)$$

The origin savings measure, s^o , is defined as the sum of all investment-related remittances sent by the migrant to finance own investments in origin assets in the survey year. The host-country savings variable, s^m , is measured as a residual (computed as annual migrant-household income minus annual expenses on food and housing, transfers, and origin savings). Total savings, s , is the sum of origin savings, s^o , and host-country savings, s^m .

From (10) and (11) above, it is possible to investigate the relationship between migrants' origin- and host-country savings and migrant and origin-family variables. The theoretical model predicts that origin savings will rise as both migrant and origin-family incomes increase. In addition, origin savings will decrease as the migrant's second-period income (in the event of return migration) increases. Intuitively, this result is obtained because an increase in the migrant's second-period income, in the event of return migration, reduces the "need" to save towards future consumption. In contrast, host-country savings will increase as migrant's second-period income (in the event of return migration) increases.

3.2. Data and econometric issues

A unique strength of this paper is the use of a matched sample of migrants and origin families to investigate transfers and savings. In the empirical analysis, it is possible to control directly for

⁹ Hoddinott (1994) report a positive coefficient on recipient's income. Other studies report a negative relationship between remittances and the income of the recipient (Kaufmann and Lindauer, 1986; Ravallion and Dearden, 1988).

the migrant and the origin-household characteristics, thereby reducing concerns about omitted variable bias.¹⁰ In addition, the survey provides a disaggregated view of migrants' remittances by measuring migrants' savings in the origin country, as distinct from transfers to the origin family.

The data collection occurred in two stages. The first stage involved conducting interviews among a random sample of migrant households in Chicago. To identify a random sample of migrant households, I used Chicago-area telephone listings, selecting distinctly Nigerian names.¹¹ In the second stage, interviews were conducted in Nigeria among origin households, using the contact information provided by the migrant households.¹²

The accurate measurement of the origin family's economic resources is of considerable importance. By using the matched sample, it is possible to deal with the concern that current origin-household income may be affected by past migrant transfers. For example, transfers from family migrants may lead to higher incomes among receiving households. Specifically, I construct measures of origin-family economic resources that are less likely to be affected by migrants' transfers. In addition, the matched sample makes it possible to identify assets owned by the origin family as distinct from assets belonging to family migrants. The origin family may be responsible for managing migrants' assets (land, farm, or housing assets) while migrants reside abroad. Origin-family asset variables may be contaminated if they include assets that are wholly or jointly owned by the migrant.

Table 1 presents summary statistics on transfers and savings for the migrant sample and for the matched sample. Table A1 provides a description of transfers and savings used in the empirical analysis. The matched sample consists of 61 migrant and origin-family pairs.¹³ Since migrants often send remittances to multiple recipients or family members, it is important to note that transfers sent by the migrant may not be equal to the transfer received by a given origin respondent. A given origin respondent may receive only a portion of the total transfer sent by the family migrant in Chicago during the past year.¹⁴ The demographic characteristics of the migrant household appear very similar in the two samples (Table 2).

4. Results and discussion

The results presented in this section draw on the strength of the migrant-origin family data in order to control directly for the economic position of the migrant and origin household and their impact on transfers and savings in the origin and host countries. In the empirical results below, I investigate both transfers to the origin family and origin savings.

¹⁰ For the same reason, recent studies on parent–child transfers have used matched panel data that contain data on both donor and recipient income (Altonji et al., 1997; Rosenzweig and Wolpin, 1993).

¹¹ The migrant sample was restricted to include only the Igbo of South Eastern Nigeria. This sub-sample of the Nigerian population was chosen to ensure relative ease in locating origin families in Nigeria. To draw a simple random sample from a telephone book, I identified 500 Nigerian family names from the Chicago phonebook. These family names were numbered sequentially. A computer generated 120 numbers randomly from 1 to 500. The data collection process involved reviewing the entire Chicago phone directory on CD-ROM and screening it for Igbo names.

¹² A copy of the survey instrument is available on request.

¹³ The yield from the initial sample can be explained by the difficulties associated with locating origin families given the information provided by the migrant and the availability of the origin respondent at the time of the interview. There are few reliable national surveys of Nigerian households with detailed asset and income data that could be used to assess the representativeness of the origin household sample. However, based on the comparisons with the U.S. census, the migrant sample appears comparable along observable dimensions.

¹⁴ It is important to note that the survey design does not allow us to control for the selectivity of migration decision. An alternative survey design that would involve selecting a random sample of origin family respondents and then tracking family migrants would be very costly and difficult to implement within the context of international migration.

