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Repeat Migration and Remittances as Mechanisms for Wealth Inequality in 119 Communities From the Mexican Migration Project Data

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Abstract To evaluate the distributional impact of remittances in origin communities, prior research studied how migrants' selectivity by wealth varies with migration prevalence in the community or prior migration experience of the individual. This study considers both patterns; it examines selectivity separately in low- and high-prevalence communities and for first-time and repeat migrants. Based on data from 18,042 household heads in 119 Mexican communities from the Mexican Migration Project, the analyses show that (1) first-time migrants in low-prevalence communities come from poor households, whereas repeat migrants in high-prevalence communities belong to wealthy households; and (2) higher amounts of remittances reach wealthy households. These results suggest that repeat migration and remittances may be mechanisms for wealth accumulation in the study communities. Descriptive analyses associate these mechanisms with increasing wealth disparities between households with and without migrants, especially in high-prevalence communities. The study, similar to prior findings, shows the importance of repeat migration trips, which, given sustained remittances, may amplify the wealth gap between migrants and nonmigrants in migrant-sending communities. The study also qualifies prior findings by differentiating between low- and high-prevalence communities and observing a growing wealth gap only in the latter.

Keywords Migration · Remittances · Wealth inequality · Mexico

Introduction

Scholarly interest in remittances, funds, and goods sent by migrants to their origin families and communities has grown dramatically in recent years. Estimates indicate that annual international remittances to developing countries reached US$240 billion

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in 2007, becoming the second largest source of external finance for these countries after foreign direct investment (Ratha and Xu 2008). Remittance flows relax budget and credit constraints of origin households and create investment opportunities in origin communities (Durand et al. 1996a, b; Rapoport and Docquier 2006; Rempel and Lobdell 1978; Stark and Levhari 1982; Taylor 1999). These flows also provide a potential pathway for income redistribution to the most deprived regions of the world (Jones 1998).

Remittance flows are particularly important in Latin America, a region with one of the highest levels of income and wealth inequality in the world (Hoffman and Centeno 2003) and the recipient of 25 % of all remittances to developing countries (Castro and Tuirán 2000; Ratha and Xu 2008). The roots of disparities in the region have been traced to the distribution of land tenure and political influence by the colonial order (Gonzalez 1970; Paige 1997), and more recently to the weakness of democratic institutions (Huber et al. 2006). Research finds that economic inequality in the region has increased in the past decades (Morley 2001). Studies have linked this trend to international remittances but yielded conflicting findings. In rural Mexico, for example, Taylor (1992) and Taylor et al. (2009) found an equalizing effect of remittances on the income distribution, whereas Mora (2005) and Acosta (2008) observed the opposite pattern.

To reconcile such conflicting empirical patterns, in their seminal work, Stark et al. (1986) considered how migrants' selectivity by wealth varies with migration prevalence in a community. The authors argued that because of positive selectivity of initial migrants by income or wealth, inequality increases in the early stages of migration but gradually levels off and declines as a community reaches high levels of migration. Taylor et al. (2009) and Koechlin and Leon (2007) observed this relationship at the macro level. McKenzie and Rapoport (2007) tested its underlying assumption at the micro level. Using Mexican data, they showed that in communities with a high prevalence of migration, first-time migrants were less likely to be selected on wealth; hence, remittances reached poor households and decreased the overall wealth inequality.

Similar to this prior work, we study how individuals' wealth status is associated with their propensity to migrate and remit to draw implications for inequality. We focus on the largest migration and remittance flows in Latin America—namely, between the United States and Mexico—using data from the Mexican Migration Project (MMP), which contain information on the migration and remittance decisions of more than 18,000 household heads from 119 communities between 1965 and 2008. Similar to Stark et al. (1986), we study patterns of wealth selectivity separately in low- and high-migration-prevalence communities. Inspired by qualitative case studies of Mines and Massey (1985) and Jones (1995), we also consider the cumulative effects of migration, and study patterns of selectivity separately for first-time and repeat migrants.

Background

Remittance flows to developing countries have been increasing consistently in the past decade, reaching 20 % of the gross domestic product (GDP) in many countries in

Latin America and Africa (World Bank 2008). To evaluate the distributional impact of remittances, some researchers have used macro-level data to link the trends in remittance flows to trends in economic inequality (Acosta et al. 2006; Koechlin and Leon 2007). Others have relied on household-level data and inequality decomposition techniques to measure the contribution of remittances to overall inequality (Adams 1989, 1992; Barham and Boucher 1998; Stark et al. 1986; Taylor 1992; Taylor et al. 2009). These studies have yielded conflicting findings.

Adams (1989), for example, observed that international remittances increased the inequality in the distribution of income in rural communities in Egypt but not in rural Pakistan (Adams 1992). Researchers also observed contradictory findings in this article's national context, Mexico. Stark et al. (1986), Taylor (1992), and Taylor et al. (2009), for instance, all showed that remittances reduced income inequality, whereas Mora (2005) observed the opposite pattern.

These studies, with the exception of Adams (1989), assumed remittances to be an exogenous source of income. A number of scholars argued for treating remittances as a substitute for migrants' local income (Arroyo and Berumen 2000; Canales and Montiel 2004). Barham and Boucher (1998) showed that when treated as a substitute for local income rather than an exogenous transfer, remittances increased, rather than decreased, income inequality in Nicaragua. Similarly, Acosta (2008) found that remittances had an overall inequality-reducing effect in 10 Latin American countries, but this effect disappeared in some countries if remittances were considered endogenous.

Stark et al. (1986) attributed these conflicting patterns to a link between migrant selectivity and inequality. The authors envisioned an inverted-U relationship of income inequality to migration prevalence, akin to a Kuznets curve, which suggests a similar relationship between inequality and economic growth (Kuznets 1955). Inequality is expected to increase in the initial take-off period of migration, and then to gradually level off and decline as a community reaches high levels of migration. The reason offered for this pattern is the decline in selectivity of migration with increasing migration prevalence. Initial migrants in a community incur high costs to migration and typically come from middle or upper parts of the income distribution. As migration gains prevalence, experiences of prior migrants help mitigate the costs of migration, and individuals from lower income strata can afford to migrate. Therefore, in communities where migration is already prevalent, remittances are expected to decrease inequality, with the opposite effect in communities at the initial migration stages.

This curvilinear relationship was supported with evidence from various settings. In their original study, Stark et al. (1986) found a more equalizing effect of remittances in a Mexican village that had a history of U.S. migration, compared with another village that had only recently begun to send migrants. Extending this analysis to rural households from 14 Mexican states, Taylor et al. (2009) showed that inequality-reducing effects of remittances were concentrated in regions with high migration prevalence. Koechlin and Leon (2007) generalized this result with data from 78 countries.

In recent work, McKenzie and Rapoport (2007) developed an individual-level model of migrant selectivity to study the relationship between migration prevalence in a community and changes in wealth inequality. Using two data sets from the

Mexico-U.S. migration system, including the Mexican Migration Project (MMP) data used here, the authors showed that in communities with high migration prevalence, first-time migrants are less likely to be selected on wealth; therefore, remittances reach mostly poor households and reduce the overall inequality.

