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WORKING PAPER

Socioeconomic Context and the Association between Marriage and Mexico-U.S. Migration

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March 2008

Population Program POP2008-05

**25th Anniversary of the Population Program
Working Paper Series**

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Acknowledgments: I thank Maria Aysa, Jere Behrman, Kulu Hill, Hans-Peter Kohler, and Doug Massey for comments and suggestions; David Lindstrom for graciously providing me with his tabulated municipal-level indicators from the Mexican 2000 census; and Nancy Mann for her careful editing. I also acknowledge research support from an NIH Fogarty International Center predoctoral training grant, the Population Reference Bureau through its Policy Communications Fellows Program, the University of Pennsylvania through its Judith Rodin Fellowship, and administrative and computing support from the NICHD-funded University of Colorado Population Center (grant R21 HD51146).

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ABSTRACT

In this paper we analyze how the association between Mexico-U.S. migration and marriage varies across socioeconomic settings in places of origin. Using Mexican Migration Project data, and employing bilevel survival analysis with controls for socioeconomic, migrant network, and marriage market characteristics, we find that the pre-to-post-marriage migration gradient was sharpest in areas of recent industrialization, where female employment in manufacturing might have diminished the need for postmarital migration while complementing household income. Marital status was not significant in smaller rural areas, where age-profiles of earnings are flatter and female work is unpaid, making migration attractive later in the life course.

Socioeconomic Context and the Association between Marriage and Mexico-U.S. Migration

Individuals decide to migrate—or not—through calculations in which various social institutions may play significant roles (e.g., Stark and Bloom, 1985). Most notably, family members can assert various kinds of support (Flores, 2005) and opposition to the move, the latter even in patriarchal contexts with relatively well-established migrant networks, like Mexico (Hondagneu-Sotelo, 1994). The manifestation and end product of such assistance and resistance reflect not only family members' preferences but also their bargaining position within the household or family, and hence the normative context that structures their roles, at least loosely, in generational and gendered ways (Hondagneu-Sotelo, 1992; Hondagneu-Sotelo, 1994).

Migration decisions are also associated with socioeconomic *milieus* in places of origin. In the case of migration between Mexico and the U.S., which is often temporary, the likelihood of migration may be highest not in the poorest areas but in those with a fair degree of (small-scale) investment opportunities (Lindstrom and Lauster, 2001). Context may matter partly because institutions have different composition or operate differently across settings. For instance, migrant networks seem to propagate less swiftly in metropolitan areas than in small towns and rural localities (Fussell and Massey, 2004), perhaps because of the greater attractiveness and diversity of urban labor markets or the peculiarities of social organization of neighborhoods in large cities.

In a similar fashion, the composition of families, bargaining position of spouses, or the very benefits of migration for those in different stages of the family life cycle could vary across settings in ways that could imply their association with migration has different orders of magnitude or direction. For instance, female labor force participation in remunerated activities in a patriarchal society like the Mexican could very well be possible in some settings while not in

others given both local economic development and normative context. This could in turn influence the bargaining position of women with regarding a potential move, or the relative benefits of migration for married men per se.

While familial arrangements and socioeconomic conditions do seem to matter in their own right, there is little research on how the relevance of institutions such as the family to migration could differ across socioeconomic settings. From the perspective of a migrant-to-be, marriage and family formation may bring new social and economic obligations that could either discourage (Hondagneu-Sotelo, 1994) or stimulate movement (Massey et al., 1987: Chapter 7). We argue that the responses to these obligations may in turn depend on local opportunities and local norms. Thus, the direction, or at least magnitude, of the association between migration and marriage, which is one of the most relevant markers of changing obligations and bargaining positions for males, could vary conspicuously across socioeconomic contexts.