Table 1
U.S.–Nigeria Migration Study 1997

	Migrant sample (<i>N</i> =112)		Matched sample (<i>N</i> =61)	
	U.S. migrants		U.S. migrants and origin households	
	Mean	S.D.	Mean	S.D.
<i>Migrant characteristics</i>				
Age at first migration to the U.S.	25.42	6.71	25.28	6.57
Head's age (at the time of survey)	38.71	7.22	38.49	6.64
Head is male (=1)	0.92		0.93	
Year first arrived in U.S.	1982.71	6.91	1983.31	6.60
Household size	3.43	2.03	3.28	2.10
Number of children in household	1.66	1.79	1.47	1.76
Head's occupation (skilled=1)	0.51		0.61	
Head's years of schooling	16.46	1.50	16.64	1.16
Migrant worked prior to migration	0.67		0.66	
Migrant owns inherited land	0.18		0.35	
Household income (in U.S. \$)	70928.52	932017.93	74547.46	84746.62
<i>Origin family characteristics</i>				
Migrant's report on origin household				
Migrant's father surviving	0.40		0.43	
Rural (=1)	0.69		0.73	
Number of siblings in Nigeria	4.56	2.99	4.17	2.20
Head's years of schooling	8.22	5.21	9.89	5.80
Migrant's father's landholdings (ha)	2.25	4.26	1.82	1.81
Number of buildings owned by migrant's father	2.58	3.30	2.31	2.67
Origin family's self-reports				
Origin head's age			62.67	14.67
Migrant is the child of the head (own child=1)			0.56	0.50
Origin household resides in rural area (=1)			0.38	0.49
Head is male (male=1)			0.66	0.48
Origin household size			5.74	2.68
Landholdings (ha)			0.60	0.75
Number of buildings owned			1.92	1.54
<i>(In U.S. \$)</i>				
Market value of origin family's assets			53025.4	95950.11
Market value of origin family's assets (pre-migration assets only)			21906.96	36580.98
Origin family's assets plus migrant's assets in origin country			79436.98	130547.3

Migrants' reports are based on data collected from U.S. migrants. Origin household self-reports are based on data collected from origin families in Nigeria.

4.1. Understanding transfers to the origin family

Table 3 presents the OLS estimation results for origin family transfers. Column 1 presents results based on transfers sent by the migrant to the origin family as the dependent variable and is measured in U.S. \$. Transfers sent (migrants' report) refer to total remittances sent by a migrant to all family members in the origin country, and these could be sent to multiple recipients, including the specific origin-family respondent.

Table 2
Remittances from international migration

U.S.–Nigeria Migration Study 1997				
Variable	U.S. migrants (migrant sample)		U.S. migrants and origin households (matched sample)	
	Mean	S.D.	Mean	S.D.
Migrant sent remittance in the past year	0.93		0.93	
Origin household received remittance in the past year			0.87	
Migrant sent transfer to origin family	0.85		0.86	
Migrant sent transfer towards savings in Origin	0.35		0.40	
Total amount sent in past year (in U.S. \$)	5807.43	10 653.92	6018.52	7961.14
Transfers sent to origin family	3018.60	3797.58	3489.72	4317.56
Transfers received by origin family			2220.25	3970.48
Savings-related transfers	2706.95	8737.84	2400.07	5352.08
Other transfers	277.69	1216.65	128.73	467.28

For the survey period, \$1 = 86 naira.

Transfers sent refer to total remittances sent by a migrant to ALL family members in the origin country and is based on the migrant's report.

Transfers received by the origin family refer to remittances received by a specific origin family member from a given U.S. migrant and is based on the origin family's report.

Savings-related transfers refer to migrant transfers sent towards investment and asset acquisition in the origin country.

Other transfers refer to other transfers including transfers to origin community institutions.

Column 2 presents results on transfers received by a given origin-family respondent. Transfers received (origin family's report) by the origin family refer to remittances received in the past year by the origin family member and are also measured in U.S. \$. As noted earlier, because migrants send transfers to a complex web of family members in the origin country, estimates based on transfers sent by the migrant and transfers received by a given origin family are comparable but may not be identical.