Although these findings largely supported Stark et al.'s (1986) claim of an inverted-U relationship of inequality to migration prevalence, results from qualitative case studies provided abundant counterevidence. Comparing four Mexican communities at progressively advanced stages of migration, Jones (1998) suggested an N-shaped pattern of inequality. Specifically, in the initial "innovation" stage, migrants are positively selected from households that are already well off, and socioeconomic inequality increases in a community. In the subsequent "early adopter" stage, migrants are drawn from an increasingly diverse pool, and inequality decreases. In the final "late adopter" stage, migration reaches saturation; and with no new migrants to be drawn in, socioeconomic inequality increases once again as migrants continue to advance economically while nonmigrants fall further behind.

Focusing on single or a few communities in Mexico, other scholars observed a gap between migrants and nonmigrants. Reichert (1982) found a highly differentiated class structure in a community in Michoacán, where legal U.S. migrants occupied the highest economic ranks, followed by undocumented migrants and nonmigrants. Mines (1981) and Mines and de Janvry (1982) reported wealth disparities in a community of Zacatecas, where committed U.S. migrants owned more land than either temporary migrants or nonmigrants. Dinerman (1978) and Wiest (1973) observed a similar pattern of economic differentiation in Michoacán, as did Cohen (2001) in Oaxaca.

A number of studies highlighted the cumulative aspects of migration-induced inequality. Mines and Massey (1985) noted an increasing concentration of land in the hands of U.S. migrants in two communities in Zacatecas and Michoacán. The longer they had been migrating, these migrants accumulated more land and properties. Similarly, in his study of four communities in Zacatecas, Jones (1995) observed that migrants' possessions increased in proportion to their experience in the United States.

Empirical Strategy

Data

This study employs the MMP data from 119 communities located in major migrant-sending areas in 21 Mexican states. Each community was surveyed once in this period, during the winter months, when migrants are likely to visit their origin households.[1] Detailed migration information was obtained from about 200 randomly selected household heads (mostly men) in each community. These data, collected retrospectively in a life history survey, allow us to observe migration and remittance

[1] Detailed information about the MMP is available online (http://mmp.opr.princeton.edu). The five communities surveyed as part of the pilot study in 1982 are excluded, as are the data collected nonrandomly from a small number of migrants in the United States.

decisions of more than 18,000 household heads from multiple communities (ranging from small villages to metropolitan areas) over several years.

The MMP data are not strictly representative of the Mexican population. Yet, prior work found that these data yield an accurate profile of the U.S. migrants in Mexico, consistent with national data (Durand et al. 2001; Zenteno and Massey 1998). The data contain information on migrants who have returned to Mexico, or who have at least one household member remaining there, and cannot capture permanent migrants who have taken their whole household to the United States. A selective focus on migrants with at least one household member in Mexico is not problematic given our interest in the inequality in origin communities, which, by definition, no longer include migrant households living permanently in the United States. The exclusion of permanent U.S. migrants does, however, lead us to overestimate the amount of remittances sent by Mexican migrants. Specifically, our monthly remittance estimates for first-time ($405) and repeat ($436) migrants, shown in Table 1, are higher than those of Banco de México, which put monthly remittances in the range of $267 to $410 during 2000–2005. These latter estimates, however, also overstate the actual amounts (Tuirán and Santibáñez 2006) because they conflate family remittances with private transfers (Lozano 2003). Indeed, more reliable estimates, such as from Lowell and de la Garza (2002) based on U.S. household surveys, yield the much lower average monthly remittance amount of $221.

Modeling Approach

This study investigates how individuals' wealth status is associated with their migration and remittance behavior to draw implications for inequality. Prior work showed how wealth affects migration differently depending on the prevalence of migration in the community (Stark et al. 1986) or the prior migration experience of the individual (Jones 1995; Mines and Massey 1985). Our analysis considers both patterns. We start with two models to estimate the effect of wealth on individuals' (1) first and (2) repeat migration trips, and thus to test whether this effect varies by individuals' prior experience. We then employ four models to estimate the effect of wealth on individuals' (1) first and (2) repeat migration trips in (3) low- or (4) high-migration-prevalence communities. These models test how the effect of wealth on migration varies jointly by individuals' prior experience and a community's migration experience.

To preserve statistical power, we test how wealth affects the amount of remittances in the overall sample, rather than separately for first and repeat migration trips, or in low- or high-migration-prevalence communities. Information on remittances is collected for the last migration trip only, and available for only a small share of the sample (3,096 of 487,305 person-years).

Because remittances are observed for migrants only, which is a nonrandom segment of the population, an accurate evaluation of the wealth-remittance relationship requires a correction for migrant selectivity. To pose the problem formally, let the amount remitted by individual i be represented by y_{1i} and governed by the following equation:

$$y_{1i} = \mathbf{x}_{1i}\boldsymbol{\beta}_1 + \varepsilon_{1i}, \tag{1}$$

Table 1 Sample characteristics by migrant status[a]

Variable	Nonmigrants	First-time Migrants	Repeat Migrants
Household Wealth			
Value of household land in 2000 USD (mean)	4,191	4,907	10,584*
Number of rooms in household properties (mean)	2.1	2.0	3.2*
Demographic Characteristics			
Age (mean)	37.6	34.1*	40.5*
Sex (male = 1) (%)	82.5	94.0*	98.1*
Primary education or less (%)	72.2	70.5	85.3*
Some secondary education (%)	15.0	18.7*	9.9*
Complete secondary education (%)	7.5	6.7	3.5*
Advanced education (%)	5.3	4.1	1.4*
Unmarried (%)	36.5	30.6*	14.9*
Spouse in Mexico? (%)	63.4	66.5*	81.6*
Spouse in the United States? (%)	0.1	2.8*	3.5
Number of children under 18 (mean)	2.1	2.2	2.9*
Prior migration Experience			
Trips by individual (mean)	0.00	0.00	2.53*
Parents U.S. migrants? (%)	6.0	16.6*	30.5*
Proportion ever migrated in community (mean)	0.12	0.19*	0.27*
Community Characteristics			
Community ever had *ejido* land? (%)	89.2	92.4*	92.4
Land inequality (Gini) (mean)	0.86	0.86	0.88
Average rainfall to state in past 3 years (in mm) (mean)	8.2	7.5	7.1*
Kilometers to U.S. border (mean)	648	655	666
Migrant Characteristics (on last trip)			
Family paid for coyote fees?[b] (%)		13.6	12.0
Have documentation in the United States? (%)		24.8	41.5*
Years since migrated (mean)		2.9	1.9*
Monthly wages in destination in 2000 USD[b] (mean)		1,622	1,718
Monthly remittances sent in 2000 USD[b] (mean)		405	436
Monthly savings brought upon return in 2000 USD[b] (mean)		180	263*
Migrant Destination in the United States (on last trip)			
Northeast (%)		3.8	2.9
Midwest (%)		12.9	10.4*
South (%)		22.1	21.8
West (%)		61.2	64.8*
N (person-years)	430,549	25,284	31,472
n (persons)	17,741	3,096	2,201

[a]First-time migrants are individuals who have migrated once (considered nonmigrants prior to their first trip). Repeat migrants are individuals who have migrated more than once.