This paper analyzes variation across socioeconomic settings in the association between Mexico-U.S. migration and marital status/family life cycle for quasi-completed male cohorts, using retrospective labor, migration, marriage, and fertility histories from the Mexican Migration Project database. We find that marital status is not strongly associated with the likelihood of a first U.S. migration *on the margin*, though having children aged 2-5 is *negatively* associated with U.S. migration. The association between marriage and migration varies conspicuously across settings. In (rural) areas heavily dependent on agriculture, the likelihood of becoming a U.S. migrant does not vary significantly before and after marriage. In sharp contrast, men living in moderate-sized urban areas where women have some opportunities for paid labor become much less likely to embark on a first migration to the U.S. after they marry. Before presenting and discussing our complete results, we summarize previous findings on the topic and explain why

we should expect the association between marriage and migration to vary across settings. We also introduce the data and analytical strategy appropriate (if not perfect) for our purposes.

PREVIOUS RESEARCH

The literature on the relationship between marriage and spatial mobility has mostly been devoted to internal migration and residential moves (e.g. Courgeau 1991; Flowerdew and Al-Hamad, 2004; Juárez, 1996; Mulder and Wagner, 1993; Sandefur and Scott, 1981), always finding single people are more geographically mobile than married individuals. The evidence with respect to international movement is scarcer and mixed. Ortiz (1996) examined the dynamics of Puerto Rican women's migration to and from the continental U.S. and found that unmarried and divorced women were more likely to migrate to the mainland than married women; that never-married women were less likely to return to the island; and that recently divorced women were the *most* likely to return. Analyzing migration choices of Mexican male household heads in a bivariate fashion, Massey et al. (1987:200) found a general pattern across the familial lifecycle: the likelihood of migration "begins at a high level among young unmarried men, falls after marriage, rises with the arrival of children, and then falls again as the children mature and leave home." This pattern varied somewhat across the four communities studied by the authors. Ambitious young unmarried men were especially likely to migrate to the U.S. in communities with limited opportunities (in the authors' case, a rural town with a high proportion of landless households). Fluctuations over the life cycle were much less pronounced in the two urban-industrial settings they studied. Their analysis, however, failed to control for individual differences in exposure to married life, among other confounders.

Other studies have indirectly looked at the issue by focusing on gender differentials in migration dynamics (Cerrutti and Massey, 2001), or how gender dynamics may affect migration and return/settlement decisions, generally finding that women tend to oppose the move (Grasmuck and Pessar, 1991), especially in migrant flows dominated by males who migrate without their families and on a temporary basis, at least initially (Hondagneu-Sotelo, 1994). However, these studies fail to compare single and married individuals. In contrast, this paper seeks to understand how the event of marriage and family formation play out in the outmigration dynamics of males, while drawing from the gender dynamics and immigration literature to inform our inferences regarding how gender and family life cycle factors may affect people's decision-making, and how the former may vary across contexts.

To the best of our knowledge, there has been no systematic study of how differentials by marital status in both the propensity to migrate and the timing of international migration vary across the different socioeconomic milieus in which these decisions are made. This study looks at the socioeconomic characteristics of individuals to assess whether the socioeconomic selectivity of both migration and marriage affects the relation between them, while also controlling for aggregate-level characteristics that may influence the likelihood and timing of both events. We describe these characteristics next (see Table 2 for descriptive statistics).

In Mexico, both international migration propensities (Lindstrom, 1996; Lindstrom and Lauster, 2001; Massey and Espinosa, 1997) and marriage timing (Parrado and Zenteno, 2002; Quilodrán, 1991) are associated with people's age and educational attainment, as well as the economic base and/or dynamism in the community of origin. Age-specific migration and marriage schedules are highest for people in their early 20s, decreasing thereafter (see Hill and Wong, 2005; Quilodrán, 1980). People with the highest educational levels relative to their

occupation are least likely to migrate to the U.S. (Quinn and Rubb, 2005); those with medium levels of education are the least likely to marry (Quilodrán, 1991). Net of age effects, leaving school, entering the labor force, and accruing labor force experience all strongly predict marriage timing in Mexico (Parrado, 2004; Parrado and Zenteno, 2002).