4.1.1. The effect of migrant characteristics

In the theoretical model presented earlier, migrants' current and future resources play an important role in determining transfers to the origin family. The results on migrant characteristics confirm the predictions of the theoretical model in that transfers rise with migrants' current resources. From Column 1, the coefficient on the migrant household's current income is positive and statistically significant. These results are consistent with existing work on remittances. Lucas and Stark (1985) report a positive relationship between the predicted wage of the migrant and the amount remitted. In their study of Pakistani emigration, Ilahi and Jafarey (1999) find that the amount remitted increases with the educational attainment and skill level of the emigrant.¹⁵

In the theoretical model, transfers to the origin family also rise with migrant's origin income in period two (in the event of return migration). From Column 1, skilled migrants send larger transfers to the origin families, holding other variables constant. A change in the head of household's occupational status (from the unskilled to the skilled) category increases the amount transferred by about \$2000. Skilled migrants are likely to earn higher second period incomes in

¹⁵ Unobserved characteristics of the migrant household that affect income may also affect transfer decisions. Instrumenting for migrant income using the total number of checks written by the household in the past month does not change previous results. I also use the migrant's wealth and annual expenditure as alternate measures of migrant's economic resources in the analysis and obtain similar results.

Table 3
Transfers to the origin family

Dependent variable	U.S. migrants	U.S. migrants and origin households		
	Transfer sent to home family (\$) (1)	Transfer sent to home family (\$) (2)	Transfer received (\$) by origin family (3)	Transfer received (\$) by origin family (4)
	Migrant reports only		Migrant and origin family reports	
<i>Migrant variables</i>				
Migrant's age (at the time of the survey)	-25.14 (64.03)	-59.78 (98.23)	14.68 (106.22)	-3.38 (162.22)
No. of children in household	-487.14 * (281.49)	-886.21 * (490.32)	-839.62 **	-1038.02 * (559.35)
Years of schooling	39.41 (250.01)	432.89 (560.91)	632.33 403.916	867.40 556.4596
Migrant's occupation (skilled=1)	1984.26 ** (883.31)	2173.23 (1187.24)	958.22 (1161.23)	1345.42 (1391.05)
Household income ($\times 10^3$)	0.02 * (0.01)	0.01 (0.01)	0.02 ** (0.01)	0.02 * (0.01)
<i>Origin family variables</i>				
(Migrant report)				
Origin family size	272.06 *** (75.33)	649.93 *** (247.79)	293.18 (231.22)	347.05 (342.29)
Rural	-699.78 (893.54)	-949.05 (1525.46)	-1457.97 (1391.86)	-1338.50 (1705.26)
Landholdings (ha)	-68.61 (46.00)	-68.44 (307.74)		
No. of buildings	-188.59 *** (59.34)	-137.41 (144.08)		
(Origin family reports)				
Landholdings (ha)				-1013.85 ** (455.22)
No. of buildings			-118.34 (330.49)	
Age of the head			39.20 (46.76)	84.47 (68.32)
Migrant is child of respondent=1			1310.16 (996.57)	934.78 (1481.23)
Constant	37.32 (4652.70)	-7988.78 (9718.84)	-13001.20 * (7541.10)	-18489.58 * (10473.47)
No. of observations	100	57	55	41
Adjusted R^2	0.27	0.43	0.48	0.57
Sample	Migrant	Matched	Matched	Matched

Robust standard errors are shown in parentheses.

Transfers sent refer to total remittances sent by a migrant to ALL family members in the origin country and is based on the migrant's report.

Transfers received by the origin family refer to remittances received by a specific origin family member from a given U.S. migrant and is based on the origin family's report.

* Represents 10% level of significance.

** Represents 5% level of significance.

*** Represents 1% level of significance.

the event of return migration. The migrant's educational attainment is also positively associated with transfers to the origin family, although not statistically significant. Interestingly, the number of children in the migrant household is negatively associated with the level of transfers to the origin family and statistically significant across all specifications. Results based on transfers received by the origin family (Column 2) are comparable.

4.1.2. The effect of origin-household characteristics

From the theoretical model, transfers to the origin family are predicted to decrease with origin family resources. Two asset measures capture the origin household's permanent economic resources (size of landholdings measured in ha and the number of buildings owned). Of the two asset measures used, land holdings may represent a relatively exogenous measure of the origin household's economic position.¹⁶ The regressions also include controls for the size of the origin household (measured by number of siblings in Nigeria) and the location of the origin household (urban versus rural).

Column 1 presents results based on transfers sent and the measures of origin-family economic status (obtained from the migrant's report). A negative coefficient on origin-household assets, controlling for other variables, can be interpreted as evidence in support of the altruism hypothesis. I find that there is support for the standard altruism prediction: notably, origin families with lower levels of asset holdings receive larger transfers than origin households with higher levels of asset holdings, holding all other variables constant. The coefficient on the number of buildings owned by the origin household is negative and statistically significant in the migrant sample.¹⁷

Results based on transfers received by the origin household are broadly comparable (Column 2). Here, the coefficients on the origin asset variables – the size of the origin household's land holdings (measured in ha) and the number of buildings owned by the origin family – are both negative. Two other origin-family variables also deserve close attention. Transfers are often sent to a complex web of family and non-family members. To capture this effect, the number of siblings in Nigeria (reported by the head of the migrant household) is included in the estimation. Transfers sent are positively and significantly associated with home-household size (Column 1). Migrant households appear to send larger transfers to their origin families when a greater number of potential recipients may receive these transfers.