[b]The variable is measured on migrant's last trip.

*Indicates that the means for an indicator differ significantly ($p < .05$, two-tailed test) in comparisons of (1) first-time migrants to nonmigrants or (2) repeat migrants to first-time migrants. Tests account for clustering at the individual level.

where $\mathbf{x}$ represents a vector of independent variables, $\boldsymbol{\beta}$ is the corresponding vector of coefficients, and ε is the identically and normally distributed error term. Let migration decision of individual i be represented by a binary dependent variable y_{2i} generated by a probit equation and related to an unobserved latent variable y_{2i}^* as follows:

$$y_{2i}^* = \mathbf{x}_{2i}\boldsymbol{\beta}_2 + \varepsilon_{2i}$$

$$y_{2i} = \begin{cases} 1 & \text{if } y_{2i}^* > 0 \\ 0 & \text{if } y_{2i}^* \le 0 \end{cases} . \tag{2}$$

We observe y_{1i} if and only if a person migrates ($y_{2i} = 1$). This leads to a specification in which the probit equation (Eq. (2)) for migration is completely observed, but for the remittance equation (Eq. (1)), we have a selected sample. In the case of a nonzero correlation (ρ) between the error terms (ε_{1i}, ε_{2i}), separately estimating the migration and remittance equations will lead to selectivity bias in the estimates of the latter. We account for this bias with Heckman's (1979) two-stage selection model, which calls for an independent variable—known as an "instrument"—in the migration (selection) equation that is not included in the remittance (outcome) equation. This restriction is not strictly required for identification. However, if the set of regressors is identical for the selection and outcome equations, the estimation is poor because of high multi-collinearity (Berk 1983).

Hoddinott (1994) employed a Heckman two-stage model of remittances to control for migrant selectivity in the Kenyan setting. Taylor et al. (2003) and Mora (2005) recently used a similar model of selection correction in the Chinese and Mexican settings, respectively. Both studies used an indicator of community migration prevalence as an instrument but did not test its validity for identification. Given that migration prevalence is likely to be related to unobserved community conditions (e.g., lack of job opportunities), which also affect remittance patterns, one might suspect that this instrument may not satisfy the exclusion restriction.

This study addresses this issue with an alternative instrument: namely, the interaction between community migration prevalence and distance to the U.S. border. The intuition is as follows. Individuals living in communities far from the border typically face higher costs to migration. The detrimental effect of distance on migration should be lower in communities with high migration prevalence because prior migrants provide useful information or help. The effect of distance on the amount remitted, however, should not vary with the community migration prevalence. A supplementary analysis presented in Appendix A evaluates the validity of these assumptions.

Operational Measures

The sample for the study is 18,042 *household heads* from 119 Mexican communities. A life history survey provides a panel data set of individuals' migration decisions from 1965 (the end of the Bracero program, which recruited temporary workers to the

United States) to 2008 (the year of the last survey). All the moves that an individual makes until the survey year are recorded, yet information about remittances is collected only for the *last migration trip* to avoid recall bias. Therefore, the migration model is estimated with data from all migration trips, whereas the remittance model is estimated with data from the last trip only. The person-year observations are supplemented with contextual information from the household and community surveys, several macro-economic indicators provided by Massey and Espinosa (1997), and geographic data collected by the author.

The dependent variables are (1) a binary indicator of whether a person migrated to the United States in a year, and (2) the amount of remittances sent or savings brought home by a migrant in that year. For the purposes of this study, both transfers are considered remittances. The total amount of remittances is computed by multiplying the duration of the last trip by monthly remittances and adding the total savings brought by a migrant upon return. The monthly amount (total divided by the duration of the last trip) is converted to constant U.S. dollars (in year 2000) and used in logarithm form in analysis.

The key independent variable is household wealth. Household income is measured in the survey year alone, and therefore does not permit a longitudinal analysis. Household land and properties, on the other hand, are recorded in each year and provide useful proxies for household wealth. We compute the total value of household land by multiplying the hectares owned with the average price of land in the community (in 2000 USD).[2] Focusing on value, rather than amount, assures that land owned in a rural area is not treated equally as land in a more expensive, urban region. There is no information on average property values in the community survey. We use the total number of rooms in household properties as a proxy for their value. Land and property measures are used in logarithm form to take into account their skewed distribution, lagged by a year to prevent simultaneity with migration decisions, and standardized to mean of 0 and a standard deviation of 1 for comparability. Figure 2 in Appendix B shows histograms for logarithms of land, properties, remittances, and savings (nonzero values only), which are approximately normal in distribution.

Several individual characteristics related to migration and remittance behavior are included in models: age, sex, education (primary, secondary, advanced), marital status (also whether spouse is in the United States), and the number of children in the household. Prior research shows that individuals are more likely to migrate if they have prior migration experience, or if they are related to prior migrants through household or community ties (Massey and Zenteno 1999). To capture this pattern, we measure individuals' prior migration experience by their accumulated number of U.S. trips. Prior household experience is measured by an indicator of whether an individual's parents were U.S. migrants. Community experience is captured by migration prevalence ratio, defined as the proportion of individuals who have ever migrated in a community. Level of inequality in community is measured by the Gini coefficient of household land. Land tenure arrangements are captured with an indicator for whether community ever had *ejido* (communal) land.[3] Agriculture production is highly dependent on weather conditions,

[2] Municipality or state average prices are used for communities with missing values.

[3] The *Ejido* indicator is missing for five communities. We set the indicator to 0 in these communities to conserve sample size; however, the results remain identical if these communities are excluded from analysis.

and differences across communities in this respect are controlled with an indicator of average rainfall to the state in the past three years. Community distance to the U.S. border is included as a proxy for costs of migrating.[4] State and year indicators account for the geographic or temporal patterns not captured with the independent variables.

Indicators for migrant characteristics are only included in remittance models. Prior research finds remittances to be a repayment for migration costs incurred by the household, a pattern considered with an indicator for whether family paid for coyote (smuggler) fees. Prior work also shows that remittances decrease as migrants' ties to origin weaken over time (Durand et al. 1996a), which is captured by indicators of years since an individual migrated and whether the migrant has U.S. documentation. Other control variables are migrants' monthly wages (in 2000 USD), and binary indicators for their destination (Northeast, Midwest, South, and West).[5]

Table 1 displays means for all variables separately for nonmigrants, first-time migrants, and repeat migrants along with results from cluster-adjusted difference-of-means tests comparing first-time migrants with nonmigrants, and repeat migrants with first-time migrants. (First-time migrants have migrated once and are considered nonmigrants prior to their first trip. Repeat migrants are individuals who have migrated more than once.)