In the case of marriage, female economic activity indices such as labor force participation rates and the proportion of women working in manufacturing-related occupations have been used to test some hypotheses related to female independence and marital search models (Oppenheimer, 1988). In the case of migration, similar measures of female economic activity at the community level have been used as proxies for the economic dynamism of a community. Studies found these indices to be *positively* associated with marriage (Parrado and Zenteno, 2002), first U.S.-bound migration (Massey and Espinosa, 1997), and trip duration (Lindstrom, 1996).

Certain other variables are especially good predictors of either migration or marriage, but not both. Social capital held and transmitted through kinship and *paisanaje* networks is clearly related to international migration. At the individual level, having immediate relatives with previous experience in the U.S. increases the odds of U.S. migration, especially for the first spell (Massey and Espinosa, 1997). At the aggregate level, the level of U.S. migration experience in a community has also been found to be a strong predictor of U.S. migration (see Fussell and Massey, 2004; Massey, 1990; Massey et al., 1994; Massey and Espinosa, 1997).¹ In the case of marriage, aggregate-level measures of the potential availability of marriage partners have generally been found to be strong positive predictors of marriage timing. Fossett and Kiecolt (1991) analyzed the predictive power of various sex ratio measures as proxies of marriage market conditions (also see Goldman et al., 1984; Lloyd and South, 1996). They found that

adjusting sex ratios for labor force status improved the prediction of measures of family formation. In our own study, we adjusted only for the labor force participation of males, as that of females was relatively low for the cohorts under study.

In sum, although age at marriage and migration are in general associated with similar individual and aggregate socioeconomic characteristics, the expectation is that—on average and net of confounders—single people will be more likely to migrate than married ones (Ortiz, 1996; but see Massey et al., 1987). But this pattern, or at least its order of magnitude, may vary across contexts, even after controlling for characteristics associated with marriage timing. If males are the sole breadwinners of the household or if female labor is concentrated in unpaid, informal, and/or temporary jobs, the economic pressure on male household heads will be especially high while the bargaining power of females will tend to be low. Where, in addition, economic opportunities are limited (e.g., in a rural area with little access to land), women may be unable to persuade their partners not to migrate (Hondagneu-Sotelo, 1994). Moreover, poor economic opportunities for individuals may translate into an especially flat lifetime earnings profile (Beaudry and Green, 2000; Klevmarken, 1982). If people have little schooling and work at low-wage, low-mobility, informal jobs, labor-market experience will bring them little returns, making U.S. migration an attractive strategy either before or after marriage, as the job market would not penalize their absence. On the other hand, economically diverse areas may provide more opportunities not only to males but also to females. For people in these areas, migration may be less attractive *after marriage*, as more households can rely on earnings from both males and females, and females may also have more influence in the migration decisions of their male counterparts. Finally, we do not expect the role of social context to be linear or monotonic across

the rural-urban continuum as the likelihood of migration is not high in metropolitan areas, partly because social networks are less relevant (Fussell and Massey, 2004).

DATA

The data come from the Mexican Migration Project (MMP), based at the Universities of Guadalajara and Princeton (see <http://mmp.opr.princeton.edu>). The MMP re-collects wide-ranging multilevel social, economic, and demographic data focused on migration to the United States. The MMP communities were selected to cover a wide spectrum of urbanization and socioeconomic conditions. Within each community, a simple random sample of 100-200 households was selected. Individual- and household-level data were collected via a flexible survey instrument, the ethnosurvey (Axinn, 1991; Massey, 1987), which allows for a less contrived interview than more standardized survey approaches, while careful interviewer training aims to maintain a fair degree of internal validity. As of this writing, the project has collected data on 118 Mexican communities, surveyed (once and only once) between 1987 and 2007. As some items relevant for the analysis were included only after 1998 and as only communities surveyed on or before 2002 were available when we performed our analyses, we use data on 35 communities surveyed between 1998 and 2002.

