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Migrants' Social Ties in the U.S. and Investment in Mexico*

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Abstract

Using a sample of 1,112 heads of household from the Mexican Migration Project (MMP), I develop a multinomial logit regression to test the hypothesis that migrants with social ties to other migrants in their place of settlement will have a greater risk of investing their remittances and savings on a productive activity or a home than of spending them on consumption. I find that migrants who live with family members or townspeople during their last migration trip have a higher risk of investing their savings on a productive activity or a home relative to spending them on consumption. Migrants who belong to a social club with other migrants have a higher risk of investing their remittances on production or housing than of using them for consumption.

Studying what conditions lead migrants to invest their remittances is of great practical importance because of the enormous sums of money migrants send to their countries of origin, estimated at $75 billion worldwide (Taylor et al. 1996). In 1999 migrants sent $6.8 billion in remittances to Mexico. This sum is greater than all Mexican agricultural exports, almost equals the country's income from tourism, is more than two-thirds the value of oil exports, and is more than 50% the size of the foreign direct investment in Mexico (Multilateral

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Investment Fund 2001). How migrants and their families spend this money has practical implications for the local and national economy.

This article explores what conditions make some migrants more likely than others to invest their earnings. Drawing on concepts about how social ties shape economic action, I develop propositions about how some forms of social ties among migrants can lead them to choose to invest their earnings rather than spend them on consumption. I test these propositions against an alternative hypothesis — that social ties among migrants lead them to spend their earnings on conspicuous consumption (Reichert 1982).

Portes (1995) theorizes that social relations influence economic action both by defining the goals that actors pursue and by providing them the means to achieve their goals. I apply this theory to migration, remittances and savings in several ways. First, I argue that social networks facilitate the transfer of goods and information between Mexico and the U.S., becoming social capital. Second, I propose that migrants invest their remittances and savings in order to establish a solid basis for claiming membership in their communities of origin. Third, I explore how different forms of social ties affect how migrants spend monthly remittances compared to how they spend savings brought back at the end of a migration trip.

Building on the work of Durand et al. (1996), Massey and Parrado (1994), and Massey and Basem (1992) on the Mexican Migration Project (MMP) data, I analyze a sample of 1,112 heads of household from 48 Mexican communities who migrated to the U.S. at least once between 1970 and 1994. I develop a multinomial logit model to test the risk that migrants in the sample spend monthly remittances or savings from a migration trip on production or housing instead of on consumption. The findings support my hypothesis that migrants with social ties to other migrants in the U.S. are more likely to invest remittances and savings in Mexico.

Migrant Networks, Community Membership, and Remittances

Numerous studies have shown that networks reduce the cost and risk of migration (Massey et al. 1987; Portes 1995). I extend this theory to propose that migrant networks can also increase the likelihood of investing remittances. For example, networks reduce monitoring and transaction costs for sending remittances (Roberts 1996). In addition, migrants who wish to make an investment in their hometown can use their networks first to transfer the money, and then to obtain information on how that investment is progressing.

Several studies have found social and family networks among migrants to be an important predictor of investing remittances in a business (Lopez & Seligson 1991; Massey et al. 1987). Hernández Leon (1997) found that migrants

who participate in networks of other migrants have greater information about investment opportunities centered precisely on the needs of migrants and their families. Portes and Guarnizo (1991) also found that ethnic networks facilitate immigrant entrepreneurship in both migrants' places of settlement and their place of origin. In a study of four Mexican communities, Massey and Basem (1992) found that social ties increased migrants' likelihood of investing remittances and savings.

Migrants who are embedded in social networks of other migrants in the U.S. maintain their hometowns as the sources of their identity, and their remittances are used to signify continuing membership in the community of origin (Connell & Conway 2000; Goldring 1998; Levitt 1997; Massey et al. 1987; Roberts 1996). One way migrants maintain ties to other migrants is by living with family members or other townspeople, which reinforces norms about sending remittances. In addition, migrants who wish to invest in their hometowns use these relations of kin and friendship to supplement their own funds in order to make those investments. In other cases, migrants form voluntary associations with other migrants, such as hometown associations or social clubs. These clubs formed by migrants reinforce their identity with their places of origin, provide them with an opportunity to exchange information about their communities, and allow them to channel money to their hometowns (Massey et al. 1987).

The central research question I address in this article is, How do migrant networks affect the way migrants spend remittances? On the one hand, some studies have found that many migrants use remittances for conspicuous consumption, such as televisions, cars, and parabolic television antennas (Cornelius 1991). In addition, migrants often spend savings on social activities during their visits home, including religious festivals during the Christmas season or on the community's patron saint day (Cornelius 1991; Durand et al. 1996; Massey et al. 1987). This type of consumption has led some researchers to talk of a "migrant syndrome" (Reichert 1982), in which return migrants raise consumption norms in their places of origin, leading other community members to emulate those consumption patterns by migrating themselves.

