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## Gender, Power, and Emigration From Mexico

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### Abstract

The prevailing model of migration in developing countries conceives of a risk-diversifying household in which members act as a single entity when making migration decisions. Ethnographic studies challenge this model by documenting gender hierarchy in family decisions and arguing that, in many contexts, men and women have differing views on the value of migration. We assess these perspectives using longitudinal survey data from Mexico. We show that Mexican households are heterogeneous in terms of women's decision-making authority and control over resources, and this variation predicts the subsequent emigration of their male partners to the United States. We then use data from a policy experiment to demonstrate that an exogenous increase in a woman's control over household resources decreases the probability that her spouse migrates. Our findings support the presence of important gender differences in how migration is valued. They also suggest that women's role in these decisions is inadvertently underrepresented in studies of migrant families. Staying is also a migration decision, and it is more likely in homes in which women have greater authority. From a policy perspective, the results suggest that Mexican migration is influenced not only by increases in household resources but also by which members of the household control them.

### Keywords

Migration; Gender; Bargaining power; NELM; Mexico

### Introduction

Mexico-U.S. migration has wide-reaching social, economic, and political implications for both the Mexican and U.S. populations (Arias 2013; Card 2009; FitzGerald 2009; Massey et al. 2002). Mexican migrants make up 5 % of the U.S. labor force and their remittances, reaching more than \$20 billion annually by the mid-2000s, provide between 2 % and 3 % of Mexican gross domestic product (GDP) (World Bank 2011). One-sixth of contemporary U.S. birth cohorts are children of Mexican-origin mothers (Martin et al. 2010), and Mexico faces care concerns for the rural elderly because of the departure of young adults (Antman 2012). The governments of both populations have struggled with the development of policy

to shape these flows. Policy, however, must be built on a meaningful understanding of why migration flows begin and why they persist.

At the most basic level, migration is described as an income-maximizing strategy. Migrants move in response to wage differences that trump the costs of movement over some time horizon (Lee 1966; Todaro 1976). A more sophisticated and widely embraced model of migration, often referred to as the New Economics of Labor Migration (NELM) model, depicts migration as a decision made by a household in order to minimize exposure to risk (Massey et al. 1998; Rosenzweig and Stark 1989; Stark and Bloom 1985). The NELM model has provided several critical insights for migration scholarship, including the contingent nature of migration decisions and the organization of economic transactions between migrants and nonmigrants (Taylor 1999). In Mexico, studies have found evidence consistent with the NELM model, such as the sensitivity of migration to credit opportunities and interest rates, the sharing of resources between households during periods of hardship, and the organization of family members across space such that risk diversification and income gains are maximized (Hamoudi 2008; Massey and Espinosa 1997; Sana and Massey 2005; Stark and Taylor 1989). Insurance and credit constraints are regularly described as a primary driver of emigration to the United States. (Massey 2005).

Nevertheless, the NELM model is not universally well regarded. Several decades of family, gender, and migration scholarship provide an alternative view of migration decision-making (Hondagneu-Sotelo 2003; King 2007). In Mexico, men have historically dominated international migration flows within the context of a patriarchal Mexican culture. Acknowledging gender-based power differences, scholars have argued that male emigration decisions are often made with marginal involvement of spouses and other family members (Donato et al. 2010; Hondagneu-Sotelo 1994). Ethnographic studies directly asking migrants and their spouses about household decision-making confirm that women have little say over their husbands' migration behavior (Broughton 2008; Cohen 2008; Hondagneu-Sotelo 1994; Kanaiaupuni 1995). Arguing that the costs and risks of male migration are disproportionately borne by women, King (2007) concluded that many Mexican women likely oppose male migration but lack the authority to prevent it.

The present study bridges these bodies of scholarship by implementing an empirical test of migration decision-making. The test allows us to conclusively assess the validity of the NELM model, in which the household acts as a single decision-making unit. In so doing, we incorporate intrahousehold power dynamics—an important aspect of migration decisions in ethnographic scholarship—into models of migration behavior. We also build on existing qualitative scholarship. In this work, gender differences in preferences are often inferred or assessed retrospectively. Moreover, research focusing on households with migrants may miss an important component of the decision-making process because not migrating also constitutes a choice that families make. We argue that this focus inadvertently downplays the role Mexican women have in migration decisions.

We arrive at this conclusion by conceptualizing the family as composed of members with distinct preferences and with varying amounts of bargaining power with which to assert these preferences (Folbre 1988; Thomas 1990). Whether migration decisions are arrived at

by a harmonious household or reached unilaterally by the male household head, both models share a common prediction: households where women have greater control over household resources should be no more or less likely to have a member migrate to the United States. We test this assertion with longitudinal household data from Mexico and check the robustness of our results using evaluation data from PROGRESA, a policy experiment that provides random variation in women's control over household resources. We find that as wives' control over household resources increases, their husbands are less likely to migrate.

The results suggest that it is an oversimplification to view household migration decisions as either completely harmonious or as an entirely male domain. Instead, household migration decisions are best characterized as contested. Men and women have different preferences, and each plays a role in the decision-making process, although the nature of these roles varies across households.

Understanding how migration decisions are made has a number of important implications. In addition to revealing how gendered hierarchies play out in household behavior, the evidence also sheds light on how, and to whom, policy aimed at shaping migration flows is best targeted. Migration is not only affected by increasing material resources, but may also depend on the organization of control over those resources within households.

### Household Models of Migration

Early migration theory relied on a cost-benefit framework to understand migration behavior from the perspective of individuals (Lee 1966; Todaro 1976). A major theoretical development, often referred to as the NELM model, rethought the migration decision as one made not by a lone individual but instead by a family or household maximizing the utility of the unit (Mincer 1978; Stark and Bloom 1985). Within this unit, resource allocation can be diversified in order to minimize exposure to risk. In less-developed locales, insurance markets for crop-related risks and unemployment may be weak or unavailable. A family member's remittances from a wage-based job in another region may provide a steady source of income should, for example, an agricultural season be poor (Massey et al. 1998).

This model has improved understanding of both migration behavior and the economic relationships between migrants and origin families. Because migration flows arise and persist in the NELM model as a response to insurance and capital access, the model helps explain why migration is not consistently responsive to spatial wage differences (e.g., Massey and Espinosa 1997). The model also underpins theories of migration as a response to relative deprivation (Stark 1984a), evidence of which can be found in studies spanning Asia, Europe, and Latin America (e.g., Bhandari 2004; Jennissen 2004; Stark and Taylor 1989). Additionally, the NELM is foundational for understanding when and why migrants remit to sending families. Whereas some models of family behavior posit altruistic exchanges (see Lillard and Willis 1997), the NELM suggests that remittances may also reflect an implicit contract between the migrant and the sending family financing the move (Stark 1984b; Stark and Lucas 1988; Vanwey 2004). Indeed, a number of studies have demonstrated that migrants pool resources with sending households to mitigate the impact of negative economic events (Hamoudi 2008; Rosenzweig and Stark 1989). Moreover,

remittances appear to be larger when family structures are better positioned to enforce an implicit financial contract (Sana and Massey 2005).

The contested component of this theory is the notion that migration can be characterized as a family decision. This criticism originates from several decades of strong ethnographic and anthropological scholarship on migrants and their families. The research identifies multiple axes of variation in the organization of household hierarchies, with a particular emphasis on gender (Grasmuck and Pessar 1991; Hondagneu-Sotelo 2003; Parreñas 2005; Segura and Zavella 2007). In settings where family life is characterized as patriarchal—typically with respect to norms about the distribution of household labor and the ownership of land and assets—both women and men report that men's migration decisions are made with only marginal input from others in the household (e.g., Boehm 2008; Hondagneu-Sotelo 1994; Kanaiapuni 1995).