The location of the origin household may influence the migrant's transfer decision since whether the household resides in an urban or rural area can affect the cost of sending transfers, as well as the economic opportunities available to the origin family. For example, it may be more costly to send remittances to rural areas. The coefficient on the location of the origin household (rural=1) is negative across all specifications, although it is not statistically significant.

4.1.2.1. Using self-reported data on the origin family. A significant advantage of the data used in this study is the ability to directly control for the migrant- and origin-household characteristics. Results in Table 3 also use self-reported measures of origin household assets, which may represent less noisy estimates of the origin household's economic position.

Taken together, the results in Table 3, which are based on origin household self-reports, appear consistent with the predictions of the theoretical model. Remittances received by the origin family decrease as the origin family's asset holdings increase. The size of the origin-family network in Nigeria (captured by the number of siblings in Nigeria) is positively associated with the amount transferred. When the U.S. migrant household is the origin household's child (own child=1), remittances received are larger, other things being equal. This provides support for an altruistic model of transfer behavior. Finally, as discussed above, rural status is negatively associated with the amount received by the origin family.

¹⁶ In many parts of Southeastern Nigeria, landholdings are more likely to be inherited than housing assets and thus can be considered a relatively exogenous measure of origin household wealth.

¹⁷ The findings on origin household assets could also be interpreted as support for an insurance model of transfer behavior (de la Briere et al., 2002).

4.1.2.2. Using detailed measures of origin household wealth. In the next stage of estimation, I use detailed information obtained from the origin household. The goal here is to deal with potential endogeneity bias and contamination in the measurement of origin-household resources discussed in the data section. It is important to accurately capture the origin household's economic position because the tests of the motivation for migrants' transfers emphasize the role of the origin household's economic resources.

Table 4 presents estimates on transfers sent by the migrant and transfers received by the origin family. The dependent variable used in Columns 1–3 is the transfer sent by the migrant, while Columns 4–6 present results on transfers received by the origin household. In Column 1, Table 4, I present estimates based on origin-household wealth, which is defined as the market value of all assets owned by the origin household in U.S. \$. The coefficient on origin-household wealth is negative although not statistically significant. It is important to note that current origin-household wealth (defined as the market value of origin family's assets) may be endogenous within a model of transfer behavior. In particular, past transfers from the migrant may affect the origin household's current asset holdings. An ideal measure of origin-household wealth would be unaffected by past transfers.

To address this concern, I use a measure of origin-household wealth that is less likely to be influenced by past transfers. I construct this relatively exogenous measure of origin-household wealth by taking into account the year of acquisition of all origin-household assets. This measure includes only the market value of origin-family assets acquired prior to the year in which the U.S. migrant left the country of origin. From Column 2, the coefficient on origin-household wealth becomes more negative as this relatively exogenous measure of origin-household wealth is introduced, (the coefficient on origin-household wealth decreases from -0.007 to -0.014). The coefficient on the relatively more exogenous measure of the origin household's wealth is more negative, although still not statistically significant. This suggests that the endogeneity of origin-household wealth may lead to a slight upward bias in the coefficient, in this case toward zero.

In Column 3, Table 4, I introduce an additional measure of origin-household wealth. The goal here is to show the bias that can obtain from the mismeasurement of origin-household wealth. Specifically, I construct a measure of origin-household wealth that is contaminated because it includes both the market value of the origin household's asset holdings and market value of the migrant's portfolio in the origin environment. It is possible to construct this contaminated measure because both the migrant's assets in the origin environment and the origin household's assets are observed.

The inclusion of the contaminated measure of the origin household's wealth yields some interesting results. In particular, the sign on this measure of origin-household wealth (the sum of migrant and origin assets) is no longer negative but actually positive and statistically significant. Thus, using a contaminated measure of origin-household wealth also leads to an upward bias in the effect of origin-household income. The sensitivity of results to the definition of origin-household wealth means that the careful measurement of origin-household wealth is an important issue. A positive sign on origin-household wealth could be erroneously interpreted as a rejection of altruistic motives for transfers to the origin family, and may result from using a contaminated measure of origin-household wealth.¹⁸

¹⁸ Lucas and Stark (1985) report a positive coefficient on origin household assets. However, their conclusion may be affected by the endogenous measure of origin household assets and the contaminated measures of wealth. As I have shown above, adding migrant assets to the origin household assets yields a positive sign on origin household wealth.