On the other hand, some migrants make short trips and live with family members or townspeople in order to save money to invest in a business or farm they already own (Durand et al. 1996; Massey & Basem 1992; Massey et al. 1993). Migrants who retain ties to their hometown may use their foreign earnings to buy or repair a home, signifying a solid base of membership in their community of origin even if they continue making migration trips (Goldring 1998; Grasmuck & Pessar 1991; Massey et al. 1987).

In this article, I test the proposition that under certain conditions, migrants use their remittances both to make a status claim and to make an investment. In other words, I argue that migrant networks promote investing in a home or

a productive activity because these investments constitute both a more visible and a more durable status claim than consumption and because they are a way to improve a migrant family's economic condition.

To explain what conditions limit or facilitate investing remittances, previous studies have looked at family conditions, trip characteristics, access to productive resources before a migration trip, and community and macroeconomic conditions. I hypothesize that, when controlling for these factors, among Mexican heads of household who migrate and send remittances or return with savings, those migrants with social ties to other migrants in the U.S. will be more likely to invest their remittances and savings in their places of origin.

Previously Tested Theories of Migration

New Economics of Migration

Productive Resources

According to the new economics of migration, households use migration as a strategy for diversifying their income resources in order to overcome constraints to production. For example, families lacking money for a productive activity may send a migrant abroad in order to obtain capital for investment. This proposition is supported by Massey and Basem (1992) and Durand et al. (1996), who found that migrants are more likely to invest remittances if they own a business, land, or a home before migrating.

Family Life Cycle

The stage in a migrant's family life cycle will affect the migrant's need for consumption and ability to invest. For example, married migrants and those with dependent children will have greater family subsistence needs than unmarried migrants or those with few children or older children. Migrants from families with greater needs will be more likely to dedicate remittances and savings to current consumption (Massey & Basem 1992).

Trip Characteristics

According to the new economics of migration, the characteristics of a particular migration trip affect the likelihood of investing remittances and savings. Migrants whose immediate families are in Mexico will have greater consumption needs, while those who migrate with their families will be more likely to invest remittances and savings sent back to Mexico. Extended trips will

allow migrants more time to accumulate money to send home. Some migrants choose to settle in the U.S. but build a house in their place of origin as part of an eventual plan to return (Goldring 1998; Grasmuck & Pessar 1991; Massey et al. 1987). The amount of money migrants send home also will affect their spending options.

Human Capital

Some aspects of migrants' human capital appear to predict how they spend remittances. Migrants with higher levels of education are less likely to send remittances to their places of origin, though when they do remit, the amounts are greater (Funkhouser 1995; Itzigsohn 1995; Menjivar et al. 1998). Durand et al. (1996) found that migrants with higher education are more likely to spend remittances and savings on both production and housing. Individuals with more work experience will have greater opportunities for investment. Other kinds of human capital, such as occupation and English proficiency, may affect certain aspects of a migrant's experience in the U.S., but they do not appear to be significant predictors of remittance behavior (Durand et al. 1996).

Sending Community Characteristics

When deciding how to spend remittances and savings, migrants will consider local economic conditions. Often, the same factors that lead to out-migration, such as a poorly educated work force and poor transportation and communications, discourage investment in those communities (Lindstrom 1996; Taylor et al. 1996). However, in Mexican communities undergoing economic growth, studies have found that U.S. earnings have been an important source of funding for enterprises (Lindstrom 1996; Massey et al. 1987).

Macroeconomic Conditions

Macroeconomic conditions also may affect local business prospects, and those external conditions will impact whether migrants invest their remittances and savings. On the one hand, an increase in the inflation rate translates into higher consumer prices, decreasing purchasing power and increasing consumption costs (Cornelius 1991; Durand et al. 1996). Increases in inflation hit small-scale producers, including most migrant-owned businesses, particularly hard (Taylor et al. 1996).

TABLE 1: Means of Independent Variables (Cont'd)

For Savings	Mean	Std. Dev.
Social networks		
Lived with relatives on last migration trip	.579	.494
Lived with townspeople on last migration trip	.713	.453
Belonged to a social club in U.S.	.019	.135
Household resources		
Owned farmland prior to last migration trip	.113	.317
Owned a business prior to last migration trip	.116	.320
Owned a home prior to last migration trip	.511	.500
Family life cycle		
Married	.850	.358
Number of minors	2.748	2.251
Trip characteristics		
Previous migration experience (months)	57.968	71.100
Total number of migration trips	4.938	5.560
Wages during last trip	4.869	3.938
Settled in U.S.	.025	.157
Duration of last trip	1.223	2.464
Spouse on last migration trip	.090	.287
Kids on last migration trip	.132	.338
Total savings ($1000s)	1.005	1.183
Human capital		
Work experience	24.128	13.101
Education	5.172	3.967
Sending community characteristics		
Percentage earning 2x minimum wage	27.409	10.785
Percentage of female labor force in manufacturing	16.243	10.840
Percentage of male labor force in agriculture	.468	.180
Macroeconomic context		
Mexican inflation rate	31.655	23.315