Compared with nonmigrants, first-time migrants are significantly younger and also more likely to be male, to be married, and to have a spouse in Mexico or the United States. First-time migrants are more likely to have parents who were U.S. migrants and to live in communities with a high proportion of migrants and with prior *ejido* land arrangements. Interestingly, repeat migrants differ significantly from first-time migrants in most variables. Compared with first-time migrants, repeat migrants are older, less educated, and more likely to be married or to have children. Repeat migrants come from communities where migration is already prevalent and also where cultivation may have recently suffered from low levels of rainfall. Repeat migrants are also more likely than first-time migrants to have documentation in the United States and also to have higher amounts of savings upon return.

Most importantly, repeat migrants are significantly wealthier than both nonmigrants and first-time migrants. In the average person-year, a nonmigrant owns \$4,191 in land (2000 USD), an amount not statistically different from the \$4,907 landworth owned by first-time migrants. A repeat migrant, by contrast, owns \$10,584 in land, which is more than double the value owned by nonmigrants or first-time migrants ($p < .05$ in difference-of-means test adjusted for individual-level clustering). Similarly, both nonmigrants and first-time migrants own properties with an average of two rooms in the year under observation, and repeat migrants own properties with more than three rooms ($p < .05$).

Similar to prior research in the Mexican setting, we find that migrants are positively selected on wealth (Cohen 2001; Dinerman 1978; Durand and Massey

[4] We tested the robustness of our findings to two alternative measures of community distance to the United States: (1) distance to the closest international airport in Mexico, and (2) distance to the closest popular border crossing city, which includes Tijuana or El Paso, TX, prior to 1993; and Laredo, TX, El Centro, CA, and Nogales, AZ, thereafter, according to Orrenius (2006) and Singer and Massey (1998). The former measure takes into account the transportation networks in Mexico, and the latter considers the shifting enforcement zones in the United States. Both measures led to similar results in all models (available upon request).

[5] Because wage in destination is a critical determinant of remittance behavior, migrants with missing wage information (about one-third of all migrants) are not used in the analysis. Alternative analysis with all the migrants, and without the wage variable, leads to similar wealth coefficient estimates (available upon request).

1992; Massey et al. 1994; Mines 1981; Reichert 1981). By separating first-time and repeat migrants, however, we provide an alternative explanation for this selectivity. Prior research suggested that migrants originate from wealthier households because those households can afford the costs of migration. If that were the case, we would expect first-time migrants to be wealthier than nonmigrants. Instead, we see that first-time migrants have similar levels of wealth as nonmigrants but are significantly poorer than repeat migrants. This pattern suggests that migrants may be accumulating wealth through repeated migration trips to the United States.

To test the plausibility of this explanation, similar to Jones (1995), we compare the average household wealth across different levels of migration experience. Table 2 shows that the average value of land and number of rooms in properties increase with increasing prior U.S. trips. Thus, individuals who have taken one or two trips are significantly wealthier than those with no trips, and those with three or four trips are significantly wealthier than those with one or two trips, and so on ($p < .05$). The only exception to this pattern comes from individuals with five or more trips, whose land possessions are not significantly more valuable than those of individuals with three or four trips. These findings, based on data from 119 communities in 21 states, generalize similar patterns observed by Cohen (2002) in 13 communities in Oaxaca; Jones (1995) in four communities in Zacatecas; Mines and de Janvry (1982) in a community in Zacatecas; and Mines and Massey (1985) in two communities in Zacatecas and Michoacán.

A stronger test of migrant selectivity, however, requires controlling for various contextual factors. Prior research showed how selectivity by wealth depends on the prevalence of migration in a community (Massey et al. 1994; Stark et al. 1986) and the level of inequality in productive resources (Durand and Massey 1992; Stark and Taylor 1991). Prior work also discussed how land tenure arrangements in Mexico shape the distribution of land, and consequently, the context for migration (Goldring 1996). Researchers suggested that the *ejido* land system, which granted households use of communal land but required them (until 1992) to farm the land themselves, restricts mobility (Hamilton 2002). Other scholars argued that some *ejido* plots were less suitable for agriculture; thus, many rural households complemented their income by sending migrants to the United States (Assies 2008; DeWalt and Rees 1994).

The following analysis accounts for these contextual factors with community level measures of migration experience, land inequality, and *ejido* arrangements. The analysis also controls for weather conditions, which affect agricultural production and consequently, migration flows (Munshi 2003). The main patterns of wealth selectivity among migrants identified in the descriptive analysis herein remain robust to these (and various other individual- and household-level) controls.

Table 2 Household wealth by number of migration trips to the United States

	No Trip	1 to 2 Trips	3 to 4 Trips	5 Trips or More
Value of Household Land in 2000 USD	4,820	7,036*	10,747*	13,259
Number of Rooms in Household Properties	2.17	2.35*	3.01*	4.13*
N (person-years)	430,549	36,761	8,651	11,344

*Indicates that the means for an indicator differ significantly ($p < .05$, two-tailed test) in comparisons of the person-years in a category with those in the preceding category. Tests account for clustering at the individual level.

Results

Migration

How is wealth status associated with an individual's propensity to take a first or a repeat migration trip? The two columns of Table 3 report the estimated marginal effects of wealth on the probability of first and repeat migration from a model that includes controls for demographic information, prior migration indicators, community characteristics, and fixed effects for state and year. Land and property indicators are in logarithm form and standardized to a mean of 0 and a standard deviation of 1. Standard errors are adjusted for clustering at the individual level. The sample in the first column includes nonmigrants (individuals who have never migrated) observed annually through the year of the survey and migrants observed annually through the year of their first migration. The sample in the second column includes nonmigrants observed in each year and repeat migrants observed annually after the year of their first migration.

The results indicate that land and property ownership are strongly associated with the propensity to migrate, although the direction of the effects differ between first and repeat migration. Specifically, a 1 standard deviation increase in the logarithm of land value above its mean has no effect on the probability of first migration but generates a 0.08 percentage-point increase in the probability of repeat migration. Similarly, a 1 standard deviation increase in the logarithm of number of rooms in household properties decreases the probability of first migration by 0.03 percentage points, while it increases the probability of repeat migration by 0.14 percentage points. (Nonlinear terms for wealth indicators, found significant in prior work, do not have an effect here, potentially because these indicators are already in logarithm form.)

The differential effect of wealth on first and repeat migration trips confirms the findings of the earlier descriptive analysis. Specifically, even controlling for various individual and contextual factors, first-time migrants are likely to be selected from poorer households, and repeat migrants are likely to belong to wealthier households. These patterns, similar to those in Table 2, suggest that for repeat migrants, household wealth can be a result of past migration behavior.[6]

The probability of migrating for the first time decreases with age. The probability of taking repeated trips increases with age and then declines after a threshold age (around 21) is reached. Men are more likely to migrate, partially because of a gender

[6] The results suggest the potential endogeneity of wealth indicators to migration or remittance outcomes, which may bias the empirical conclusions. To address this issue, we lag the household wealth indicators by one year. This approach does not solve the endogeneity problem if current migration decisions are correlated with past migration, which affects household wealth in the past, or if there are omitted variables related to both wealth and migration. We test for this possibility with a procedure suggested by Spencer and Berk (1981). We estimate two wealth equations (for land and property indicators, separately) with exogenous regressors (past rainfall and real interest rates, which are likely to affect wealth). We then add the residuals from these equations to the migration and remittance models as extra regressors. The coefficients for the regressors are jointly insignificant in both the migration (F statistic = 1.89, p = .39) and remittance (F statistic = 0.16, p = .85) models, and the null hypothesis that the wealth indicators are orthogonal to the errors cannot be rejected. These results suggest that the lagged wealth indicators can be treated as exogenous to current migration and remittance decisions. Crucially, this treatment does not preclude an association between wealth and past migration and remittances, but such an association does not seem to bias our estimates.