Much of the research employing a more nuanced description of family migration explores how gender relations are reconstructed during and after the course of relocation (Hondagneu-Sotelo 2011; Parrado and Flippen 2005; Parrado, Flippen, and McQuiston 2005; Schmalzbauer 2009). Post-migration assessments provide critical insight about gender in Mexican families. However, these studies provide little direct evidence for the question at hand: whether migration decisions are harmonious and, if not, with whose preferences they align. Two design elements impair our ability to draw generalizable conclusions about the present question. First, studies about the reconstitution of gender relations in the context of migration primarily (and appropriately) follow families affected by migration.<sup>1</sup> As a result, this research rarely highlights decision-making in the remainder of Mexican households, where intrahousehold negotiations result in stable residence (i.e., no migration). A second issue arises when individuals are asked to retrospectively report on decision-making. Although some bargaining arrangements are explicit, others may be implicit and perhaps even unconscious. As a result, in addition to asking respondents about their migration preferences and how migration decisions are made—generating answers that may reflect internalized expectations about gender<sup>2</sup>—it is also useful to consider revealed dynamics of household decision-making.

### **An Inferential Approach to Understanding Household Decisions**

At least two approaches provide insight about the nature of family members' preferences and, thus, how household migration decisions are made. One approach involves measuring the returns that accrue to each household member from the migration process and assuming that each individual finds migration desirable if and only if the benefits exceed the costs. If wives do not benefit from their husbands' migration and also differentially bear its costs, it calls into question wives' support of a "family" decision to send a husband to migrate. King's (2007) summary of Mexican migration scholarship takes this approach. These calculations can be quite difficult, however, because some anticipated benefits may occur

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<sup>1</sup>See Parrado and Flippen (2005) for an important exception.

<sup>2</sup>For example, see Gutmann's (1996) discussion of the "contradictory consciousness" that men and women exhibit about gender in Mexico.

over a long time horizon (e.g., secondary schooling opportunities for children) or may be difficult to measure (e.g., separation from an abusive spouse).

An alternative approach draws on social science literature that focuses on power within relationships, bargaining, and intrahousehold resource allocation. This research has directly challenged the applicability of unitary household models, which assume that decisions are made at the household level (Brannen and Wilson 1987; Folbre 1988; Pahl 1983). Instead, household decisions depend on the distribution of power and the preferences of each individual with decision-making authority (Blumberg 1988; Lundberg and Pollack 1996; Thomas 1990). Within couples, power differences arise from several sources, including the amount of economic and social resources that individuals bring to the union, as well as alternative options if members leave.

The NELM model is typically depicted as resting on the assumption of a unitary household.<sup>3</sup> Thus, the NELM model and models that emphasize male dominance in decision-making provide radically different descriptions of the household. Yet, in the context of scholarship on intrahousehold bargaining, the models actually have an important similarity. If decisions are entirely harmonious, household outcomes are affected by a single set of preferences—that shared by household members. If decisions are made unilaterally by a male household head, household outcomes are also influenced by a single set of preferences—that of the household head. Both are consistent with a unitary model of household behavior. A straightforward test of these models becomes apparent: if decisions are best summarized with a single set of preferences, then *ceteris paribus*, variation in the distribution of household resources across household members will not predict household migration behavior.

Most qualitative migration research has described a contested decision between empowered men and disempowered women; few pieces have taken the extreme view that women have a nonexistent role in decision-making. A rejection of the unitary model would thus contradict both harmonious decision-making models and an extreme interpretation of the empowered male model: that is, unilateral decision-making. A rejection would instead lend support to research describing disagreement, negotiation, and bargaining (Conway and Cohen 1998; Hondagneu-Sotelo 1994; Kanaiaupuni 2000a).

Although the test of the unitary model appears straightforward, generating estimates with a valid interpretation is challenging. Measuring bargaining power is fraught with complication (England and Kilbourne 1990). Relative education and income may impact household bargaining power (via contributions to shared household resources or outside options in the marriage market), yet both are also a function of previous decisions, such as whom to marry and whether to work (Thomas 1990). Moreover, bargaining power may be heavily structured by factors outside the household, such as social networks or political institutions (Agarwal 1997).

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<sup>3</sup>Interestingly, Stark (1984b) proposed the addition of bargaining power to the NELM migration model three decades ago by arguing that power governs the enforceability of the funding/remittance contract generated between the sending family and the migrant. This discussion has been largely lost in application of the NELM model in contemporary migration research.

Studies testing models of household behavior thus have used two statistical methods to determine whether the relative authority of men and women impacts household outcomes. The first method uses determinants of bargaining power that are believed to be less causally entangled with the outcomes of interest; many studies have used the distribution of nonlabor income (Thomas 1990, 1994) or assets (Beegle et al. 2001). The second method investigates whether household outcomes change after shifts in the policy context that affect control over household resources or alter individuals' outside options (Agarwal 1997; Rangel 2006).

In this study, we use both approaches. Before turning to our methods, we discuss the literature on migration in Mexico, with an emphasis on the research that has led scholars to hypothesize that men and women have different preferences about family migration.

### Gender and Mexico-U.S. Migration

After the Bracero programs formalized temporary contract labor in the mid-twentieth century, Mexico-U.S. migration flows increased steadily. By 2005, nearly 500,000 migrants emigrated annually (Passel and Cohn 2009). Younger men dominated these flows, in part because of U.S. policy that favored conditions for male migrants (Boehm 2008; Donato et al. 2008). By 2005, 1 in 20 partnered women in Mexico had a spouse living in the United States (Nobles et al. 2015).

Gender differences in emigration are deeply integrated into understandings of both masculinity and adulthood in Mexico. In many communities, migration is culturally maintained as a male endeavor (Cohen et al. 2008), and in some communities is perceived as a male *responsibility* to support family (Boehm 2008; Broughton 2008; Hirsch 2003). Traveling alone with the purpose of securing financial resources is incompatible with local definitions of female propriety and caregiving. When women do migrate to the United States, they are more likely to follow spouses, parents, or siblings (Cerrutti and Massey 2001, Creighton and Riosmena 2013) often with the intent of relocation, rather than "sojourn" (Arenas et al. 2008, Hondagneu-Sotelo 1994). Outside of marriage, new movement among young single women increasingly challenges this characterization (see Donato et al. 2008, Woo and Mena 2002).

Unsurprisingly, women who stay in Mexico are deeply affected by emigration. The positive returns to a migrants' departure are potentially large; remittances may raise resources for the home, provide schooling opportunities for children (Conway and Cohen 1998; Goldring 2004; Sana 2008), and support needed infrastructure in these women's communities (Durand et al. 1996; Rose and Shaw 2008; Woodruff and Zenteno 2007). Yet, family separation may also be accompanied by a number of hardships. Spouses of emigrants experience anxiety about the migrant's safety and the family's stability (Aguilar-Morales et al. 2008; Frank & Wildsmith 2005; Salgado de Snyder 1993). Migration also shifts the distribution of household and community labor (Andrews 2014; Arias 2013). In many families, men manage finances, participate in and negotiate interaction with community institutions, and make decisions about children's education (Garcia and Oliveira 2005; Gutmann 1996). As a result, nonmigrant spouses often take on new responsibilities while raising children and working to keep the family emotionally connected across borders (Arias 2013; Boehm 2008; Dreby 2010; Kanaiaupuni 2000b).