Data and Methods

MMP Data

I analyze data from the Mexican Migration Project (MMP). The MMP research team conducted surveys in 52 Mexican communities between 1982 and 1997.[1] Researchers chose communities varying in size, region, ethnic composition, economic activity, and rate of out-migration. They conducted a house-to-house

TABLE 1: Means of Independent Variables

For Remittances	Mean	Std. Dev.
Social networks		
Lived with relatives on last migration trip	.627	.484
Lived with townspeople on last migration trip	.662	.473
Belonged to a social club in U.S.	.066	.248
Household resources		
Owned farmland prior to last migration trip	.101	.301
Owned a business prior to last migration trip	.145	.352
Owned a home prior to last migration trip	.388	.487
Family life cycle		
Married	.806	.396
Number of minors	2.471	2.245
Trip characteristics		
Previous migration experience (months)	88.983	87.252
Total number of migration trips	4.697	4.897
Wages during last trip	5.861	4.296
Settled in U.S.	.331	.471
Duration of last trip	2.678	4.363
Spouse on last migration trip	.282	.450
Kids on last migration trip	.315	.465
Total remittances ($1000s)	5.472	8.812
Human capital		
Work experience	22.298	12.994
Education	5.774	4.219
Sending community characteristics		
Percentage earning 2x minimum wage	29.029	10.723
Percentage of female labor force in manufacturing	15.898	10.438
Percentage of male labor force in agriculture	.463	.170
Macroeconomic context		
Mexican inflation rate	31.949	22.676

census of each community in order to create a sampling frame. Next, they selected a random sample of households for interviews. The target sample size was 200 households per community, but limited funds and the selection of smaller communities in later stages of the research led to a smaller sampling size. The overall refusal rate was 6.5%. In order to try to locate return migrants while they were home, researchers conducted interviews around the Christmas holidays. In some towns, researchers learned that migrants tend to return at

another point in the year, so they conducted the survey at that time (Durand et al. 1996).

The majority of the sample consists of temporary or circular migrants who maintain their households in Mexico and were interviewed by the researchers in their Mexican community of origin. In addition, researchers used snowball sampling methods to locate and interview around 20 households of migrants settled in the U.S. from each Mexican community surveyed. In the dataset, these migrants living permanently in the U.S. are counted as members of their community of origin. The researchers developed a set of weights to reflect the relative contribution of U.S. households to the binational sample.[2] The data used in the regression are unweighted, while the reported means in Table 1 refer to weighted data.

The MMP researchers interviewed heads of household using ethnosurvey methods that combine in-depth interviewing and statistical sampling. Household heads who reported they had migrated to the U.S. at least once were asked detailed questions about their last trip. In total, researchers collected data on 4,082 heads of household from 52 communities. Researchers asked those heads of household who had sent monthly remittances or returned home with savings to select the top five end uses of remittances and savings from thirteen options listed on the survey. MMP researchers supplemented these ethnographic and survey data with community historical information and longitudinal macroeconomic data.

As I mentioned above, the MMP team selected towns with varying conditions in order to be representative of conditions and individuals in western Mexico from 1970 to 1994. The relative risk ratios I report allow me to make some general conclusions about factors that influence how migrants use remittances.

Model Selection and Dependent Variables

Previous studies, such as Durand et al. (1996), constructed a single model to predict who sends remittances or returns with savings, how much migrants remit or save, and how migrants spend these earnings. My theory, however, focuses exclusively on just one of these three outcomes, that is, what makes certain migrants more likely to invest their remittances or savings. Thus, I am able to construct a more parsimonious model because I only include variables that I hypothesize influence how migrants spend remittances and savings, which in fact Durand et al. (1996) show to differ in some ways from those factors that influence who remits or returns with savings and the amounts of remittances and savings. My sample includes only migrants who report sending remittances or returning with savings after their last migration trip. In the MMP data, 1,750 migrants reported sending back monthly remittances during their last trips

and 1,496 migrants reported bringing back savings at the end of their last trips. I dropped observations that were missing values on independent variables or that were outliers,[3] making my final sample 1112 migrants who sent monthly remittances and 865 migrants who brought back savings. The years corresponding to the most recent migration trip in this sample ranged from 1970 to 1994.

Previous work done with MMP data, such as Durand et al. (1996) and Massey and Basem (1992), combined monthly remittances and savings brought back at the end of a trip into a single dependent variable. I aim to test the theory that different types of social networks affect whether migrants invest savings or whether they invest remittances. Therefore, in my data analysis, I create two separate dependent variables, one for how migrants use monthly remittances and another for how they spend savings.