The database includes complete retrospective life histories of household heads, most of whom are male, as is to be expected in a fairly patriarchal system with low divorce rates. Since female heads are few and their experience may not be representative, we focus on the experience of males, but our analyses keep in mind the gendered nature of marital and family life. To avoid potential biases, we studied only individuals who had already gone through the age span where most marriage and migration transitions occur—in Mexico, ages 15 to 45. As Panel A in Table 1

shows, some 95% of people in the study had married by age 40, and 90% of U.S. migrants had started their migratory career by age 45. Thus, our lower age limit for the study was age 45 (by the year of the survey). Since selective mortality and recall bias are natural sources of bias in retrospective studies, we set the upper age limit at 65. Heads aged 45 to 64 in the survey year (1998-2002) are likely to be a representative sample of their birth cohorts, because people ages 40 and over have mostly formed their own households. In sum, we study the marriage-migration behavior of male household heads belonging to the 1933-1937 to 1953-1957 birth cohorts, for the years when they were aged (on last birthday) 15 to 44—that is, for the years from the 1950s to the 1990s, which encompassed far-reaching changes in the Mexican political economy and U.S. immigration policy (Massey et al., 2002). These cohorts also experienced overall, nonmonotonic delays in marriage (Quilodrán, 2001).

This selection of communities and cohorts yielded a total of 1,575 individuals in 35 communities, located in 27 different municipalities ranging from a few small rural settlements, to small cities, to neighborhoods in a couple of large metropolitan areas. We supplemented these (mostly time-varying) individual-level data with municipal-level indicators coming from the National Institute of Statistics, Geography, and Informatics (see www.inegi.gob.mx), most of which were readily available from the MMP community-level files. We therefore pooled community-level data by municipality, which mainly involved integrating four neighborhoods sampled in two large urban areas. Municipal-level socioeconomic indicators similar to the ones used here are associated with the likelihood and timing of marriage (Parrado and Zenteno, 2002), the likelihood of U.S. migration (Massey and Espinosa, 1997), and migratory trip durations (Lindstrom, 1996).

A final note on the data: the experience of individuals in the sample might not be strictly representative of their cohorts in each community as some people might have not returned. Our (logged odds ratio) estimates would then be biased if this proportion is sizable and if return migration is selective in terms of marital status. As it has been well-documented in the literature, return was quite common for Mexicans (Chavez, 1988; Massey et al. 1987), even for those with permanent legal residence (Jasso and Rozenzweig, 1982). Although return propensities decreased somewhat in the second part of the 1990s (Marcelli and Cornelius 2001; Massey et al. 2002; Riosmena, 2005: Chapter 3), this is a period where *first* U.S. migration propensities are relatively low in the cohorts studied. Moreover, as we would expect married migrants to be more likely to return, especially for those without documents (Massey and Espinosa, 1997: Table 7), we expect our estimates of the effect of marriage to be shrunk relative to its true value. As such, our estimates would then be conservative figures.

METHODS

We estimate discrete-time survival models predicting a first U.S. migratory trip of an individual in a given year t while controlling for individual- and community-level characteristics in $t-1$. This family of models can be estimated by way of a logistic regression on a set of time-varying pseudo-observations (i.e., person-years, see Allison, 1996). To test whether marriage is negatively associated with migration dynamics, we pay special attention to their relationship while controlling for the characteristics, described above, that might influence *both or either*, and testing for interactions between marital status and socioeconomic setting. To avoid confounding the influence of socioeconomic conditions with that of differences across communities in marriage timing, we further control for characteristics associated with the latter such as labor-

force adjusted sex ratios, which we would not necessarily expect to be associated with migration once we control for socioeconomic conditions and the level of migration in a community.

The estimation method selected was Generalized Estimating Equations (GEE, see Liang and Zeger, 1993; Zeger and Liang, 1985). GEE considers the natural grouping of observations via an intra-cluster correlation matrix that produces asymptotically consistent and more efficient estimates and standard errors robust to clustering (Liang and Zeger, 1993:60-61). This estimation method is especially appropriate and remarkably computationally convenient for two reasons. First, the MMP uses a two-stage sampling procedure in which communities are selected first (albeit, strictly speaking, nonrandomly) and individuals and their households are selected in a second stage. Thus, when one pools data from various communities, individuals are clustered within them. Second, the method is appropriate for estimating micro-macro interactions (e.g., between marital status and community characteristics).