For some women, these gains in autonomy are experienced as empowering (Hondagneu-Sotelo 1994; Martinez-Inglesias and Alarcón 2013; Torres et al. 2007). For others, handling conventionally male responsibilities may come at a social cost, particularly if these women live in communities where migration is less common (Boehm 2008; Kanaiaupuni 2000b). And in some cases, male influence over household decisions is maintained from abroad through phone calls, behavior monitoring via social networks, and threats of withdrawing remittances (Boehm 2008). Moreover, gains in autonomy are often reversed upon a spouse's return (Boehm 2008), and power hierarchies are occasionally reestablished through violence against women (Dreby 2010).

The experience for nonmigrant women is thus often summarized as “high-risk, high-reward” (King 2007). It is unsurprising, then, that ethnographic studies rarely observe household members with harmonious attitudes toward migration. Qualitative accounts of the decision-making process indicate that many men emigrate despite disappointment, resentment, and silent opposition from spouses (e.g., Broughton 2008; Cohen et al. 2008; Hondagneu-Sotelo 1994; Kanaiaupuni 2000a).<sup>4</sup>

Women's preferences concerning migration are almost certainly contingent on contextual factors (Conway and Cohen 1998). That is, the factors that shape the degree to which migration is a high-risk, high-reward strategy also influence women's expectations about the experience of—and returns to—spouses' departures. For example, U.S. migration varies considerably across Mexico. Some areas are longstanding sending regions, and migration is embedded into residents' conception of viable family arrangements (e.g., Broughton 2008; Kandel and Massey 2002). Because migration flows grow over time through social networks (Massey and Zenteno 1999), historic sending regions are also likely to have larger contemporary emigration flows. Migrants from these regions have access to larger networks of family and friends in the United States, reducing uncertainty about safety, employment, and living arrangements. Other areas, including parts of southern Mexico and urban centers, constitute much newer sending regions (Durand et al. 2001; Massey et al. 2010; Riosmena and Massey 2012). In places without an established history of U.S. migration, young adults are less likely to be socialized toward a future in which migration is an anticipated aspect of family life. In these communities, the departure of a spouse is nonnormative and potentially isolating; women are also less likely to have information about their spouse's whereabouts and well-being (Boehm 2008; Kanaiaupuni 2000b).

These community factors likely shape many facets of the decision-making process (Agarwal 1997), including female preferences about family migration, empowerment to engage in debates about migration behavior, and the ability to leverage outside options to improve one's power within the household.

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<sup>4</sup>Female migration, even when involving women following spouses, is also described as contested. Men have several motivations (some altruistic) for keeping the couple divided across borders (see Boehm 2008; Broughton 2008; Hondagneu-Sotelo 1994), whereas women, at least, initially, may seek family reunification and the opportunity for economic mobility themselves, although the reality of women's lives in the United States after joining spouses is rarely “emancipated” (Boehm 2008; Gijón Cruz and Morales 2004; Parrado and Flippen 2005; Parrado et al. 2005).

In the present study, we implement quantitative tests of these relationships with the goal of further integrating ethnographic scholarship and economic models of migration. These tests build on research that describes wide variation in the organization of power within Mexican households and communities (González de la Rocha 1994; Gutmann 1996; Hirsch 2003; Hondagneu-Sotelo 1994; Oropesa 1997; Segura and Zavella 2007).

## Approach

If variation in wives' control over resources predicts migration behavior, we will reject models of migration that describe family decisions either as harmonious or as unilateral. Control over resources matters only when household members do not share common preferences and the outcome of interest is a result of household bargaining (Beegle et al. 2001; Rubalcava et al. 2009; Thomas 1990, 1994). Finding no relationship between bargaining power and a household outcome has many possible interpretations; a significant and substantial effect, however, is possible only in the presence of differing preferences. We therefore look for an effect of resource control on migration outcomes in a nationally representative sample of Mexican households.

Next, to rule out the possibility of bias due to unobserved heterogeneity, we turn to data from the evaluation of a recent policy—PROGRESA—that increased Mexican women's control over shared household resources. PROGRESA (now *Oportunidades*) is the cornerstone of antipoverty policy in contemporary Mexico, providing aid to one in four households through conditional cash transfers. Two elements of the policy make it useful for understanding the relationship between women's household authority and migration. First, the cash transfers were allocated exclusively to women and were large relative to women's preexisting earnings (Parker et al. 2007). Second, because of federal resource constraints, the program was rolled out with random assignment across impoverished communities in Mexico from 1998 to 2000. As a result, the program provides an exogenous source of variation in women's control over household resources. Although making cash transfers to women does not guarantee that women will determine how they are allocated (Cornwall 2007), the qualitative evaluation of PROGRESA concluded that “women are benefiting from a new recognition of their importance in the family, new freedom of movement, and some increased confidence, awareness and knowledge, without paying a major price in terms of intrahousehold harmony” (Adato and Mindek 2000:xv). Other research has found consistent evidence that the program meaningfully shifted women's authority in household consumption decisions (Rubalcava et al. 2009).

## Method

A Prospective Look at Mexican Households: Mexican Family Life Survey The Mexican Family Life Survey (MxFLS) is a nationally representative socioeconomic household and community survey first fielded in 2002; members of 8,440 randomly sampled households in 150 randomly sampled localities in Mexico were interviewed. A second wave was fielded in 2005. More than 90 % of households were reinterviewed, including more than 90 % of individuals migrating to the United States (Rubalcava and Teruel 2008).



We analyze all couples with complete data in which both partners were residing in the household in 2002 and one member of the couple was the household head.<sup>5</sup> The resulting sample contains 4,950 couples and includes both formal marriages (83 %) and cohabiting unions (17 %). For ease of discussion, we refer to male and female members of couples as “husbands” and “wives,” respectively, regardless of union type.

The outcome measure of interest in this study is emigration between 2002 and 2005. Within couples, a number of migration outcomes are possible. These are documented in Table 1. Over this three-year period, 3.4 % of sample couples experienced a husband's U.S. migration. In 1 % of sample couples, a wife migrated to the United States.

Based on these patterns, we generate an outcome measure indicating whether the husband migrated to the United States at least once over the three-year period. For couples in which the wife subsequently joined him, the outcome is coded as 1.<sup>6</sup> For couples in which the wife moved without her husband, the outcome is coded as 0. Although women's solo movement to the United States would add important insight to the present discussion, only 19 partnered women moved alone, precluding a reliable analysis of these cases. We revisit this later.

In the MxFLS data, couples ( $c$ ) are nested within localities ( $l$ ). Because our sample includes only those couples in which one partner is the household head, household indicators are equivalent to couple indicators. We use logistic regression to model the probability that a husband will emigrate to the United States between 2002 and 2005 ( $M_c$ ) as a function of various determinants of women's bargaining status in the union ( $B_c$ ), along with couple-level ( $C_c$ ) and locality-level ( $L_l$ ) controls that may influence both the probability of migration and the relative status of men and women in the household. All regressors are measured in 2002, establishing a logical time-ordering to the relationship. Standard errors are clustered at the largest level of nonindependence, the locality.

$$\ln \left( \frac{M_{c(2005)}}{1 - M_{c(2005)}} \right) = \alpha + \beta_1 B_{c(2002)} + \beta_n C'_{c(2002)} + \beta_m L'_l(2002). \quad (1)$$

A significant and meaningfully sized coefficient  $\beta_1$  indicates that the migration of men varies with the distribution of power in the household. If the coefficient represents a true causal effect of bargaining power on migration outcomes, then we will reject the unitary model of household decision-making—or a model in which decisions about migration are either (1) harmonious or (2) determined by the male household head.