Table 3 Estimated marginal effects of household wealth on first and repeat migration[a]

Variable	First Migration Trip (1)	Repeat Migration Trip (2)
Household Wealth		
Logarithm of value of household land in 2000 USD	0.0002	0.0008***
	(0.0001)	(0.0002)
Logarithm of number of rooms in household properties	–0.0003**	0.0014***
	(0.0001)	(0.0002)
Demographic Characteristics		
Age	–0.0001	0.0003*
	(0.0001)	(0.0001)
Age squared / 100	–0.0002***	–0.0007***
	(0.0001)	(0.0002)
Sex (male = 1)	0.0032***	0.0071***
	(0.0002)	(0.0005)
Some secondary education	–0.0010***	–0.0027***
	(0.0005)	(0.0005)
Complete secondary education	–0.0020***	–0.0041***
	(0.0002)	(0.0005)
Advanced education	–0.0028***	–0.0054***
	(0.0002)	(0.0004)
Spouse in Mexico?	–0.0004	0.0016***
	(0.0002)	(0.0004)
Spouse in the United States?	0.0997***	0.0295***
	(0.0157)	(0.0066)
Number of children under 18 (in 10s)	–0.0001	–0.0005
	(0.0005)	(0.0010)
Prior Migration Experience		
Trips by individual[b]	—	—
Parents U.S. migrants?	0.0066***	0.0149***
	(0.0006)	(0.0019)
Proportion ever-migrated in community	0.0532***	0.0740***
	(0.0096)	(0.0197)
Community Characteristics		
Land inequality (Gini)	0.0006	0.0038**
	(0.0004)	(0.0013)
Community ever had *ejido* land?	0.0014***	0.0010
	(0.0002)	(0.0008)
Average rainfall to state in past 3 years (in mm)	0.0005***	0.0008***
	(0.0001)	(0.0001)
Distance to the U.S. border (in 100 km)	0.0026***	0.0037*
	(0.0005)	(0.0016)
Distance squared	–0.0247***	–0.0559***

Table 3 (continued)

Variable	First Migration Trip (1)	Repeat Migration Trip (2)
	(0.0038)	(0.0113)
Distance × Proportion ever migrated	–0.0148***	–0.0229***
	(0.0029)	(0.0063)
Distance squared × Proportion ever migrated	0.1247***	0.2392***
	(0.0217)	(0.0500)
State and Year Indicators	Yes	Yes
N	400,689	449,824
R^2	0.123	0.245

[a]The dependent variable in column 1 (column 2) is whether a person takes a first (repeat) migration trip to the United States in a given year; the estimates are based on a probit model. Standard errors, adjusted for clustering at the individual level, are given in parentheses. Wealth indicators are standardized to mean 0 and standard deviation 1. All models include state and year dummy variables.

[b]Individual trips predicts repeat migration perfectly (all individuals with prior trips migrate again), and hence are not included in the model.

*p < .05; **p < .01; ***p < .001 (two-tailed tests)

bias in the data, which come from household heads alone. Both first-time and repeat migrants are negatively selected on education, possibly because educated individuals secure desirable jobs in the domestic labor market and face a high opportunity cost to migrating. In this sample, the likelihood of migrating is lower for individuals with secondary education (compared with those having primary education or less) and lowest for those with advanced degrees. Individuals are more likely to take a first or repeat migration trip if they have a spouse in the United States. Having a spouse in Mexico does not affect the probability of first migration but does increase the propensity for repeat migration. Having young children has no effect on migration. Having family members who are prior U.S. migrants and living in a community with a high proportion of prior migrants increase the likelihood of first and repeat migration. Land inequality in a community is associated with a higher propensity of repeat migration, and the presence of *ejido* land is associated with a higher propensity of first migration. Rain shortages in a community decrease income from agriculture and are expected to increase migration. In our case, first and repeat migration is higher in states that received higher-than-average rainfall in the past three years. This surprising positive effect may be due to the failure of the state-level rainfall variable to capture the within-state variations, which may be higher than the variation between states. Finally, the effect of distance to the U.S. border is nonlinear and depends on the migration prevalence in the community (as described in Appendix A).

The results show how migrant selectivity varies over the different stages of individuals' migration careers, and they confirm prior findings based on small-scale case studies in the Mexican setting (Jones 1995; Mines and Massey 1985). To test another established finding in the literature—namely, that migrant selectivity varies over the different stages of a community's migration prevalence (Stark et al.

1986)—we estimate the migration models separately in low- and high-migration-prevalence communities. We categorize a community as low (high) prevalence in a given year if the proportion ever migrated in a community is lower than (equal to or higher than) the median proportion across all communities in that year.

Table 4 reports the estimated marginal effects of wealth on the probability of first and repeat migration separately for high- (panel A) and low- (panel B) migration-prevalence communities. The results show that the probability of first migration declines with number of properties owned but only in communities with low-migration prevalence. The propensity for repeat migration, by contrast, increases with both land and property ownership but only in communities with high migration prevalence.

Remittances

How is wealth status related to the amount remitted by migrants? The two columns in Table 5 present coefficients from the remittance model estimated with ordinary least squares (OLS) and Heckman's two-stage least squares, respectively.

Table 4 Estimated marginal effects of household wealth on first and repeat migration in high- and low-migration-prevalence communities[a]

Variable	First Migration Trip (1)	Repeat Migration Trip (2)
Panel A. High-Migration-Prevalence Communities		
Logarithm of value of household land in 2000 USD	–0.00001	0.00136**
	(0.0002)	(0.0005)
Logarithm of number of rooms in household properties	–0.00022	0.00397***
	(0.0002)	(0.0006)
N (person-years)	181,089	228,799
R^2	0.12	0.20
Panel B. Low-Migration-Prevalence Communities		
Logarithm of value of household land in 2000 USD	0.00014	–0.00008
	(0.0001)	(0.0002)
Logarithm of number of rooms in household properties	–0.00026**	–0.00002
	(0.0001)	(0.0002)
N (person-years)	219,600	221,025
R^2	0.10	0.11

[a]A community is categorized as low-prevalence (high-prevalence) in a given year if the proportion ever-migrated in the community is lower than (equal to or higher than) the median proportion across all communities in that year. The dependent variable in column 1 (column 2) is whether a person takes a first (repeat) migration trip to the United States in a given year; the estimates are based on a probit model. All models include indicators for demographic characteristics, prior migration experience and community characteristics as well as state and year dummy variables. Standard errors, adjusted for clustering at the individual level, are given in parentheses. Wealth indicators are standardized to mean 0 and standard deviation 1. All models include state and year dummy variables.