RESULTS

The Sequencing and Pacing of Marriage and Migration

Panels A and B in Table 1 shows descriptive statistics on the marriage and migration timing of the sample. It is clear from the Panel A of the Table that marriage, broadly defined to include consensual unions, is a nearly universal event: 99% of household heads marry or establish a cohabiting union at least once. The 95th percentile of the age-at-marriage distribution is well below 44 for all union types except those in consensual unions. The latter represent a minority of unions (11%), 23% of which later become religiously or legally formalized, an important component in the pathway of consensual unions in the country (Martin, 2002; Pebley and Goldman, 1986; Quilodrán, 2001). Moreover, while only 6% of first unions had been

dissolved by the survey year, the dissolution probability for consensual unions (excluding legalizations) was higher than average, at 9%. In spite these differences, we treat consensual unions the same way as other, institutionally sanctioned unions given the small number of consensual unions in the data and their relative stability.

-TABLE 1 ABOUT HERE-

Panel B in Table 1 shows some timing characteristics of the first U.S. trip. Among all the men sampled, 24% had embarked on their first migration to the U.S. before the survey year. First migration tends to occur slightly later in life than marriage (the median is 25, compared to 23 for marriage). This difference reflects the fact that a slight majority of people in the sample (60%) migrated after marriage, as well as the catch-up in marriage of returned single migrants (see Parrado, 2004). Men who migrated when single had trip durations on average twice as long as those who migrated when married. The relationship between marital status and trip duration is thus a topic for future consideration, one that has not yet elicited much research.

Panel C in Table 1 shows the distribution of age at marriage according to migrant status, as well as according to the individual's order of events (marriage first, or migration first). The distributions of age at marriage among never- and ever-migrants are astonishingly similar, even though the figures are not adjusted for differences in socioeconomic status and the ever-migrant group is of decent size. This empirical convergence results from a slightly lower-than-average age at marriage among married migrants compared to a fairly higher-than-average age at marriage (28) of single returnees,² who, nonetheless, seem to marry more quickly than other unmarried people of the same age (see Parrado, 2004).

Table 2 shows means and standard deviations of individual and community-level characteristics of nonmigrants, those migrating while single, and those migrating for the first

time after marriage. These characteristics are evaluated for the year before the occurrence of the *first* event (whether it is migration or marriage). In other words, characteristics are measured for the year before marriage for nonmigrants and married migrants, while they refer to the year before migration for single migrants. Though imperfectly, these numbers show the characteristics of people at similar ages, as first-time single migrants to the U.S. are only slightly younger than the other two groups are when they marry (cf. Table 1, Panel C).³ In addition, Table 2 indicates those variables where there were significant differences between nonmigrants and either migrant group (“A”), or between single and married migrants (“B”).

-TABLE 2 ABOUT HERE-

While many differences were found between the migrant groups and nonmigrants (most of them discussed in detail in other studies and thus not discussed here), only three characteristics were found to be significantly different at the 0.05 level between single and married migrants. Besides the fact that single migrants were more likely to belong to the 1938-1942 cohort, married migrants are more likely than single migrants to come from places with higher percentages of economically active males in agriculture and lower proportions of people with at least 6 years of education. In other words, married migrants tend to be drawn from more rural places, giving some support to our hypothesis regarding context. We now turn to discussing the multivariate models in order to test whether this association prevails after we control for characteristics generally found relevant in predicting migration or marriage.

Survival Models

Two points are worth mentioning before introducing these results. First, in addition to the fact that the estimation method adjusts (coefficients and) standard errors for the clustering of

individuals within communities, we generally report likelihood ratio tests rather than Wald tests. This is so for all variables except age, cohort, and marital duration, where results of Wald tests are reported for each individual coefficient. We also include a *joint* likelihood ratio test of the significance for the whole variable (shown next to its heading). Second, some community-level variables are expressed in dichotomous form in all models presented here given our expectation that context is associated to marriage and migration in non-linear ways.