### Measures of Bargaining Status

Following previous research, we use two economic measures that influence women's control over household resources: asset ownership and nonlabor income. Respondents are asked to

<sup>5</sup>Seven percent of couples were excluded because of missing data on bargaining power measures. We tested whether husbands in these couples differentially emigrated: they did not. Another 9 % of cases had to be excluded because of incomplete information in the second wave of the MxFLS. Lost-to-follow up cases largely occurred when the entire household relocated domestically (Velasquez et al. 2010). An additional 4 % of cases were missing values on other covariates.

<sup>6</sup>It is also possible to differentiate male migrants whose spouses do not join them during the three-year period. We find statistically indistinguishable estimates from those presented here and thus do not present these separately.

report who in the household would receive money from the sale of existing assets. Individuals are assumed to control those assets for which they would receive the proceeds. We regress migration on the proportion of the household's asset value under the control of the wife. To ensure that this measure does not act as a proxy for wealth, we control for the total value of household assets. We similarly measure household nonlabor income and the proportion of nonlabor income earned or received by women.<sup>7</sup>

We also use information about decision-making authority collected in a novel data module in the MxFLS. Members of couples are asked how a series of household decisions are made, including employment, expenditures, food provision, and financial exchanges with extended family. Respondents list all members of the household who contribute to these decisions. We create a five-item index capturing the wife's perception of her contribution to decisions about (1) large expenditures, (2) her employment, (3) her husband's employment, (4) financial transfers to her family, and (5) financial transfers to his family. A 0 indicates that the wife reports no contribution, and a 5 indicates that she contributes to all five decisions. We create a second index for her spouse. Akin to the resource variables, we measure the proportion of total decisions made by wives while controlling for the sum of wives' and husbands' indices.

Figure 1 graphs the difference between husbands' decision-making index values and wives' decision-making index values across couples. We observe significant variation in relative decision-making authority across Mexican couples. On average, husbands' contribute to more of these "major" household decisions than do wives. Yet, the modal couple is one in which partners contribute equally to these major household decisions. In one of every five couples, wives contribute to more of these major decisions than do their spouses.

Finally, we generate a fourth set of estimates that integrates information across the three measures of resource control. We assess whether husbands own a larger share of assets, receive more nonlabor income, and make more major household decisions relative to their wives. We generate an index variable, taking a value of 0–3, for the number of domains (assets, nonlabor income, and household decision-making) in which husband's values exceed that of their wives.

### Control Measures

Even in the absence of household bargaining, household resources may impact the probability of migration and may also be correlated with measures of bargaining power. We control for resources by measuring household-level per capita monthly expenditures. Expenditures are preferred to income because of the seasonality of income for the agricultural households in the sample (see Deaton 1997). Thus, we do not control for income, although the results are robust to its inclusion (available from authors).<sup>8</sup>

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<sup>7</sup>In other studies, nonlabor income often includes financial transfers, which include remittances in the Mexican context. Because remittances are fundamentally intertwined with migration decisions, we limit the nonlabor income measure to include income from government programs only.

<sup>8</sup>Similarly, labor force participation is likely endogenous and is typically excluded from tests of the unitary household model (see Thomas 1990). Although we exclude measures of labor force participation, results are also robust to their inclusion.

The level of resources in the locality may shape both the distribution of bargaining power within households and the magnitude of emigration flows, so we also control for average per capita household expenditures at the locality level. Both household-level and locality-level expenditure measures are logged to adjust for their skewed distributions.

Given the focus of the NELM model on incomplete credit markets, we measure perceived access to credit; the dichotomous measure indicates whether any member of the household has access to a credit card or loan from a bank, credit association, or other lender.

To capture demographic characteristics that may predict both relative bargaining power and migration, we control for the age of the husband and wife. These are flexibly specified as a set of dichotomous variables: 15–24 years, 25–34 years, 35–49 years, and 50 years or older. Education of both spouses is specified similarly, with dichotomous variables indicating no formal schooling, some to completed primary (1–6 years), some secondary (7–11 years), and completed secondary or greater (12+ years). We also measure the number of children living in the household and the number of years the couple has been in a union. We include an indicator of urban status: localities comprising 2,500 or more residents. Descriptive statistics are presented in Table 1.

Finally, we capture variation in the quality of the information provided—or interview bias—by including a dichotomous measure indicating whether husbands and wives were interviewed in one another's presence. In those cases where the husband could not be interviewed (14.8 % of sample couples), we use a dichotomous variable to indicate this and substitute the wife's report of her husband's information. The analysis is robust to the exclusion of these cases.

### **Threats to Inference: Previous Migration Experience**

If the measures of power employed in Eq. (1) are themselves influenced by past migration (see Basu 2006; Martinez-Inglesias and Alarcón 2013), then it is possible that our estimates will be biased due to reverse causality. For example, if previous migration experience is highly predictive of future migration experience among men and also increases women's status within the couple, then estimates of the impact of women's power on spousal migration would be biased toward 0. We reestimate Eq. (1) for only those couples in which neither member had previously migrated to the United States. These regressions can be interpreted as modeling decision-making about a couple's first U.S. migration. Given the larger role of women in domestic migration in Mexico (Curran and Rivero-Fuentes 2003), we also introduce controls to these specifications for both partners' previous experience with domestic migration.

### **Contextual Variation: The Magnitude of Migration Flows**

Many contextual features may shape decision-making about household migration beyond resource control within the household. Regional variation in the size and history of movement to the United States is undoubtedly important to this process (Curran & Rivero-Fuentes 2003; Massey and Espinosa 1997), in part because migration networks may shape preferences about migration and the role of bargaining power in structuring household decisions (Agarwal 1997; Creighton and Riosmena 2013). We thus measure the local

density of family migration ties by calculating the proportion of respondents in each community with any family in the United States. The mean in MxFLS communities on this measure is .33. We use this measure to identify high-migrant areas, defined here as communities in which more than one-third of residents have family in the United States.

Unsurprisingly, MxFLS communities in which more than one-third of community members have family in the United States are clustered in Jalisco, Michoacán, and Guanajuato—Mexican states with the longest U.S. migration history (Durand et al. 2001; Massey et al. 2010). Given the extensive scholarship on migration-related capital (e.g., Broughton 2008; Kandel and Massey 2002), we expect those living in the context of longstanding U.S. migration flows to be less averse to family migration.

**Evaluation Data From a Policy Experiment: PROGRESA**—The empirical value of the test of the unitary model rests on the assumption that it identifies a causal effect of a shift in bargaining power on migration outcomes. Despite the use of longitudinal data, care in selection of bargaining power indicators, and controls for possible confounding factors, Eq. (1) may still face threats from omitted variable bias. As a robustness check, we take advantage of a recent anti-poverty policy providing an external and arguably exogenous source of variation in women's bargaining power.

Existing research argues that PROGRESA, by providing transfers to the poor, affected Mexican migration via an increase in total household resources (Angelucci 2015; Stecklov et al. 2005). Another possible mechanism may also be operating, given that these financial transfers were targeted to women. In addition to increasing total household resources, PROGRESA had the impact of increasing female bargaining power (Adato and Mindek 2000; Rubalcava et al. 2009). It is our aim to separately identify the impact of resources and the shift in bargaining power on migration decisions.