Table 4

Transfers to the origin family (using self-reported data on origin family assets)

Remittances sent	(1)	(2)	(3)	(4)	(5)	(6)
	Transfer sent by migrant (in U.S. \$)			Transfer received by origin family (in U.S. \$)		
	(Migrant report)			(Origin household report)		
<i>Migrant variables</i>						
Migrant's age (at the time of the survey)	40.72 (99.08)	33.19 (102.12)	-29.27 (95.92)	-19.40 (103.28)	-13.21 (104.76)	-12.11 (102.98)
No. of children in household	-900.47 * (452.28)	-876.69 * (453.09)	-959.19 * -(457.45)	-855.12 * (400.26)	-836.47 * (397.93)	-838.46 * (407.20)
Years of schooling	-671.27 (556.34)	-615.22 (558.93)	9.96 (548.46)	746.60 ** (419.84)	702.38 ** (403.93)	448.64 (400.74)
Migrant's occupation (skilled=1)	2491.65 ** (1384.63)	2404.23 ** (1397.73)	2454.54 ** (1373.64)	1313.35 (1289.29)	1241.88 (1293.38)	1249.24 (1354.97)
Household income ($\times 10^3$)	0.01 (0.01)	0.01 (0.01)	0.005 (0.01)	0.02 ** (0.01)	0.02 ** (0.01)	0.02 ** (0.01)
<i>Origin family variables (Origin family report)</i>						
Origin family size	791.72 *** (276.38)	784.87 *** (285.22)	775.42 *** (285.38)	344.02 (261.40)	338.75 (260.31)	325.35 *** (272.19)
Head's age	34.74 (38.73)	39.66 (38.71)	25.92 (34.93)	38.78 (41.33)	42.98 (43.06)	33.94 (40.34)
Rural	-1556.58 (1438.25)	-1589.47 (1466.80)	-304.67 (1369.46)	-1655.39 (1193.64)	-1686.05 (1207.74)	-1153.20 (1094.83)
Own child (=1)	1650.24 (1243.45)	1424.11 (1247.26)	1339.46 (1158.58)	2383.28 * (1184.16)	2192.78 ** (1227.21)	2302.60 (1192.70)
Origin family wealth 1 (Mkt value of origin family's assets)	-0.007 (0.004)			-0.006 * (0.003)		
Origin family wealth 2 (excludes assets acquired since migration)		-0.014 (0.010)			-0.012 ** (0.007)	
Origin family wealth 3 (includes migrants' assets)			0.012 *** (0.005)			0.004 *** (0.005)
Constant	-15464.39 (10326.30)	-14438.40 (10394.39)	-4524.78 (9845.24)	-16151.49 * (8299.39)	-15338.71 ** (7957.66)	-11179.61 (6898.91)
Number of observations	58	58	58	58	58	58
R ²	0.31	0.30	0.36	0.50	0.50	0.50

Robust standard errors are shown in parentheses.

Transfers sent refer to total remittances sent by a migrant to ALL family members in the origin country is based on the migrant's report.

Transfers received by the origin family refer to remittances received by a specific origin family member from a given U.S. migrant and is based on the origin family's report.

* Represents 5% level of significance.

** Represents 10% level of significance.

*** Represents 1% level of significance.

In Columns 4–6, [Table 4](#), I analyze remittances received by the origin family. The results are comparable to earlier results reported above. Notably, the effect of origin-household wealth becomes positive (rather than negative) and statistically significant when a contaminated measure of origin-household wealth, which includes migrants' assets in the origin country is used (Column 6).

[Table 4](#) also includes the following controls for the migrant's characteristics: age, number of children in the U.S., income, years of education, occupational status (skilled=1), and migrant-household income. The results on migrant characteristics are consistent with theoretical predictions. Origin-family variables used here (other than migrant and non-migrant related wealth valued in U.S. \$) include the origin household head's age, a dummy variable that captures the relationship of the migrant to the origin household (own child=1), and a location variable (rural=1).

4.2. Country of origin savings

In addition to providing key predictions about transfer decisions, the theoretical model also provides new insights for understanding migrants' savings decisions. The model predicts that savings in the country of origin will be positively related to both migrant's current income and origin-household income. The empirical analysis in [Table 5](#) emphasizes two measures of origin savings: (i) an indicator variable equal to 1 if the migrant has sent a transfer towards origin-country investments in the survey year, and zero otherwise, and (ii) the size of the investment transfer, a continuous variable, defined as the amount transferred by the migrant to finance savings in the country of origin in the survey year. [Table 6](#) presents results for the migrant's origin savings rate and the total savings rate.