I also create separate categories for housing, production, and consumption in order to compare the characteristics of migrants who spend remittances on housing or production to those who spend remittances on consumption. I chose a multinomial logit model because this model compares the relative risk that a case falls into one of a set of mutually exclusive multiple outcomes of the dependent variable. The baseline category of the multinomial dependent variable is spending remittances or savings on consumption, and the two comparison categories are housing and production. Thus, my results will tell me how migrants who spend remittances or savings on housing are different from those who spend on consumption, and how those who spend remittances or savings on production are different from those who spend on consumption.

Migrants were asked to list the top five ways they used their savings and remittances, but they were not asked how much was spent on each end use. Thus, in order to classify each migrant into one of three mutually exclusive categories for the two dependent variables, I use the top reported end use of remittances and savings.

I coded the thirteen possible responses for how migrants used remittances and savings similarly to Durand et al. (1996):

Consumption:	Consumer goods, recreation, family maintenance, and paying debts
Housing:	Purchase, construction, or repair of a home
Production:	Purchase of farmland, livestock, motor vehicles,[4] tools, the funding of a business enterprise, and saved money

Exponentiation of the odds of a multinomial regression produces a relative risk ratio, which represents the chances that an observation falls into the comparison category rather than the baseline category. Thus, my models predict the risk that migrants spent remittances or savings on housing rather than

TABLE 2: Independent Variables Included in Model

Independent Variable	Measurement	Coding
Social networks		
Lived with relatives on last migration trip		Binary
Lived with townspeople on last migration trip		Binary
Belonged to a social club in U.S.		Binary
Household resources		
Owned farmland prior to last migration trip		Binary
Owned a business prior to last migration trip		Binary
Owned a home prior to last migration trip		Binary
Family life cycle		
Married	Married at time of last migration trip	Binary
Number of minors	Number of children under age of 18 at time of last migration trip	Continuous
Trip characteristics		
Settled in U.S.	Migrant was located as part of out-migrants from community	Binary
Duration of last trip	Number of years of last migration trip	Continuous
Spouse on last migration trip		Binary
Kids on last migration trip		Binary
Total amount of remittances or savings	Amount of monthly remittances or savings brought back at the end of last migration trip, measured in $1000s	Continuous
Human capital		
Work experience	Migrant's age at time of last trip minus years of education minus 6	Continuous
Education	Years of education completed at time of last migration trip	Continuous

consumption and production rather than consumption. A ratio of 1 represents an equal risk that the migrant falls into the baseline or the comparison category. A ratio greater than 1 represents an increased risk of falling into the comparison category rather than the baseline category, and a ratio less than 1

TABLE 2: Independent Variables Included in Model (Cont'd)

Independent Variable	Measurement	Coding
Sending community characteristics		
Percentage earning twice minimum wage	Percentage of economically active population earning twice the minimum wage at the time of the last migration trip	Continuous
Percentage of female labor force in manufacturing	Percentage of female labor force working in manufacturing at the time of the last migration trip	Continuous
Percentage of male labor force in agriculture	Percentage of male workers in agriculture at time of last migration trip	Continuous
Macroeconomic context		
Mexican inflation rate	Percentage change in the Mexican interest rate corresponding to the year of last migration	Continuous

Note: I also tried a few other specifications of independent variables. I squared work experience to test if its effect is nonlinear and I created a categorical variable that measured if migrants had no education, primary education, or more than primary education. As these additional specifications of variables were not significant, I dropped them in my final models.

represents the opposite, that is, a decreased risk of falling into the comparison category rather than the baseline category. I also correct for community clustering in my models because regressions that assume a simple random sample tend to underestimate standard errors, thus inflating significance levels.

Independent Variables

I use Durand et al. (1996) as a reference to create a nested model (model 1) predicting how migrants spend their remittances and savings. I include from their model only variables that are theorized to affect how migrants spend remittances or savings, not which migrants are more likely to remit or how much they send. In model 2, I add variables that measure social networks to test the hypothesis that migrants who have social ties with other migrants in their place of settlement are more likely to invest remittances and savings.

Although the migrants in the MMP dataset were interviewed only at one point in time, researchers created a life history file for the head of household that includes yearly observations for the migrant's individual characteristics and family status. Furthermore, researchers created files with yearly economic information for each community and annual national economic indicators for Mexico. These files allow me to measure all independent variables for the year corresponding to the migrant's most recent trip to the U.S.

Social Ties

I chose the best indicators of regular contact with other migrants while abroad as my measures of social ties. Researchers asked migrants whether they belonged to a social club of other migrants during their last trip to the U.S and whether they lived with family or townspeople[5] while there. Three binary variables indicate whether migrants had these types of social ties on their last migration trip.