Table 3 presents GEE discrete-time event history models predicting the likelihood that a person makes a first U.S. trip. Model 1 is an additive baseline model including all covariates. As we expected, the age dependency of migration is curvilinear, quickly increasing in the late teens, peaking in the early twenties, and then monotonically decreasing throughout the rest of the span under study. Most cohort and all period estimates shrink to nonsignificance with the inclusion of all controls, suggesting a positive curvilinear increase in migration across cohorts partly expressed through period fluctuations (though, jointly, cohort effects are marginally significant). Education, occupation, and social capital have the expected associations, while the only aggregate-level coefficient estimates that remain significantly different from zero after the introduction of controls and adjustments for clustering at the community level (in the *additive* model) are migration prevalence and the proportion of people self-employed in the municipality.

-TABLE 3 ABOUT HERE-

Although marriage is negatively related to migration as is generally expected, the inclusion of controls (even starting with age) weakens this relationship enough to make it indistinguishable from random noise. In addition, the familial lifecycle is weakly associated with migration in a slightly unexpected way. The presence of children ages 2 to 5 is the only strongly significant variable, and it is negative, which is contrary to what Massey et al. (1987: Chapter 7)

found (in a bivariate fashion) in their study of four Mexican communities. The presence of children of all other ages (including infants) is positively related to migration, though the effect sizes are too small to be conclusive.

Given the expectation that pre- or postmarital migration may be favored in some settings rather than others, Model 2 shows tests for interactions between marital status and some community-level characteristics. Overall, Model 2 shows that premarital migration is especially likely to occur in communities with higher proportions of people with primary (i.e., above-average) education and females engaged in manufacturing. Though the effect of the latter interaction coefficient is not significant, controlling for its presence strengthens the effect of other components of the marital status–context interaction, so it was left in the analysis. At the other extreme, people from mostly agricultural communities were also more likely to migrate while single rather than married.

After these three interactions are added to the model, the “main” effect of marital status on migration becomes significant *and* negative. This coefficient needs to be interpreted rather precisely as the effect of marital status when *all* three other (dichotomous) contextual variables included in the interactions are zero. That is, it measures the effect of marital status in communities with fewer than 50% of males in the labor force in agricultural occupations, fewer than 10% of females in manufacturing, *and* fewer than 35% of people ages 12 and over with 6 or more years of education. People from these communities are *more* likely to migrate to the U.S. while married rather than single. The next section interprets this finding and discusses the magnitude of these effects. However, as we explain there, this community type is not at all representative of the data, so our study confirms the notion that premarital migration is in general more prevalent, though its effect does vary considerably according to a community’s setting.

Predicted Probabilities along the Life Course by Marital Status and Socioeconomic Setting

Since the models specified above relate to the log-odds scale, and the “effect” of marital status is to some extent contingent on the characteristics of local contexts, it makes sense to look at predicted probabilities in places of varying socioeconomic characteristics. As we are dealing with a time-dependent event, its (one-year) probability for an individual of a given age (and fixed characteristics) will be highly contingent on the age chosen. In addition, of course, some individual characteristics vary considerably more than others along the life course. To depict these dynamics, Figures 1 and 2 show different representations of the predicted age-specific schedule of migration between ages 15 and 44 for varying community contexts and marriage timings.

These predicted probabilities are calculated upon Model 2 reported in Table 3. Some characteristics of people (e.g., education) were fixed at average levels across all the predicted age range. But some need to vary as people age. Aside from the monotonic increase in age and period indicators, we assumed that people gain 12 months of labor force experience for every added year of age (all of it in an unskilled occupation). For the sake of simplicity, we held community characteristics constant across time.