4.2.1. The effect of migrant variables on country of origin savings

The theoretical model predicts a positive association between origin savings and migrant's income in period one. Empirical results in [Table 5](#) confirm this prediction for both the migrant and the matched sample. The probability of origin savings rises with the migrant's current income; the level of origin savings is also positively associated with the migrant's current income.

Theory predicts that migrants with higher second-period incomes (in the event of return migration) will have less of a "need" to accumulate origin savings (a precautionary motive). From the results, skilled migrants and more educated migrants are less likely to accumulate origin savings and have lower levels of origin savings.¹⁹ Although the migrant's income in the event of return migration is unobserved, skilled migrants will tend to earn higher incomes in the event of return migration, and this group of migrants is shown to have lower levels of origin savings. This contrasts with transfer results where skilled and highly educated migrants sent larger transfers to their origin families, other things being equal.

The specification presented in [Table 5](#) also controls for migrant variables that may affect the decision to accumulate origin savings. Migrant variables include pre-migration work experience in Nigeria, the migrant's year of migration to the U.S., and the ownership of inherited land in the country of origin. It is important to note that pre-migration work experience and ownership of inherited land in Nigeria both have a positive and statistically

¹⁹ Skilled and unskilled migrants may also differ in their probabilities of migration, but the model assumes an exogenous probability of return migration.

Table 5
Origin savings

	Origin savings		Savings transfer in U.S. \$	
	Migrant sample		Matched sample	
	Probit	Tobit	Probit	Tobit
	(1)	(2)	(3)	(4)
<i>Migrant variables</i>				
Migrant's age (at the time of the survey)	-0.045 * (0.02)	-526.73 (393.66)	-0.03 (0.04)	-276.66 (295.60)
No. of children in household	-0.04 (0.11)	-111.14 (1409.80)	-0.06 (0.15)	-625.46 (1088.22)
Years of Schooling	-0.06 (0.10)	-652.29 (1493.60)	-0.59 ** (0.22)	-1910.56 (1570.80)
Migrant's occupation (skilled=1)	-0.30 (0.34)	-552.91 (5185.15)	-0.52 (0.52)	802.35 (3721.53)
Household income ($\times 10^3$)	0.01 ** (0.002)	84.90 ** (29.14)	0.01 ** (0.004)	56.46 *** (20.20)
Migrant worked in Nigeria (=1) prior to migration	0.98 *** (0.42)	12976.66 *** (5394.17)	2.03 ** (0.63)	9840.98 *** (4478.44)
Owns inherited land in Nigeria (=1)	0.78 *** (0.35)	6466.04 *** (4691.65)	1.07 *** (0.51)	6053.48 * (3483.04)
<i>Origin family variables (Migrant report)</i>				
Origin family size	-0.10 * (0.06)	-770.23 (891.19)	-0.22 *** (0.10)	-798.75 (807.40)
Rural	0.97 *** (0.42)	12540.35 *** (5393.30)	1.65 ** (0.56)	9604.71 ** (4134.26)
Landholdings (ha)	-0.01 (0.03)	-81.17 (564.14)	0.26 *** (0.12)	598.32 (873.99)
No. of buildings	0.08 (0.05)	1096.89 * (628.76)	0.26 ** (0.07)	1249.76 *** (587.06)
Number of observations	100	100	57	57
Pseudo R^2 /Adjusted R^2	0.16	0.03	0.49	0.06

Robust standard errors are shown in parentheses.

Origin savings is an indicator variable that is equal to 1 if the migrant household sent an investment transfer during the survey period and 0 otherwise.

Savings-related transfers refer to migrant's transfers towards investments and asset acquisition in the origin country including transfers sent to construct or repair migrant residential or non-residential housing, to finance migrants' business to purchase migrant investment goods and financial assets, and to finance land acquisition in the origin country.

The migrant sample estimates are based on data collected from U.S. migrants while the matched sample.

* Represents 10% level of significance.

** Represents 1% level of significance.

*** Represents 5% level of significance.

significant effect on origin savings. Work experience in the origin country and ownership of inherited land can affect origin savings by reducing the costs associated with investing in the origin country. Pre-migration work experience may also reflect knowledge of investment opportunities in the country of origin.

4.2.2. The effect of origin family variables on origin savings

The theoretical model also predicts that the origin household's economic position is positively related to the migrant's origin savings. The empirical results provide some support for this prediction although these results are not fully robust. From Table 5, the coefficient on origin-family assets (measured by number of buildings) is positive and statistically significant from Columns 1–4. However, the results on landholdings are less comparable across the migrant and matched sample. In particular, landholdings are positively associated with origin savings only for the matched sample (and statistically significant in Column 3).