As can be seen in Table 1, 6.6% of migrants sent remittances and 1.9% migrants who sent savings belong to a social club. In order to test whether people who belong to social clubs differ from the rest of the sample in ways I do not control for in my model, I ran a t-test on the difference between the means for various characteristics of migrants who belong to social clubs and the means of those who did not. Migrants who belong to social clubs have significantly higher means for variables measuring total U.S. migration experience and the total number of U.S. trips. To test the spuriousness of my argument, I ran models that included these variables, but they were not significant and the results of the effect of the social club variable were robust. Thus, I did not include these variables in my final models in order to preserve degrees of freedom.[6]

Productive Resources

In order to gauge a household's access to productive resources, I include binary variables that indicate whether the migrant's household owned farmland, a business, or a house or lot prior to the head of household's most recent migration trip. In some cases, a migrant bought a home or land or started a business in the same year as the last migration trip. Since it is impossible to determine whether the migrant made the trip before or after the purchase, for these observations I code this variable as missing.

Family Life Cycle

I measure migrants' family life cycle in two ways: marital status and the number of children under the age of 18 in the household. Migrants in a religious, civil, or common-law marriage at the time of their last migration trip are coded as

being married. I include the number of minors in the household as a continuous variable.

Trip Characteristics

The duration of the migrant's last trip is measured in years. Migrants identified through snowball sampling and interviewed in the U.S. are coded as being settled abroad. Binary variables indicate whether migrants' spouses and children accompanied them on their last migration trip. The total amount of remittances is calculated as how much the migrant reported having sent back each month times the number of months of the last migration trip, and savings are reported as a lump sum. Both monthly remittances and the total amount of savings are continuous variables. The migrant's wages during the last trip are reported in U.S. dollars and cents.

Human Capital

I measure migrants' years of education as a continuous variable. I calculate migrants' work experience as their age minus their years of schooling minus six years before they would have entered school.

Sending Community Characteristics

Local economic conditions can be measured by examining the characteristics and earnings of the workforce. More developed areas in Mexico typically have a high percentage of women in manufacturing, while areas with low numbers of women working are usually rural, subsistence economies (Durand et al. 1996; Lindstrom 1996). The percentage of the economically active population earning twice the minimum wage indicates the potential purchasing power of community residents, which in turn affects the viability of investments. On the other hand, the percentage of men working in agriculture indicates the extent of the rural basis of the economy, and rural economies generally offer fewer opportunities for investment. I included continuous measures of these three variables corresponding to the year of the migrant's last trip. As mentioned above, I did not include measures of access to land used in Durand et al. (1996) because they are available only for the time of the survey and not for the year corresponding to the migrant's most recent trip. Nonetheless, the indicators I use operationalize theories about the sending community's effects on investment because they measure community residents' purchasing power, the economic dynamism of the community, and whether the community is predominantly rural or urban.

TABLE 3: Multinomial Logit Regression on Top End Use of Savings

	Model 1		Model 2	
Housing vs. Consumption	Risk Ratio	P-Value	Risk Ratio	P-Value
Social networks				
Lived with relatives on last migration trip			1.353*	.042
Lived with townspeople on last migration trip			1.406	.140
Belonged to a social club in U.S.			1.279	.603
Household resources				
Owned farmland prior to last migration trip	.767	.459	.942	.8391
Owned a business prior to last migration trip	1.000	.997	1.020	.937
Owned a home prior to last migration trip	.951	.860	2.982***	.000
Family life cycle				
Married	1.032	.897	.730	.395
Number of minors	2.895***	.000	.999	.979
Trip characteristics				
Previous migration experience (months)	.999	.530	.999	.684
Total number of migration trips	.994	.751	.992	.649
Wages during last trip	1.029	.059	1.030	.057
Settled in U.S.	2.768*	.036	2.980*	.027
Duration of last trip (years)	.976	.635	.977	.652
Spouse on last migration trip	1.880	.074	1.935	.069
Kids on last migration trip	.682	.155	.661	.129
Total remittances ($1000s)	1.519***	.000	1.524***	.000
Human capital				
Work experience	.992	.553	.996	.757
Education	.953	.105	.956	.132
Sending community characteristics				
Percentage earning 2x minimum wage	.995	.627	.994	.543
Percentage of female labor force in manufacturing	.999	.822	.999	.870
Percentage of male labor force in agriculture	.944	.933	.873	.835
Macroeconomic conditions				
Mexican inflation rate (percentage change)	1.006*	.017	1.006*	.017

TABLE 3: Multinomial Logit Regression on Top End Use of Savings (Cont'd)