In 1997, PROGRESA recipients were selected from 506 impoverished communities in Mexico. Because of federal resource constraints, the transfer program was initiated over several years. Nearly two-thirds of the 506 communities were randomly sampled to receive cash transfers beginning in 1998 (“treatment communities”); the other one-third did not receive benefits until 2000 and are thus referred to as “control communities.” After households were selected, monthly cash transfers were made available to the female member of the couple heading the household, conditional on a series of household behaviors, including children's school enrollment and adult visits to health clinics. Importantly, the size of these transfers was determined by household demographics at the time of enrollment in the program.

After conducting a baseline survey in 1997 to identify villages and households that were eligible for treatment, PROGRESA began fielding an evaluation survey to assess the impact of the conditional cash transfers. This survey, known as the *Encuesta Evaluation de los Hogares* (ENCEL), was collected every six months through 2000 in both the treatment and control communities. For this analysis, we use three waves of the ENCEL data, collected in the fall of 1998, 1999, and 2000.

The goal of this robustness check is to examine the impact of women's control over a larger proportion of household resources on migration. We are thus looking for a relationship that is independent from the effect of changing total household resources on migration. To do so, we follow the methodology of Rubalcava et al. (2009), which examines the impact of women's control over household resources on household consumption.

Our sample consists of 13,915 couple-headed households ( $h$ ) that were eligible for PROGRESA receipt and living in either a treatment or control community. We pool observations for these households across three waves of follow-up ( $t = \text{Fall 1998, Fall 1999, Fall 2000}$ ). We estimate Eq. (2), a fixed-effect logistic regression that uses administrative data on cash transfers ( $T_{ct}$ ) allocated in the six months prior to the survey to predict the migration of the male household head.

$$\ln\left(\frac{M_{ct}}{1 - M_{ct}}\right) = \alpha + \beta_1 T_{ct} + \beta_m E'_{ct} + \beta_n C'_{ct} + \beta_o D'_{ct} + \mu_l + \tau_t. \quad (2)$$

To ensure that the transfer coefficient ( $\beta_1$ ) does not capture the effect of PROGRESA on overall household resources, we flexibly control for (log) per capita household expenditures using a spline with knots at the 25th and 75th percentile ( $E_{ct}$ ).<sup>9</sup> Because the size of the cash transfer depends on household structure, we carefully control for household composition ( $C_{ct}$ ) to rule out the possibility that transfers act as a proxy for household demographics. This is done using (log) household size and counts of the number of men and women in the following age categories: 0–5, 6–11, 12–25, 26–45, and 46+. We also control for the age and education level of the male and female household head, treatment status, and characteristics of the physical dwelling ( $D_{ct}$ )—namely, dichotomous variables indicating whether the dwelling has concrete floors, concrete roof, indoor plumbing, and electricity. Descriptive statistics are available in Online Resource 1, Table S1. Finally, we include fixed effects for the community ( $\mu_l$ ) to sweep out time-invariant regional variation, and we include survey wave ( $\tau_t$ ) to control for region-invariant period changes.

In the presence of these controls, the estimate of  $\beta_1$  can be interpreted as the effect of additional resources under wives' control on the probability of migration.<sup>10</sup>

In the ENCEL data, a male head is considered a migrant if he lived outside the household at the time of the survey (for a reason aside from separation or divorce). Because of this data limitation, we are unable to restrict our attention to those who migrated to the United States. Given existing empirical evidence about women's larger role in (and, thus, familiarity with) domestic migration flows (Cerrutti and Massey 2001; Curran and Rivero-Fuentes 2003), we expect results from this model to understate the importance of resource control versus an estimate based on U.S. migration alone.

Pooling observations across all three waves, couples in our sample receive an average of 552 pesos ( $SD = 743$ ) of PROGRESA transfer in the six months prior to the survey wave, or

<sup>9</sup>The results are also robust to the addition of a time-varying control of household labor *income* to the regression.

<sup>10</sup>Importantly, this test is limited to estimating the effect of improving women's status in the household. We cannot estimate a symmetric test for the effects of improving men's relative status (and potentially reducing women's relative status) using the PROGRESA experiment.

1,024 pesos ( $SD = 734$ ) among couples receiving a transfer. Well more than one-half (64 %) of the couples experience a change in the magnitude of the transfer over the three-year period, with 62 % experiencing at least one increase and 14 % experiencing at least one decrease. A husband migrated at least once in 6 % of couples.

## Results

### Bargaining Power and Migration Outcomes

Table 2 presents odds ratios from a set of logistic regressions predicting husbands' migration to the United States between 2002 and 2005. In column 1, we examine control of assets. We observe a statistically significant negative relationship between wives' control over assets and emigration. Holding total household assets constant, the spouses of wives with more control over household assets had lower odds of U.S. migration between 2002 and 2005. The odds of migration among men married to wives who controlled all household assets is about 42 % lower (equivalent to a 35 % reduction in the probability of migration) than that estimated among men married to wives who controlled none.

Column 2 measures control over household nonlabor income. As with assets, we observe a negative relationship between wives' control over nonlabor income and the odds of emigration, although this effect is imprecisely estimated. In column 3, we examine couples' self-reported decision-making authority. The relationship between authority and the odds of emigration is negative and statistically significant. The odds of migration among men married to women who report having full control over major household decisions is 65 % lower relative to couples in which she contributes to none of these decisions. Finally, when we use all three domains (assets, nonlabor income, decision-making) to classify households in column 4, we observe a positive association between the number of domains in which his values exceed hers and the probability that he emigrates (29 % higher odds per domain).

As in other studies (Lindstrom and Giurguli-Saucedo 2007; Massey 2005), the odds of migration is highly patterned by the age of both husband and wife. Consistent with existing research on the education patterning of migration (e.g., Feliciano 2005), we do not find that emigrants disproportionately come from either tail of the education distribution. In addition, the well-documented urban and rural differences in the odds of migration (e.g., Riosmena and Massey 2012; Massey et al. 2010) can be observed here. In contrast to the predictions of the NELM model, access to credit does *not* deter migration.

If migration affects relative bargaining power within the household, the results in Table 2 may be indicative of reverse causality. Therefore, in Table 3 we repeat the analysis shown in Table 2 for a subset of the sample: those 4,717 couples in which neither member had previously migrated to the United States. The findings are statistically similar to those obtained for the entire sample, although the odds ratios are estimated with less precision in the smaller subsample. We also find that men partnered with women who have previous internal migration experience are less likely to move to the United States, although the inclusion of this control does not reduce the coefficients estimated on the bargaining power measures. We conclude, then, that although previous decisions about internal or

international migration may shift bargaining power within couples, this process is not driving the associations shown in Table 2.

We next test for differences in these associations across community-level measures of the local migration context (Table 4). Doing so reveals that the association between bargaining power—as measured by assets, nonlabor income, and decision-making authority—and spousal emigration is primarily large and statistically significant in communities with smaller Mexico-U.S. migration flows. By contrast, we see weaker evidence of a correlation between women's control over resources and husbands' emigration in communities with large flows to the United States, although the odds ratios are not statistically different from each other. The estimates in column 4, which uses all three bargaining power measures to classify households, are quite similar between the two types of communities. The results are suggestive, then, that the community context shapes the nature of migration decision-making in the household. We return to this observation in the final section of the study.

Consistent with findings elsewhere (Massey and Espinosa 1997; Palloni et al. 2001), husbands are much more likely to migrate in communities with large migration networks, underscoring the important role of migration capital in shaping the decision to move.