Table 6
Savings rate (includes both origin savings and host country savings)

Tobit	Migrant sample			Matched sample		
	Origin savings rate	Host savings rate	Total savings rate	Origin savings rate	Host savings rate	Total savings rate
	(1)	(2)	(3)	(4)	(5)	(6)
<i>Migrant variables</i>						
Migrant's age (at the time of the survey)	-0.004 (0.004)	-.003 (0.004)	-0.003 (0.003)	-0.001 (0.003)	-0.005 (0.005)	-0.01 (0.01)
No. of children in household	-0.005 (0.016)	-0.006 (0.013)	-0.008 (0.012)	-0.01 (0.01)	-0.005 (0.017)	0.02 (0.04)
Years of schooling	-0.010 (0.016)	-0.026 * (0.014)	-0.029 * (0.013)	-0.04 ** (0.02)	-0.039 (0.027)	-0.10 * (0.05)
Migrant's occupation (skilled=1)	-0.038 (0.059)	0.112 ** (0.048)	0.102 * (0.043)	-0.01 (0.04)	0.105 * (0.061)	0.20 * (0.11)
Household income ($\times 10^3$)	0.001 ** (0.0033)	0.001 *** (0.0003)	0.001 *** (0.0003)	0.0005 ** (0.0002)	0.0009 ** (0.0004)	0.001 ** (0.0007)
Head is recent migrant (year 1990 \geq 1)	0.038 (0.061)	-0.110 ** (0.054)	-0.076 * (0.049)	0.05 (0.04)	-0.202 (0.067) ***	-0.25 (0.17)
Head worked in Nigeria (=1)	0.145 ** (0.060)	0.117 ** (0.046)	0.152 *** (0.041)	0.12 ** (0.05)	0.088 (0.057)	0.21 (0.16)
Owns inherited land in Nigeria (=1)	0.081 (0.052)	0.060 (0.045)	0.071 * (0.040)	0.09 ** (0.04)	0.031 (0.054)	0.17 (0.12)
<i>Origin family variables (Migrant report)</i>						
Origin family size	-0.010 (0.010)	-0.005 (0.02)	-0.001 (0.006)	-0.013 (0.009)	0.0001 (0.012)	-0.04 (0.04)
Rural	0.154 ** (0.061)	0.07 (0.10)	0.041 (0.042)	0.12 *** (0.05)	-0.040 (0.061)	-0.04 (0.14)
Landholdings (ha)	0.0002 (0.006)	-0.002 (0.01)	0.001 (0.004)	0.01 (0.01)	-0.027 * (0.015)	-0.04 (0.04)
No. of buildings	0.015 ** (0.007)	0.012 (0.008)	0.005 (0.006)	0.02 *** (0.01)	-0.004 (0.010)	0.01 (0.02)
Number of observations	98	98	98	56	57	56
χ^2 statistic	18.50	37.49	48.88	33.88	34.05	30.59
Prob > χ^2	0.101	0.00	0.00	0.00	0.00	0.00

Robust standard errors are shown in parentheses.

The origin savings rate is the share of total household income that is invested in the origin country in the survey year.

The host country savings rate, s^m , defined as household income less household expenses on food, housing, and utilities and savings-related transfers to the origin country as a fraction of household income.

The total savings rate is defined as the sum of host country and origin country savings as a fraction of migrant household income.

* Represents 10% level of significance.

** Represents 5% level of significance.

*** Represents 1% level of significance.

Origin savings are also decreasing with the size of the migrants' origin family network (measured by the number of siblings in Nigeria). This result contrasts sharply with our findings on transfers to family members, where transfers were found to be increasing with the size of the origin-family network in Nigeria. I find that the rural status of the origin household is positively associated with origin savings. This result is robust across migrant and matched samples. The positive coefficient on the rural dummy variable may reflect lower costs and risks of investing in a rural area (relative to an urban area). In the earlier results on transfers to the origin family, rural status was shown to be negatively associated with transfers to the origin family.

4.3. *Origin country savings, host country savings, and total savings rates*

In [Table 6](#), I examine the migrant's origin, host, and total savings rates. The results here provide an opportunity to examine distinctions between origin- and host-country savings. The dependent variable used here captures the share of savings in the migrant household's income. The origin savings rate is the share of total household income that is invested in the origin country in the survey year. The total savings rate is defined to include both savings in the origin-country asset, and savings in the host-country (which is measured as a residual). The measure of total savings used here is a relatively noisy measure, when compared to the origin savings rate. All results are based on Tobit estimation.