*$p < .05$; **$p < .01$; ***$p < .001$ (two-tailed tests)

Table 5 Estimated marginal effects of household wealth on remittances[a]

Variable	OLS (1)	Heckman (2)
Household Wealth		
Logarithm of value of household land in 2000 USD	0.08*	0.09*
	(0.04)	(0.04)
Logarithm of number of rooms in household properties	0.13**	0.12**
	(0.04)	(0.04)
Demographic Characteristics		
Age	0.05*	0.04
	(0.02)	(0.03)
Age squared / 100	–0.07*	–0.06
	(0.03)	(0.03)
Sex (male = 1)	0.65**	0.71**
	(0.21)	(0.26)
Some secondary education	–0.23*	–0.24*
	(0.10)	(0.11)
Complete secondary education	–0.07	–0.12
	(0.15)	(0.17)
Advanced education	0.05	0.03
	(0.24)	(0.24)
Spouse in Mexico?	0.09	0.06
	(0.10)	(0.11)
Spouse in the United States?	–0.66***	–0.62**
	(0.18)	(0.23)
Number of children under 18 (in 10s)	0.42*	0.50*
	(0.21)	(0.22)
Prior Migration Experience		
Trips by individual	0.00	0.01
	(0.01)	(0.01)
Parents U.S. migrants?	0.15	0.17
	(0.09)	(0.10)
Proportion ever migrated in community	–0.31	–0.19
	(0.38)	(0.43)
Community Characteristics		
Land inequality (Gini)	0.05	0.11
	(0.20)	(0.25)
Community ever had *ejido* land?	–0.29	–0.29
	(0.16)	(0.15)
Average rainfall to state in past 3 years (in mm)	0.00	0.01
	(0.04)	(0.04)
Distance to the U.S. border (in 100 km)	0.63**	0.64*
	(0.24)	(0.27)

Table 5 (continued)

Variable	OLS (1)	Heckman (2)
Distance squared	–4.83**	–4.91*
	(1.73)	(1.92)
Migrant Characteristics		
Family paid for coyote fees?	0.18	0.20
	(0.12)	(0.12)
Have documentation in the United States?	–0.03	–0.06
	(0.10)	(0.11)
Years since migrated	–0.05***	–0.04**
	(0.01)	(0.02)
Monthly wages in destination in 2000 USD	0.38***	0.42***
	(0.06)	(0.07)
Migrant Destination in the United States		
Midwest	–0.30	–0.32
	(0.23)	(0.23)
South	–0.30	–0.291
	(0.22)	(0.205)
West	–0.33	–0.31
	(0.22)	(0.20)
State and Year Indicators	Yes	Yes
ρ	—	.05
		(0.08)
N	3,180	478,294
R^2	0.13	—

[a]The dependent variable is the logarithm of monthly remittance migrant sent on his or her last trip, and the estimates are OLS coefficients. In the second column, the specification is a Heckman two-stage model of migration and remittances, where the exclusion restriction is the interaction between distance and proportion ever migrated in a community. It is estimated via maximum likelihood. Standard errors are given in parentheses. Wealth indicators are standardized to a mean of 0 and a standard deviation of 1.

*$p < .05$; **$p < .01$; ***$p < .001$ (two-tailed tests)

The selectivity-corrected Heckman model estimates indicate that the amount of remittances sent by a migrant is strongly related to household land and properties. A 1 standard deviation increase in the logarithm of land value and number of properties above the mean increases the logarithm of remittances by 0.09 and 0.12, respectively. A migrant in an average wealth household sending $1,000 per month would send an additional $89 if household land increased by 1 standard deviation, all else equal. A commensurate increase in household properties would bring an additional $130 to the migrant-sending household. The OLS estimates in the first column are very similar.

The amount of remittances decreases with a migrant's education. Men remit more than women, and the difference is larger in the Heckman estimates, which account for men's higher propensity to migrate. Migrants with spouses in destination remit less in the OLS model, an effect that is smaller in the Heckman estimate. In both models, migrants with children send more remittances; and the longer migrants stay in the destination, the less remittances they send, attributable to a weakening of ties to origin household. Expectedly, migrants earning higher wages in destination send more remittances.

The fact that the Heckman and OLS estimates are almost identical suggests that the unobserved factors influencing migration do not significantly alter the effect of the observed factors on remittances. The insignificant correlation coefficient between the errors of the migration and remittance equations ($\rho = .05$) also supports this conclusion. Thus, researchers estimating a model of remittances in the MMP data can confidently ignore migrant selectivity, given that their intended inference is about migrants only.

To summarize, the results from the migration models establish that wealth selectivity varies depending on the individual's migration experience and the community's migration prevalence. By jointly considering both patterns, this study qualifies some of the findings in prior work. Specifically, like Mines and Massey (1985) and Jones (1995), we show that repeat migrants belong to wealthy households. Considering the insights from Stark et al. (1986) and McKenzie and Rapoport (2007), however, we show that this pattern holds in only high-migration prevalence communities. In additional models of remittance behavior, we show that higher amounts of funds reach wealthier households. In combination, these results suggest that repeat migration and remittances may be mechanisms for wealth accumulation. Similar to Jones (1995), the results may also imply a potentially growing disparity between households with migrants and those without them, especially in communities with high migration prevalence. We now present an additional analysis to examine these implications.

Implications for Inequality

We employ a descriptive analysis to trace the changes in the wealth distribution in the 119 Mexican communities over time. Similar to the analyses in Table 4, we divide the communities into two roughly equally sized groups, based on the proportion of individuals who have ever migrated by the survey year. Each group contains about 60 communities that share similar migration levels.

Figure 1 provides a detailed graphical presentation of the changes in the migrant composition, remittance patterns, and distribution of wealth and inequality from 1975 to 1995.[7] The top and bottom panels correspond to high- and low-migration communities, respectively. The panels in the first column display the percentage of first-time and repeat migrants over time. In the low-migration group (panel 1b), the migrant population contains about equal shares of first-time and

[7] Communities were surveyed in different years by the MMP; therefore, our sample contains a different number of communities in each year. The number of communities is 119 in 1975, drops to 85 in 1995, and then drops further to 48 by 2000. Therefore, we restrict this analysis to the 1975–1995 period, during which the majority of the communities are observed consistently.

repeat migrants; in the high-migration group (panel 1a), it comprises mostly repeat migrants.

Prior analyses showed that first-time migrants are likely to come from poor households and that repeat migrants originate from relatively wealthy households. This differential selectivity carries implications for how remittances will affect the overall inequality. That is, in the low-migration communities, first and repeat-migrants each make up about one-half of the migrant population. Hence, the equalizing effects of remittances sent to poor households by first-time migrants can cancel the inequality-inducing effects of remittances sent to wealthier households by repeat migrants. In the high-migration communities, by contrast, repeat migrants make up a larger share of the migrant population than first-time migrants. Then, the inequality-inducing effects of remittances by repeat migrants will overwhelm the equalizing effects of remittances by first-time migrants. This expectation rests on one crucial assumption, however: repeat migrants send remittances in similar (or greater) amounts compared with first-time migrants.