In sum, we find evidence of significant correlations between women's bargaining power—as measured by control over household resources and decision-making authority—and the emigration of her spouse, with the possible exception of communities in which migration flows are large. We thus conclude that common preferences toward migration in Mexico are not well supported by the data. Our results are also inconsistent with a model in which men make unilateral migration decisions: emigration is less likely in households where women have greater bargaining power.

Importantly, these conclusions hinge on the assumption that we have not omitted factors that predict both relative bargaining power and the likelihood of emigration. As such, we next examine migration outcomes following an exogenous shift in women's control over household resources.

### Causal Inference: Results From a Policy Experiment

Table 5 presents odds ratios from fixed-effect logistic regressions predicting husbands' migration. We are particularly interested in the PROGRESA transfer odds ratio because this transfer was allocated to women. In the presence of controls for changes to *total* household resources, the measure captures an exogenous increase in *women's control over household resources*.<sup>11</sup> We observe a significant inverse relationship between the size of the transfer and the probability of emigration. Holding total household resources constant, control over an additional 1,000 pesos reduces the odds that the husband migrates by 10.3 %.

<sup>11</sup>PROGRESA may also influence migration decisions because the transfer is conditional on children attending school or because adult women must be present in the village to collect the payment (Parker et al. 2007; Stecklov et al. 2005). Because our analysis focuses on migration of the male head of household, these conditions are unlikely to be the primary mechanism here. A robustness check limiting the analysis to households in which all age-eligible children were enrolled in school prior to initiation of the transfers (see Rubalcava et al. 2009) generates an estimate of 0.829, further suggesting that the results are not driven by this conditionality.

We find that an increase in *total* household resources makes it less likely that husbands will migrate for households below the 25th percentile of household resources, but makes it more likely for households above the 75th percentile. This nonlinearity is similar to the pattern that we estimate for the MxFLS sample. Men from larger households and from households with electricity are more likely to migrate. We also observe a higher probability of migration in 2000, relative to 1999 and 1998 among ENCEL households.

To ensure the robustness of these findings, we reestimate the model using subsamples of the data in the second and third columns of Table 5. One potential concern is that despite randomization, there may be systematic differences between treatment and control villages that bias our results. To address this concern, we repeat our analysis using only those respondents living in treatment villages (column 2). For this subsample, because we control for household size and composition, much of the remaining variation in the size of the transfer arises from administrative delays and is consequently unlikely to be correlated with household characteristics that impact the probability of migration. Another possible concern is that attrition may be driving our results, so we further refine our sample to include only treatment households that were successfully interviewed in all three survey waves (column 3). The results are robust across both of these alternative specifications. We conclude, then, that PROGRESA appears to have exerted an effect on male migration not only through household resource improvement but also via a shift in female control over resources.

## Discussion

Scholars have long contended that migration is an important means of navigating risk in resource-constrained settings. However, this oft-referenced model of migration behavior—termed the New Economics of Labor Migration (NELM)—has been energetically rejected by scholars arguing that women are often excluded from the decision-making process driving largely male migration flows (Hondagneu-Sotelo 1994, 2003; King 2007). In this study, we use data from two longitudinal studies in Mexico and find support for a nuanced model of household behavior. We show that Mexican households are heterogeneous in terms of women's reported decision-making authority and control over resources. Husbands of women with more bargaining power are less likely to migrate. We confirm the causal nature of this relationship using an exogenous shift in women's relative bargaining power generated by a conditional cash transfer initiative in Mexico. The results provide quantitative, population-level support for research describing a contested decision-making process; the findings are consistent with past scholarship arguing that partnered women, on average, prefer for their spouses to stay.

We find weaker evidence of an association in communities with larger and longstanding migration flows. It may be that migration is more normative in these communities, and thus family expectations and community social support networks are in place that help nonmigrant wives navigate their husbands' departures. In the remaining households, those residing in areas where U.S. migration is less well established, women with influence within the household appear to use this influence to discourage the migration of their spouses.



The results have several implications. The findings suggest a reconsideration of NELM models that fail to consider bargaining within the household. Importantly, this does not necessitate discarding the household or family as appropriate units with which to understand migration decisions. As in the present analysis, measurement of the contested decision-making process can be built into quantitative assessments of household migration behavior using factors that capture (or predict) women's bargaining power. Moreover, a similar approach could be used to elucidate power hierarchies that operate along intrahousehold or intrafamilial axes aside from gender, such as generation, age, or birth order.

Our findings also highlight the importance of assessing decision-making in migrant and nonmigrant families alike. If women, on average, use their influence within the household to discourage spousal migration, this use of bargaining power will be more visible in nonmigrant homes.

The results also have important implications for migration-related policy. Prior research has investigated whether PROGRESA impacted Mexican migration via increased household resources (Angelucci 2015; Stecklov et al. 2005). In addition to increasing material well-being, government transfer programs with gender-specific targeting may also influence migration by shifting control over the distribution of resources within the household. By adjusting for program-driven shifts in total household resources, we isolate the effect of changes in controlover resources and demonstrate that they are related to migration outcomes. This suggests a policy lever for influencing migration: promoting female autonomy and participation in household decision-making may shape the migration behavior of partnered men.<sup>12</sup>

Despite the advantages of our approach, there are several important limitations. This study is limited to drawing conclusions about gender-based differences in preferences among couples. A more complete understanding of the connections between gender and migration decisions would include other household structures, as well as the role played by siblings, extended kin, and nonresident kin in contributing to decision-making.

Perhaps most importantly, we cannot draw conclusions regarding women's emigration to the United States as a household outcome. The majority of partnered women emigrate after their spouses (Cerrutti and Massey 2001); and because women's movement to join men in the United States is also contested (see Broughton 2008; Hondagneu-Sotelo 1994), we would expect bargaining power to play a role in these subsequent migration decisions—although potentially in the opposite direction, with bargaining power increasing the likelihood that women join their spouses. In 24 % of the migrant couples in this analysis, women had joined their husbands prior to the second survey round. We find no evidence that bargaining power measures differentially impact this type of migration, but the power of this analysis is limited by the small number of female U.S. migrants observed in nationally representative data sets.

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<sup>12</sup>Notably, some scholars contend that programs like PROGRESA are an imperfect mechanism to improve female autonomy because they also reinforce a longstanding gendered division of household responsibility (Cornwall 2007; Molyneux 2006).

It is also critical to note that we are capturing an average relationship at the population level and that these findings almost certainly mask important heterogeneity. That is, some wives likely support spousal migration, and some husbands may feel pressured to migrate. Moving forward, scholars theorizing about the origin of this variation could stratify data using measures that capture these differences, as we have done using regional variation. Further exploration of this heterogeneity will be an important avenue for future research.

Similarly, we employ measures of bargaining power in this study that capture control over household resources. We also considered that contextual features, such as community migration networks, may shape women's preferences about migration. Importantly, though, local institutions and other contextual factors may affect household bargaining through mechanisms other than resource control or preferences, such as structuring women's outside opportunities or empowerment to contribute to decision-making (Agarwal 1997; Covarrubias 2012; Segura and Zavella 2007). A fruitful extension of this work would join nationally representative data with regional information to develop quantitative measures that capture the nested and contingent nature of the migration decision-making process.