	Model 1		Model 2	
Production vs. Consumption	Risk Ratio	P-Value	Risk Ratio	P-Value
Social networks				
Lived with relatives on last migration trip			1.825*	.021
Lived with townspeople on last migration trip			2.179*	.011
Belonged to a social club in U.S.			1.056	.948
Household resources				
Owned farmland prior to last migration trip	.511*	.018	3.633***	.001
Owned a business prior to last migration trip	1.051	.258	1.904*	.050
Owned a home prior to last migration trip	3.725***	.001	.871	.673
Family life cycle				
Married	1.956*	.033	.446**	.009
Number of minors	.819	.547	1.051	.267
Trip characteristics				
Previous migration experience (months)	1.001	.772	1.002	.623
Total number of migration trips	.999	.980	.994	.861
Wages during last trip	1.014	.409	1.017	.306
Settled in U.S.	1.225	.804	1.477	.639
Duration of last trip (years)	.987	.826	.985	.791
Spouse on last migration trip	1.880	.074	1.935	.069
Kids on last migration trip	.899	.842	.945	.915
Total remittances ($1000s)	1.468***	.000	1.503***	.000
Human capital				
Work experience	.997	.824	1.005	.721
Education	.970	.514	.978	.632
Sending community characteristics				
Percentage earning 2x minimum wage	.979	.393	.977	.328
Percentage of female labor force in manufacturing	.991	.525	.993	.586
Percentage of male labor force in agriculture	.156	.204	.124	.133
Macroeconomic conditions				
Mexican inflation rate (percentage change)	.998	.707	.998	.716
N	865		865	
Pseudo R^2	.085		.096	
Log-likelihood	–747.062		–737.831	
Likelihood ratio test (6)			18.460	
Probability > χ^2			0.000***	

* $p < .05$ ** $p < .01$ *** $p < .001$

TABLE 4: Multinomial Logit Regression on Top End Use of Remittances

	Model 1		Model 2	
Housing vs. Consumption	Risk Ratio	P-Value	Risk Ratio	P-Value
Social networks				
Lived with relatives on last migration trip			.943	.803
Lived with townspeople on last migration trip			.980	.907
Belonged to a social club in U.S.			3.124*	.039
Household resources				
Owned farmland prior to last migration trip	.999	.996	1.014	.957
Owned a business prior to last migration trip	.900	.779	.915	.809
Owned a home prior to last migration trip	2.879***	.000	2.933***	.000
Family life cycle				
Married	.722	.435	.751	.480
Number of minors	.978	.595	.974	.531
Trip characteristics				
Previous migration experience (months)	.998	.462	.998	.416
Total number of migration trips	1.018	.380	1.015	.514
Wages during last trip	1.050**	.004	1.050**	.005
Settled in U.S.	1.760	.238	1.758	.243
Duration of last trip (years)	.760***	.001	.744***	.001
Spouse on last migration trip	.711	.440	.645	.360
Kids on last migration trip	2.143**	.006	2.224**	.006
Total savings ($1000s)	1.068***	.000	1.072***	.000
Human capital				
Work experience	.972*	.044	.970*	.038
Education	.970	.467	.966	.423
Sending community characteristics				
Percentage earning 2x minimum wage	1.020	.179	1.021	.153
Percentage of female labor force in manufacturing	1.003	.712	1.003	.685
Percentage of male labor force in agriculture	1.951	.423	1.994	.386
Macroeconomic conditions				
Mexican inflation rate (percentage change)	1.008	.078	1.008	.104

TABLE 4: Multinomial Logit Regression on Top End Use of Remittances (Cont'd)

	Model 1		Model 2	
Production vs. Consumption	Risk Ratio	P-Value	Risk Ratio	P-Value
Social networks				
Lived with relatives on last migration trip			1.675	.212
Lived with townspeople on last migration trip			1.105	.833
Belonged to a social club in U.S.			4.464	.060
Household resources				
Owned farmland prior to last migration trip	1.927	.167	1.975	.171
Owned a business prior to last migration trip	1.086	.870	1.040	.940
Owned a home prior to last migration trip	1.195	.740	1.261	.684
Family life cycle				
Married	.211***	.001	.202***	.000
Number of minors	.997	.968	.993	.938
Trip characteristics				
Previous migration experience (months)	.998	.686	.997	.561
Total number of migration trips	1.024	.686	1.019	.763
Wages during last trip	.868**	.006	.867**	.009
Settled in U.S.	2.592*	.031	2.294	.076
Duration of last trip (years)	.585***	.001	.573**	.003
Spouse on last migration trip	1.144	.730	1.022	.952
Kids on last migration trip	2.713**	.041	2.663**	.039
Total savings ($1000s)	1.091**	.007	1.101**	.006
Human capital				
Work experience	.993	.825	.998	.942
Education	1.159	.075	1.165	.079
Sending community characteristics				
Percentage earning 2x minimum wage	1.033	.137	1.033	.169
Percentage of female labor force in manufacturing	1.020	.036	1.025*	.023
Percentage of male labor force in agriculture	7.230	.130	7.095	.157
Macroeconomic conditions				
Mexican inflation rate (percentage change)	1.005	.544	1.004	.660
N	1112		1112	
Pseudo R^2	.100		.11	
Log-likelihood	–460.233		–455.22	
Likelihood ratio test (6)			10.030	
Probability > χ^2			.018*	

* $p < .05$ ** $p < .01$ *** $p < .001$

Macroeconomic Conditions

To measure the conditions of the Mexican economy at the time of the migrant's last trip, I chose the percentage change in the Mexican inflation rate.