To check this assumption empirically, the panels in column 2 of Fig. 1 show the average monthly remittances (USD per capita) sent by first-time and repeat migrants, pooled over five-year periods. (Because remittance information is recorded for a migrant's last trip alone, there are few observations per year.) In the pool of high-migration communities (panel 2a), remittances per capita increase over time, at a higher rate than the increase in the percentage of migrants (shown in panel 1a), and come mostly from repeat migrants as opposed to first-time migrants. By contrast, in the low-migration villages (panel 2b), remittances are much lower and are equally likely to come from migrants on their first or repeat trips. Separate analysis shows that in all villages combined, first-time migrants send \$469, on average, compared with \$595 sent by repeat migrants. This difference (significant at the .001 level) may be attributed to the higher earning potential of repeat migrants afforded by prior experience in destination.[8]

Given that the same individuals migrate repeatedly and continue to send remittances in the high-migration communities, households with migrants are likely to accumulate wealth quickly. The panels in column 3 compare the average wealth (number of rooms in properties) among nonmigrants, first-time migrants, and repeat migrants.[9] In high-migration communities (panel 3a), households with repeat migrants own (on average) three rooms, a significantly higher number than the 2.5 rooms owned by households of nonmigrants and first-time migrants. The differences are negligible in low-migration communities (panel 3b), where an average household, regardless of its migration status, owns about 2.5 rooms; this figure remains constant over time.

[8] The estimates in Table 5 show that remittances decrease by 6 % per year that a migrant spends in destination. These estimates control for earnings differences among migrants, and therefore are not inconsistent with the raw comparisons presented here.

[9] Because of the retrospective nature of the data, older—and consequently wealthier—individuals are observed in later years. To assure that the same age group is compared across time, we restrict the analysis to 25- to 45-year-olds in each year.

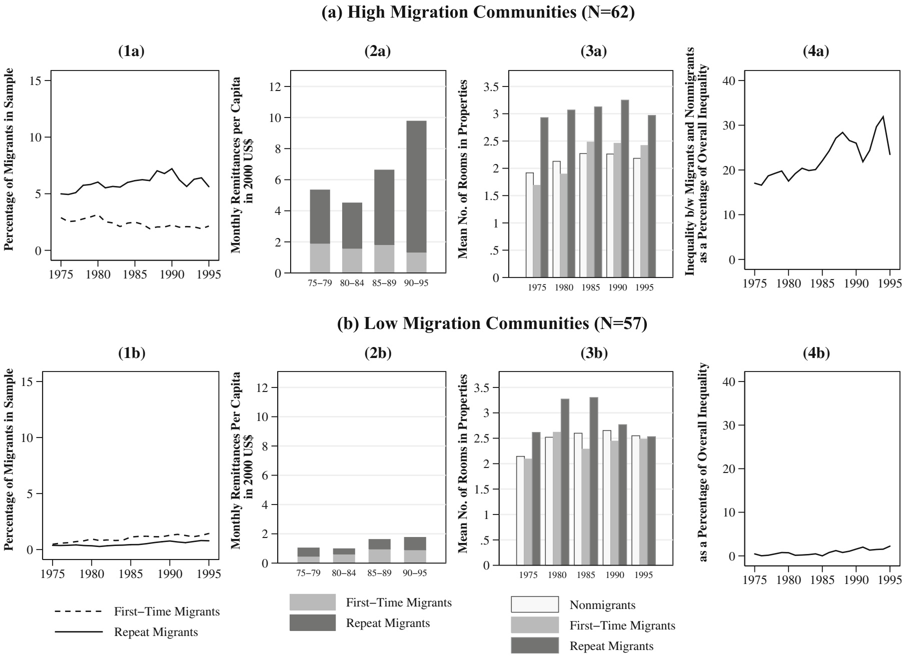

Fig. 1 Changes in migrant composition, remittance patterns, wealth distribution and inequality in high- vs. low-migration communities in the MMP (1975–1995)

These patterns provide further evidence that migration is a mechanism for wealth accumulation and imply dramatic changes in the distribution of wealth in communities with high levels of migration. To isolate the changes in wealth inequality attributable to migration and remittance flows, the panels in column 4 show the inequality in the number of properties owned *between* migrant and nonmigrant households as a percentage of total inequality (measured with the Gini coefficient).

In the low-migration communities (panel 4b), the inequality attributable to differences between migrants and nonmigrants is negligible and stable over time. By contrast, in communities with high levels of migration (panel 4a), the inequality between migrants and nonmigrants increases dramatically over time. From 1975 to 1995, the share of inequality attributable to the wealth gap between migrants and nonmigrants increases from 0.05 to almost 0.15.

These results are not informative of the overall trends in wealth inequality, which may change because of unobserved contextual factors or idiosyncratic economic shocks. Yet, the results suggest that between 1975 and 1995, migration and remittance flows may be associated with an increasing divide between households that send migrants to the United States and those that do not, especially in the MMP communities with a high migration prevalence.

Conclusion

In a period when inequalities between countries have reached a "great plateau," understanding the disparities within countries has become crucial to predict future trends in global inequality (Firebaugh 1999, 2000). Despite their growing magnitude and importance for the developing regions of the world, remittance flows have not been considered as an integral component of within-country inequalities. This study focused on the largest contemporary migration stream in the world—between Mexico and the United States—that generates the largest remittance flows to Latin America, a region with one of the highest levels of economic inequality in the world.

To explore the distributional impact of migration-remittance flows in the migrant-sending communities of Mexico, we studied how individuals' wealth status is associated with their propensity to migrate and remit. Using MMP data from about 18,000 individuals in 119 communities from 1965 to 2008, we first investigated the wealth selectivity of migrants. Prior work suggested that the selectivity would vary by the migration prevalence of the community or the prior migration experience of the individual. Investigating both patterns, we found that first-time migrants in low-prevalence communities originate from poor households (with an average $3,305 in land and 2.1 rooms in properties), and repeat migrants in high-prevalence communities belong to wealthy households (with an average $11,124 in land and 3.2 rooms in properties). Subsequently, we estimated an integrated statistical model, which treated migration as a mechanism for selection in a Heckman specification of remittances, and showed a higher amount of remittances reaching wealthier households. Based on these results, we suggested that repeat migration and remittances might be mechanisms for wealth accumulation. Using descriptive analyses, we further associated these mechanisms with growing wealth disparities between migrant and nonmigrants households, especially in high-migration-prevalence communities.

These results united the findings from two lines of prior research. First, in their seminal work, Stark et al. (1986) suggested that inequality in a community would initially increase because of the migration of the wealthy but would eventually decline as migration gained prevalence and became a less-selective endeavor. Second, in their case studies of Mexican communities, Mines and Massey (1985) and Jones (1995) found that migrants made multiple trips, sent continued remittances, and accumulated wealth over time. This recursive pattern led to an increasing concentration of wealth among migrants and a growing disparity between migrants and nonmigrants.