More broadly, the findings indicate a need for continued research on the ways that emigration impacts women's lives. A growing number of studies investigate this question, but most focus on women's experiences in receiving contexts. Because the emigration of spouses runs counter to some women's preferences, it becomes important to understand the potential detriments to well-being that family migration may impose. Looking ahead, scholars have argued that demographic and familial change may reduce future emigration pressure out of Mexico (Escobar et al. 2006; Hugo 2011). If the experience of male migration continues to negatively affect nonmigrant women, we would expect that broader increases in female authority (Rodríguez 2003; Swanger 2007) will also exert a dampening effect on future emigration among partnered men. Of course, such gains in female authority may simultaneously support increases in female movement, particularly among young unpartnered women. Understanding changes to the size and composition of future emigration flows will undoubtedly benefit from attention to the dynamics of gender and power in Mexican communities.

## Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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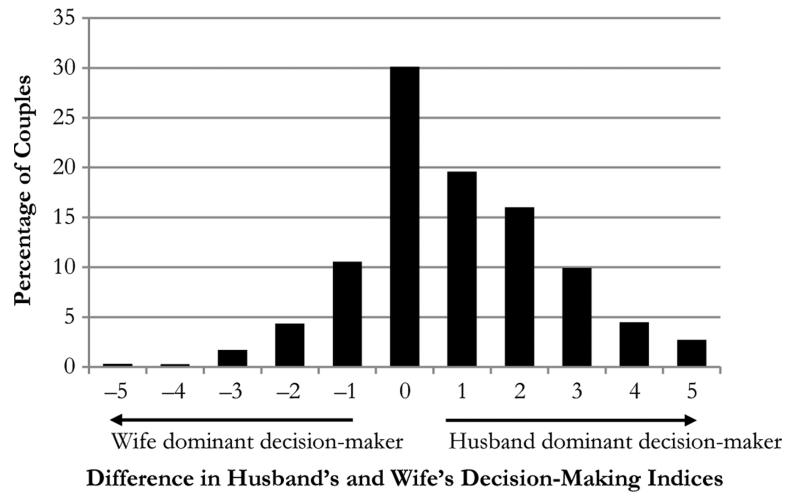
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**Fig. 1.** Distribution of decision-making authority in Mexican couples, 2002. The distribution of the difference between husbands' and wives' values on a five-item index of decision-making authority about major household decisions: the purchase of major expenses, financial transfers to her extended family, financial transfers to his extended family, her employment, and his employment. Positive values indicate couples in which the husband makes more major household decisions than the wife; negative values indicate couples in which the wife makes more major household decisions than the husband. *Source:* Mexican Family Life Survey (MxFLS), 2002



**Table 1**

Descriptive statistics, Mexican Family Life Survey (MxFLS), 2002 and 2005

	Sample % or Mean (SD)
U.S. Migration Between 2002 and 2005 (%)	
Husband emigrated to the United States	3.4
Wife remained in Mexico through 2005	2.6 <sup>a</sup>
Wife also migrated by 2005	0.8 <sup>b</sup>
Wife emigrated to the United States without husband	0.4
Bargaining Power (2002) (means)	
Wife's asset value (1,000s of pesos)	26.9 (83.4)
As a proportion of total household asset value	0.81 (0.34)
Wife's nonlabor income (1,000s of pesos)	0.46 (3.83)
As a proportion of total household nonlabor income	0.12 (0.32)
Wife's decision-making authority (0–5 index)	2.81 (1.51)
As a proportion of total household decisions	0.41 (0.18)
Number of domains in which husband's values exceed wife's values (0–3 index)	1.08 (0.80)
Other Characteristics (2002)	
Wife's education (mean years)	6.12 (4.11)
Husband's education (mean years)	6.80 (4.60)
Wife's age (mean years)	41.58 (13.53)
Husband's age (mean years)	44.91 (14.44)
Number of children (mean)	2.27 (1.61)
Years of marriage (mean)	16.75 (8.88)
Household size (log)	1.46 (0.40)
Household access to credit (%)	61
Household expenditures (log pesos) (mean)	6.38 (0.92)
Asset value (1,000 pesos) (mean)	34.14 (88.59)
Nonlabor income (1,000s of pesos) (mean)	1.15 (17.18)
Total sum of spouses' decision-making indices (mean)	6.48 (2.17)
Community household expenditure mean (log pesos) (mean)	6.76 (0.58)
More than one-third of community has family in the United States (%)	51
Urban residence (%)	73
Spouses interviewed together (%)	15
Number of Couples	4,950

*Note:* Mean estimates are weighted with 2002 MxFLS roster weights.

*Source:* MxFLS, 2002 and 2005 waves.

<sup>a</sup>This figure represents 76 % of migrants.

<sup>b</sup>This figure represents 24 % of migrants.

**Table 2**

Estimated odds ratios on bargaining power indicators predicting U.S. migration among husbands between 2002 and 2005, ( $N = 4,950$  Mexican couples)

Wife's Proportion of Assets	0.583 *	[2.32]		
Total Household Assets	1.000	[0.37]		
Wife's Proportion of Nonlabor Income	0.596 †	[1.75]		
Total Household Nonlabor Income	0.993	[0.74]		
Wife's Proportion of Major Household Decisions	0.354 *	[2.33]		
Total Household Decisions	1.014	[0.30]		
Number of Domains in Which Husband's Values > Wife's (0–3)				1.287 ** [2.74]
Wife's Schooling: 1–6 years	1.366 [0.92]	1.340 [0.85]	1.344 [0.87]	1.333 [0.84]
7–11 years	0.847 [0.41]	0.837 [0.43]	0.861 [0.37]	0.851 [0.40]
12+ years	1.254 [0.51]	1.214 [0.43]	1.298 [0.58]	1.251 [0.49]
Husband's Schooling: 1–6 years	0.696 [1.11]	0.665 [1.26]	0.691 [1.15]	0.678 [1.20]
7–11 years	1.193 [0.48]	1.113 [0.29]	1.143 [0.37]	1.136 [0.35]
12+ years	0.628 [1.13]	0.584 [1.33]	0.603 [1.26]	0.600 [1.27]
Wife's Age: 15–24 years	1.856 [1.20]	1.926 [1.27]	1.812 [1.15]	1.802 [1.15]
25–34 years	2.886 * [2.27]	2.905 * [2.27]	2.742 * [2.12]	2.749 * [2.16]
35–49 years	2.430 * [2.18]	2.409 * [2.14]	2.353 * [2.07]	2.391 * [2.13]
Husband's Age: 15–24 years	5.010 ** [2.95]	5.407 ** [3.12]	5.120 ** [3.02]	5.404 ** [3.12]
25–34 years	2.198 † [1.87]	2.353 * [2.02]	2.215 † [1.89]	2.333 * [2.00]
35–49 years	1.557 [1.34]	1.641 [1.50]	1.577 [1.37]	1.610 [1.43]
Number of Children	0.984 [0.16]	0.981 [0.19]	0.963 [0.36]	0.970 [0.30]
Years Married	1.001 [0.07]	1.000 [0.02]	1.000 [0.02]	0.999 [0.05]
Household Has Access to Credit	1.586 * [2.35]	1.607 * [2.41]	1.624 * [2.45]	1.594 * [2.36]
Expenditure Spline (log)				
<25th percentile	0.695 † [1.80]	0.678 † [1.89]	0.673 † [1.94]	0.686 † [1.85]
25th–75th percentile	0.695 [1.15]	0.672 [1.27]	0.689 [1.18]	0.673 [1.26]
>75th percentile	1.251 [1.08]	1.274 [1.14]	1.275 [1.15]	1.264 [1.09]
Household Size (log)	0.886 [0.25]	0.910 [0.20]	0.966 [0.07]	0.936 [0.14]
Community Expenditure Mean (log)	0.911 [0.42]	0.893 [0.50]	0.892 [0.51]	0.902 [0.46]
Community Is Urban	0.549 ** [2.60]	0.547 ** [2.67]	0.552 * [2.57]	0.560 * [2.52]
Chi-Squared(26)	180.08	157.13	134.62	144.70
McFadden's $R^2$	.077	.074	.075	.076

Notes: Estimates shown are odds ratios predicting the probability of male emigration between 2002 and 2005. Z scores are shown in brackets. All specifications include a dichotomous measure indicating whether husbands' data come from wives' reports and an indicator for whether the couples were interviewed in the presence of each other (odds ratios not shown). The omitted category of education is "no schooling." The first specification also includes a binary measure of zero household asset value; the second specification includes a binary measure of zero nonlabor income value (odds ratios not shown). Standard errors are clustered at the community level.