Findings

The results of my models show that social networks in the U.S. have a positive and significant effect on predicting the risk that migrants spend remittances and savings on housing and production rather than consumption. Table 3 reports results for the multinomial logit regression on savings, and Table 4 reports results for the regression on remittances. In both tables, model 1 is the nested model and model 2 includes variables indicating whether migrants have any of three types of social ties indicating regular contact with other migrants in the place of destination. The improved R^2 between model 1 and model 2 and the log likelihood test both indicate that the difference between the two models is statistically significant. Therefore, including social network variables improves our understanding of which migrants have a greater relative risk of investing remittances and savings.

Social Ties

The findings presented in Tables 3 and 4 support my hypothesis that social ties in the U.S. increase a migrant's risk of investing remittances and savings rather than spend them on consumption. Table 3 shows that migrants who lived with relatives on their last migration trip to the U.S. have a risk that is 1.4 times as great to spend savings on housing rather than consumption and 1.8 times as great that they spent savings on production rather than consumption. Migrants who live with townspeople while in the U.S. have a 2.2 times as great a risk of spending savings on production rather than consumption. In Table 4, for migrants who belonged to a social club of other migrants in the U.S. the last time they migrated, the risk is 3.1 times as great that they spent remittances on housing rather than consumption and 4.5 times as great that they spent their remittances on production rather than consumption.[7] Taken together, these variables demonstrate that social ties to other migrants increase a migrant's relative risk of investing remittances and savings.

Two results indicate that adding variables measuring social ties improve the fit of the model. For the regressions on both remittances and savings, the pseudo R^2 is higher in model 2 than model 1. I also ran a likelihood ratio test to compare the log-likelihood for the nested model to that for the full model.[8] The likelihood ratio test indicates that the difference between model 1 and

model 2 is significant for both the regression on savings (at the .001 level) and for the regression on remittances (at the .05 level).

Differences between Investing Remittances and Investing Savings

Table 1 shows that migrants who send remittances have higher means for several variables that measure trip characteristics. For example, only 2.5% of migrants sending savings are settled in the U.S., compared to 33% of migrants sending remittances who are settled in the U.S. Migrants who sent remittances had an average trip duration of 2.7 years, while migrants who brought back savings were gone for an average of 1.2 years on their last trip. Of migrants who sent remittances, 28% were accompanied by their spouse on their last migration trip, compared to just 9.0% of migrants who returned with savings; 32% of migrants who sent remittances were accompanied by their children, compared to 13% of migrants who brought back savings. The means of the total amount of remittances and the total amount of savings are not comparable because the length of time over which the money was earned is different for each observation.[9]

In other words, the differences in means for the two samples suggests that migrants who send remittances are more likely to be settled in the U.S., they make longer migration trips, and they are more likely to be accompanied by immediate family members. Those who return home with savings are not staying permanently in the U.S., make shorter trips, and more often migrate alone. This finding indicates that sending remittances and sending savings represent two related, but slightly different, strategies for migrating in order to obtain money for an investment.

New Economics of Migration

My findings also support several propositions from the new economics of migration. Migrants from households that owned some productive resources before the head of household's last migration trip have a greater relative risk of investing. For migrants who owned a home before migrating, the risk is 3.0 times as great that they spend savings on housing and 3.0 times as great that they spend remittances on housing relative to consumption. For migrants who own farmland, the risk is 3.6 times as great to spend savings on production rather than consumption. Similarly, owning a business before migrating increased migrants' risk of investing savings in a business by a factor of 1.9 relative to consumption.

The family life cycle and certain trip characteristics also affect how migrants spend remittances and savings. Married migrants have a lower risk of spending remittances and savings on production rather than consumption. Contrary to

my prediction, each additional year of the migration trip decreased the risk of spending remittances on housing or production, though this effect does not appear in the regression on savings. Migrants settled in the U.S. have a risk that is 3.0 greater to spend savings on housing, though being settled in the U.S. does not increase migrants' risk of investing remittances or savings in a business in Mexico. Finally, an increase in the amount of remittances and savings raised the risk that migrants spend them on production and housing rather than consumption, indicating that greater sums of money are more likely to be invested.

Human Capital, Sending Community Characteristics, and Macroeconomic Conditions

Only one indicator of human capital, work experience, had a significant effect in the model of remittances. Migrants with greater work experience have a slightly lower risk to invest their remittances. For savings, a 1.0% rise in the Mexican inflation rate increased the risk of investing in housing by 1.01 relative to consumption. An increase in the percentage of the community's female labor force in manufacturing increased the risk that a migrant spent remittances on production. These findings differ from Durand et al. (1996), who found that the proportion of community members earning twice the minimum wage had a negative effect on spending remittances on housing, though this variable did not affect production. In Durand's model, no macroeconomic indicators had significant effects. In my models, an increase in the inflation rate increases the risk of spending savings on housing.