This study considered these two patterns jointly and identified the scope conditions for some of the prior findings. Similar to Mines and Massey (1985), for example, we found that migrant households accumulate wealth over repeat migration trips. We also observed an increasing wealth disparity between migrant and nonmigrant households. By studying low- and high-migration-prevalence communities separately as Stark et al. (1986) recommended, however, we discovered that these patterns hold only in high-migration-prevalence communities.

Our statistical and descriptive analysis focused on identifying the potential effect of migration and remittance flows on the wealth inequality between migrant and nonmigrant households in 119 communities. We did not consider the impact of these flows on the overall wealth inequality in a community or on the wealth inequality between communities. Prior research showed the sensitivity of inequality trends to the scale of analysis. Jones (1998), for example, found that migration and remittance flows increased interhousehold inequality in four Mexican communities but decreased the inequality between these communities and urban centers. Lozano (2007) similarly observed varying effects of remittances in rural and urban regions. Our study did not investigate such differential effects. Our study also did not consider the multiplier effects of remittances. As numerous studies show, migrants' remittances may increase expenditures in the local economy and create new employment opportunities for both migrants and nonmigrants (Adams 1998; Cohen 1999; Cohen and Rodriguez 2005; Conway and Cohen 1998; Durand 1994; Durand et al. 1996b; Jones 1995; Massey and Parrado 1998; Smith 1998; Taylor et al. 1996; Woodruff and Zenteno 2007). These indirect effects, if taken into account, might alter our conclusions about how remittances shape the wealth inequality between migrants and nonmigrants in the MMP communities.

Future work can address this limitation and study both the direct and indirect effects of migration and remittance flows on inequality, and at various scales of analysis. Researchers can also use a longitudinal research design to investigate trends in inequality and specifically explore individuals' migration, remittance, and wealth trajectories over time. This approach was not possible here because the MMP data recorded only remittances during the last migration trip. Finally, in the Mexican setting, future studies can investigate remittances from all migrants, not just the household heads measured in the MMP, using different data sets (e.g., the ENADID, the national demographic dynamics survey from Mexico).

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Appendix A: Testing the Validity of the Distance-Prevalence Interaction as an Instrument for Migration

The first column of Table 6 presents the marginal effects of distance by community migration prevalence estimated in a probit model of U.S. migration. Migration prevalence is defined as the proportion of individuals who ever migrated in a community. (The Pearson's correlation between distance and prevalence is only –.02.) Showing a nonlinear pattern, distance to border increases the odds of migrating, while its squared term decreases it. The effect of distance also depends on the migration prevalence in the community. For individuals in zero-migration-prevalence communities, for example, increasing the distance to border from 0 to 1,000 km decreases the probability of migrating approximately sevenfold. For individuals in medium-prevalence communities, where about 13 % of individuals have migrated, a similar increase in distance decreases the probability of migrating only threefold. As expected, the negative effect of distance is concentrated among individuals living in communities with low migration prevalence and suggests the validity of the interaction term for explaining variation in migration. As an alternative check for instrument validity, we tested for weak instruments by excluding the distance-prevalence interaction from the migration model. The resulting *F* statistic was 115.6 (*df* = 487,225), more than 10-fold the lower bound of 10 required to reject the hypothesis of weak instruments (Staiger and Stock 1997).

To provide evidence for instrument exogeneity, which is not directly testable, we examine the partial correlations between the instrument and migrants' U.S. wages, which are strongly correlated with remittances. If the instrument is associated with the unobserved determinants of remittances, we would expect it to be correlated with the observed measures, such as U.S. wages, as well. The regression results in the second model of Table 6 show that distance to border and migration prevalence in community have statistically insignificant associations with migrants' U.S. wages. Overall the evidence in Table 6 suggests the distance-prevalence interaction as a valid source of identification in the Heckman model.

Table 6 Estimated marginal effects of community distance to the U.S. border on migration and U.S. wages[a]

Variable	Migration to the United States (1)	Wages in the United States (2)
Distance to the U.S. Border (in 100 km)	0.005**	0.061
	(0.002)	(0.077)
Distance squared	–0.075***	–0.137
	(0.012)	(0.584)
Proportion ever-migrated in community	0.100***	–1.173
	(0.027)	(1.285)
Distance × Proportion ever migrated	–0.029**	0.353
	(0.009)	(0.399)
Distance squared × Proportion ever migrated	0.309***	–2.422
	(0.066)	(3.071)
N	487,305	3,059
Pseudo-R^2	.190	.201

[a]The dependent variable in column 1 is whether a person made a migration trip to the United States in a given year, and the estimates are based on a probit model. The dependent variable in column 2 is the logarithm of the wages in the United States in a given year, and the estimates are OLS coefficients. All models include indicators for demographic characteristics, prior migration experience and community characteristics as well as state and year dummies. The model in column 2 additionally includes indicators for migrant characteristics and destination. Standard errors, adjusted for clustering at the individual level, are given in parentheses.

**$p < .01$; ***$p < .001$ (two-tailed tests)

Appendix B: Distribution of Household Wealth and Remittances in Mexico

Figure 2 shows histograms for logarithms of land, properties, remittances, and savings (nonzero values only), which are approximately normal in distribution.

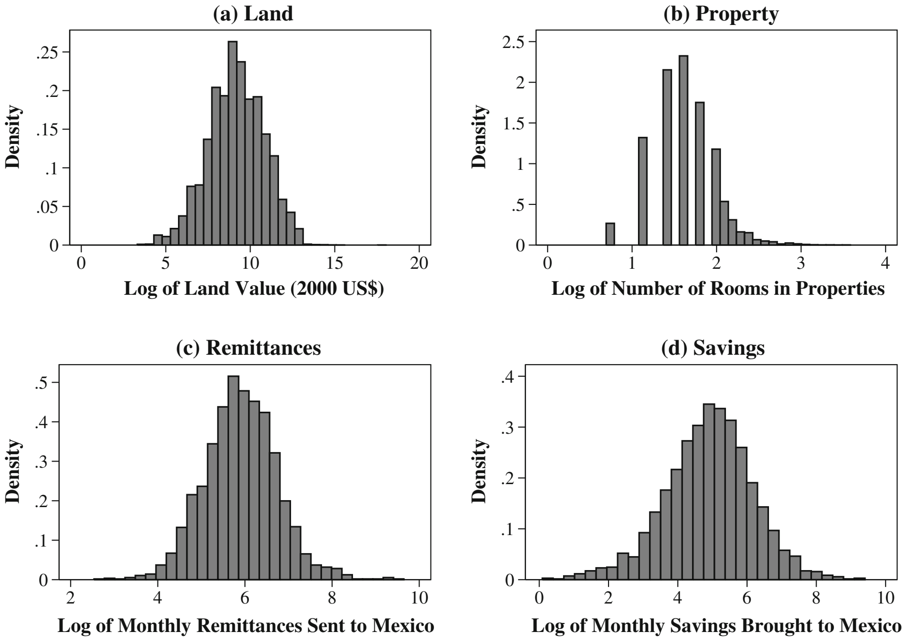

Fig. 2 Distribution of household assets and funds from migrants

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