The results for both the matched and migrant sample appear fairly consistent with the theoretical predictions. Columns 1 and 4 show the Tobit estimation results for the origin savings rate using the migrant and matched sample. The migrant's current income is positively associated with all three types of savings. Migrant households with a larger number of children in the U.S. also have lower savings rates for all three savings measures.

Again, I find that the unskilled migrants and less-educated migrants have higher origin savings rates. This result appears to confirm theoretical predictions that migrants with lower contingent future incomes are more likely to save in the origin country (and also have higher levels of origin savings). In contrast, skilled migrants have significantly higher host country and total saving rates. I also examine the effect of the migrant's year of migration on total savings. Recent migration (arrival in the U.S. after 1990) is positively associated with origin savings; although this effect is not statistically significant. In contrast, being a recent migrant has a negative and significant effect on host-country and total savings rates (Columns 2 and 3).²⁰

The results from [Table 6](#) also provide some evidence that origin household variables impact the savings behavior of migrants. The size of the origin family (measured by siblings in Nigeria) has a negative effect on all three savings measures. From Columns 1–3, migrants with rural origin families also have higher savings rates (although this is only significant for origin savings). In general, the results for the matched sample appear comparable (Columns 4–6). Origin household assets are positively related to the migrant's origin savings rate, as predicted by the model. However, the results on the origin household's asset measures for host country and total savings rates are somewhat mixed.²¹

²⁰ If return migration is a further choice variable, the initial migration decision could be viewed as part of optimal life-cycle plan to accumulate assets, and migrants who remain in the U.S. may belong to a low-savings group.

²¹ A potential explanation here is that the size of landholdings may be measured with error when compared to the number of buildings owned.

5. Conclusions

This paper investigates remittances from international migration, using a matched sample of migrants and their origin families. Because migrants' savings in the origin country have the potential to increase capital accumulation in labor-exporting countries, this aspect of migrant remittances deserves attention. Policy makers in developed and developing countries have shown a growing interest in the role that remittances from international migration can play as savings in the origin environment.

The evidence from the U.S.–Nigeria Migration Study suggests that transfers to the origin family are motivated by altruistic considerations, with poorer origin-family members in Nigeria receiving larger transfers. Unlike transfers to the origin family, however, savings in the country of origin are positively associated with origin-household resources, suggesting that investment motives may also play an important role. Interestingly, skilled migrants (who have higher future expected incomes in the event of return migration) are less likely to be investing in origin assets due to a lower precautionary motive for saving, but they tend to send larger transfers to their origin families. Origin savings are also more likely to flow to rural areas, perhaps reflecting the lower costs of investing in rural areas and where the number of non-migrants in the origin family is smaller, other things being equal.

Can remittances play a role in economic development in the country of origin? These findings suggest that remittances have the potential to contribute to economic development by reducing poverty and providing savings for capital accumulation in the country of origin. Overall, the eventual impact of remittances of development in the origin country will depend on the end use of remittance flows, as well as the size of the out-migrant population and the position of origin households within the origin-country income distribution.

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Appendix A

Table A1
Data definitions

Variable	Definition
<i>Total remittances sent by migrant in U.S. (\$)</i>	Migrant respondents were asked to estimate the total amount sent to Nigeria during the survey period including transfers to origin-family members, savings-related transfers, and all other transfers during the survey period.

(continued on next page)

Table A1 (continued)

Variable	Definition
<i>Transfers sent to the origin family in U.S. (\$) </i>	Migrant transfers to the origin family during the survey period include transfers sent towards the following categories in the past year: food expenses for the origin family, other living expenses (rent, clothing, housing repairs) for the origin family, school fees for the origin family, medical expenses and medical supplies for the origin family, to finance business interests of origin family, agricultural equipment, ceremonies, monetary gifts, and other expenses of the origin family.
<i>Origin Savings-related transfers in U.S. (\$) </i>	Savings-related transfers are sent towards investment and asset acquisition in the origin country. This measure includes transfers sent to construct or repair migrant residential or non-residential housing, to finance migrants' business interests, to purchase migrant investment goods and financial assets, and to finance the purchase land in the origin country.
<i>Total remittances received by the origin family (in \$) </i>	This is defined as the total amount that the origin-family respondent received from the migrant respondent in the survey year.
<i>Origin savings rate</i>	This is defined as the share of the migrant's household income that is invested in the origin country (Origin Savings) in the survey year.
<i>Host savings rate</i>	This is defined as the migrant's household income less household expenses on food, housing, and utilities and origin savings-related transfers to the origin country as a fraction of household income.
<i>Total savings rate</i>	This is defined as the sum of migrant's savings-related transfers to the origin country, s^o , and host country savings, s^m , as a fraction of household income.

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