Source: MxFLS 2002 and 2005.

†  
 $p < .10$   
\*  
 $p < .05$   
\*\*  
 $p < .01$

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**Table 3**Selected odds ratios predicting first U.S. migration by husbands, 2002 to 2005 ( $N = 4,717$  couples)

	(1)	(2)	(3)	(4)
Wife's Proportion of Assets	0.611 <sup>†</sup> [1.95]			
Total Household Assets	1.000 [0.23]			
Wife's Proportion of Nonlabor Income		0.454 <sup>*</sup> [2.53]		
Total Household Nonlabor Income		0.978 [1.31]		
Wife's Proportion of Major Household Decisions			0.393 <sup>†</sup> [1.81]	
Total Household Decisions			0.994 [0.11]	
Number of Domains in Which Husband's Values > Wife's (0–3)				1.263 <sup>*</sup> [2.41]
Wife Has Internal Migration Experience	0.707 <sup>†</sup> [1.95]	0.716 <sup>†</sup> [1.87]	0.704 <sup>*</sup> [1.98]	0.703 <sup>*</sup> [1.99]
Husband Has Internal Migration Experience	1.203 [0.77]	1.198 [0.76]	1.195 [0.76]	1.207 [0.79]
Chi-Squared (28)	142.51	137.53	114.49	116.02
McFadden's $R^2$	.082	.081	.080	.081

*Notes:* Figures shown are estimated odds ratios predicting the probability of male emigration between 2002 and 2005.  $Z$  scores are shown in brackets. All specifications include controls shown in Table 2, controls for both wives' and husbands' ages, and an indicator for whether husbands' data come from wives' reports. Model 1 also includes a binary measure of zero household asset value; Model 2 includes a binary measure of zero nonlabor income value (odds ratios not shown). Standard errors are clustered at the community level.

*Source:* MxFLS 2002 and 2005.

<sup>†</sup>  
 $p < .10$

<sup>\*</sup>  
 $p < .05$

**Table 4**

Selected odds ratios predicting emigration among husbands, 2002 to 2005, by size of local Mexico-U.S. migration network ( $N = 4,950$  couples)

	Proportion of Community With Family in the United States	(1)	(2)	(3)	(4)
Wife's Proportion of Assets	>1/3	0.767 [0.98]			
	<1/3	0.418 * [2.14]			
Wife's Proportion of Nonlabor Income	>1/3		0.687 [1.25]		
	<1/3		0.388 * [1.99]		
Wife's Proportion of Major Household Decisions	>1/3			0.504 [1.34]	
	<1/3			0.301 † [1.72]	
Number of Domains in Which Husband's Values > Wife's	>1/3				1.212 † [1.95]
	<1/3				1.236 [1.02]
More Than One-Third of Community Has Family in the United States		2.291 * [2.02]	3.365 ** [5.68]	2.977 ** [2.76]	3.704 ** [4.01]
Chi-Squared (28)		220.60	212.94	193.17	203.86
McFadden's $R^2$		.113	.111	.111	.111

*Notes:* Figures shown are estimated odds ratios predicting the probability of male emigration between 2002 and 2005. Z scores are shown in brackets. All specifications include controls shown in Table 2, controls for both wives' and husbands' ages, and an indicator for whether husbands' data come from wives' reports. The first specification also includes a binary measure of zero household asset value; the second specification includes a binary measure of zero nonlabor income value (odds ratios not shown). Standard errors are clustered at the community level.

*Source:* MxFLS 2002 and 2005.

†  $p < .10$

\*  $p < .05$

\*\*  $p < .01$

**Table 5**

Odds ratios predicting migration of male head of household, PROGRESA, 1998 to 2000

	Household Sample		
	Eligible	Eligible and Treated	Eligible, Treated, and Retained Through 2000
PROGRESA Transfer (1,000s of pesos)	0.897 <sup>*</sup> [1.97]	0.854 <sup>*</sup> [2.05]	0.804 <sup>*</sup> [2.35]
Household Expenditures Spline (log)			
<25th percentile	0.657 <sup>**</sup> [4.83]	0.692 <sup>**</sup> [3.15]	0.672 <sup>**</sup> [2.94]
25th–75th percentile	0.844 [1.03]	0.937 [0.30]	0.875 [0.54]
>75th percentile	1.706 <sup>*</sup> [2.29]	2.262 <sup>**</sup> [3.11]	2.135 <sup>*</sup> [2.41]
Household Has Concrete Floors	1.146 [1.33]	1.213 [1.43]	1.122 [0.74]
Household Has Concrete Roof	1.068 [0.44]	0.846 [0.87]	0.892 [0.56]
Household Has Indoor Plumbing	1.346 [1.33]	0.846 [0.42]	1.003 [0.01]
Household Has Electricity	1.348 <sup>*</sup> [2.44]	1.487 <sup>*</sup> [2.41]	1.376 <sup>†</sup> [1.70]
Male Head of Household's Age (years)	1.021 <sup>**</sup> [3.31]	1.024 <sup>**</sup> [2.97]	1.031 <sup>**</sup> [3.75]
Spouse's Age (years)	0.969 <sup>**</sup> [6.26]	0.967 <sup>**</sup> [5.01]	0.966 <sup>**</sup> [4.89]
Male Head of Household's Education (years)	0.972 <sup>†</sup> [1.91]	0.957 <sup>*</sup> [2.25]	0.945 <sup>**</sup> [2.62]
Spouse's Education (years)	0.997 [0.16]	1.008 [0.36]	1.027 [1.02]
Household Size and Composition			
Log household size	6.951 <sup>**</sup> [7.70]	12.234 <sup>**</sup> [8.49]	10.354 <sup>**</sup> [6.09]
10 controls: Number of males and females age 0–5, 6–11, 12–25, 26–45, and 46+	Included	Included	Included
Survey Fixed Effects			
Year = 1998	0.478 <sup>**</sup> [7.36]	0.492 <sup>**</sup> [6.37]	0.438 <sup>**</sup> [6.44]
Year = 1999	0.259 <sup>**</sup> [15.70]	0.279 <sup>**</sup> [11.54]	0.271 <sup>**</sup> [11.12]
Observations	37,596	22,804	19,215
Chi-Squared (26)	628.57	402.91	341.65
McFadden's Pseudo-R <sup>2</sup>	.077	.086	.094

*Notes:* Figures shown are estimated odds ratios, with *z* scores in brackets. All specifications include community fixed effects and a control for treatment status. Standard errors are clustered at the community level.

*Source:* ENCEL data, Fall waves from 1998, 1999, and 2000

<sup>†</sup>  $p < .10$

<sup>\*</sup>  $p < .05$

<sup>\*\*</sup>  $p < .01$