Conclusions

I find that three indicators of close social ties among migrants who live in the U.S. — migrants who live with family members or townspeople from Mexico and migrants who participate in a social club with other migrants — help determine which migrants spend remittances and savings on housing or production rather than spending them on consumption.

For both migrants who live with family members or townspeople and those migrants who belong to a social club of migrants, these ties strengthen their identity with their place of origin and enforce the social norm to send remittances and savings. My findings also show that different types of social networks have an effect on migrants who send remittances that differ from the effect on those who return home with savings. Belonging to a social club increase the risk of investing in remittances, but not savings, and living with kin or townspeople increases the risk of investing savings, but not remittances.

This difference highlights the fact that migrant networks do not function equally in all circumstances.

As we can see from the different means for the two samples, in general, migrants who return home with savings make short migration trips and they migrate alone. Thus, they live with friends and kin in order to save money to invest in a productive activity or a home.

Migrants who send remittances tend to make longer migration trips and are more likely to be settled in the U.S. than migrants who bring back savings. Migrants who want to invest their remittances may join a social club of other migrants in order to find a way to channel these resources home and to get information from more recent migrants in order to monitor their investments. Migrants who spend long periods of time away from their hometown will join social clubs of other migrants and invest their remittances in a home or a business in order to create a stable basis for claiming continuing membership and status in their hometown.

Previous studies claimed that competition for social status among migrants led them to spend their remittances and savings on conspicuous consumption. I offer an alternative explanation. I argue that migrants who have adequate economic resources and apt family conditions will seek to demonstrate the economic gain they have achieved through migration by investing their remittances and savings. In other words, migrants with prior access to productive resources and low family consumption needs will choose to spend their remittances and savings on a durable and visible asset, such as a home, land or a productive activity, because it is a greater status claim than spending them on short-term consumption, such as recreation. In addition, investing remittances in their hometowns gives migrants a basis for claiming continued membership in their community of origin. Finally, I have shown that migrants use social ties to get information and to monitor their investments, thus transforming those ties into social capital.

Both my explanations support a single theoretical argument: that is, researchers should view migrants' savings and remittances as a socially organized practice that has a collective meaning within migrant networks. Future studies should explore more precisely how different forms of social tie mechanisms promote investment.

Migration theory has produced more propositions about social ties that we can test with large quantitative data sets at this time. For example, the MMP data asked only about how remittances from the migrants' most recent trip were spent; thus, we cannot evaluate the theory that families use multiple migration trips to accumulate productive resources. Furthermore, the MMP data do not allow us to discern whether families who invested remittances from the head of household also had received remittances from other family members, including spouses, sons, daughters, and extended family members.

The MMP data do not tell us how much of the total money sent back was destined for the many different uses. Future research should ask migrants how they allocate remittances and savings from each migration trip they have made and they should ask about remittances and savings from all family members with migration experience, not just heads of household.

These data do not allow me to assess the impact of these investments on development. Nonetheless, in the case of U.S.–Mexico migration, I have shown that social ties among migrants do not always lead to a downward spiral of greater consumption but can increase the likelihood that migrants invest their remittances and savings.

Notes

1. I used the publicly available data as of November 1999 from the Mexican Migration Project. The project continues to expand the number of communities surveyed. See http://lexis.pop.upenn.edu/mexmig/welcome.html.

2. See Durand et al. (1996) for a description of the weights.

3. I could not use data from eight communities because household-level data were not gathered, and four other communities did not have community-level variables. I dropped a few more cases that were missing data on one of the independent variables. I also dropped outliers on the amount of remittances and savings. I calculated outliers as those responses that were more than two standard deviations from the mean. For the dependent variable, I dropped cases in which migrants responded "other" to how they used remittances and savings. Some more cases had an invalid response for the most frequent end use of remittances, so I recoded them as missing. These 166 cases responded "didn't use remittances for anything else," which is a valid response only for the second through fifth use of remittances. As these cases did not list a second end use of remittances, I deduced they were mislabeled and recoded them as missing.

4. It is difficult to know whether families used vehicles for a productive end, such as transporting goods or as a taxi. The results of my analysis were robust to the issue of whether cars were counted as consumption or as production, so I included them in production.

5. The survey asked migrants whether they had lived with *paisanos* while in the U.S. The word *paisano* is translated by Massey et al. (1987) as a person from the same community.

6. Twenty-four of 48 communities in my sample had at least one migrant who belonged to a social club, indicating that this variable is not clustered at the community level.

7. This variable is statistically significant at the 94% confidence level.

8. The degrees of freedom are equal to the number of constraints that have been freed (in this case, three variables for two outcomes, for a total of six).

9. The two samples I use have overlapping observations, since many of the migrants sent both remittances and savings. I also looked at the means for these variables according to

whether the migrant sent only remittances, sent only savings, or sent both remittances and savings. This analysis demonstrated that means for the people who sent only remittances are driving the differences in means for my two samples. This finding adds robustness to my argument that people who send remittances are different from those who send savings.

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