As our working model implies, the difference in likelihood of migration among never- and ever-married people varies by community type. Our three different community characteristics yield a total of 2^3 possible discrete community types, according to whether or not they reach the selected thresholds for people with primary education (35%), males in agriculture (50%), and females in manufacturing (10%). These combinations are shown in Table 4, along with a calculation of how many municipality-years each represents out of the total space-time

covered in the sample. Since some combinations are more representative of the data than others, we focus below on the four with the highest relative frequency, i.e., types 1 through 4 in Table 4, which together represent 88% of all community-years in the sample.

-TABLE 4 ABOUT HERE-

Type 1, with lower proportions of males in agriculture and higher proportions of females in manufacturing and people with higher educational attainment represents the established urban-industrial town (“established” as type 1 communities experienced urbanization/industrialization relatively early). In contrast, type 2 is the traditional rural community of old, where female participation in industry and educational levels are low while male participation in agriculture remains high. Type 3, with low educational levels, high proportions of males in agriculture, and moderate ones of females in manufacturing, seems to represent the early-industrializing rural community, where female participation in industry is incipient but educational levels are still low. Finally, Type 4, where basic educational levels are higher and there is some female labor force participation in manufacturing *but* also high male participation in agriculture, can be regarded as a town of recent industrialization. Exploratory analyses (not shown here) looking at other census characteristics of the communities confirm this typology.

In the long run, marriage is a nearly universal and fairly steady state in the population under study. The exercise assumes three different ages at marriage, at 20, 23, and 27 years of age, which correspond to the 25th, 50th, and 75th percentiles of the distribution of age at marriage, as shown in Table 1. The model assumes that people remain married thereafter (at least until age 44). In addition, for simplicity we assume that people have four children in total (regardless of age at marriage and none of which are a product of premarital fertility), and that they are equally spaced two years apart (again, regardless of age at marriage), with the first being born two years

after marriage. Thus people of similar ages (say, 35) who married at different ages are in different stages of the familial cycle (some of them with one or two teenagers in the household, others with young children only). So, as time progresses, the effect of marital status on the likelihood of migrating becomes a “family effect.”

Panels A and B in Figure 1 show predicted age-specific probabilities of engaging in a first U.S. trip by community type. The only difference between the predictions used for plotting the two figures is age at marriage (for the sake of brevity, we show the “effects” of age at marriage only at 20 and 27 years). When standardizing age at marriage across communities, men from rural communities (Type 2) are the least likely to migrate to the U.S. before marriage and the most likely to migrate afterwards, while the reverse is true for men from industrializing communities (Types 3 and 4). However, given differences in the effect of marriage across settings, differences in the *cumulative* probability of migrating to the U.S. between age 15 and 44 across communities vary conspicuously according to age at marriage (this probability can be obtained by multiplying the probability of remaining a nonmigrant from age 15 to exact age 45).⁴ The likelihood of becoming a U.S. migrant is 7.5 percent points higher in rural than in industrializing areas (i.e. the cumulative probability of migration is 0.355 vs. 0.28 respectively) assuming marriage occurs at age 20. However, this gradient reverses if we assume marriage occurs at age 27, where men in industrializing communities are 4.3% more likely to migrate to the U.S. than men from traditional rural areas (0.377 vs. 0.334 cumulative migration probabilities, respectively).

-FIGURE 1 ABOUT HERE-

The large effect of marriage on migration probabilities in industrializing towns (as implied in the model and *ceteris paribus*) is clearest in Panel A of Figure 2, which compares age-

specific migration probabilities across three different marriage ages. In this setting, the later marriage occurs, the higher is the long-term propensity to migrate to the U.S. The cumulative probability of U.S. migration between ages 15 and 44 (inclusive) varies proportionally with age around 0.75 percentage points per year. If age at marriage were 20, 28% of people would become U.S. migrants between 15 and 44; as age at marriage rose to 23, the proportion of migrants would go up to 33%; finally, this proportion would be 38% if *all* people married at 27. In short, differences brought by varying age at marriage in industrializing communities are comparable to those brought by changes in community setting, if not larger.

-FIGURE 2 ABOUT HERE-

Panel B in Figure 2 shows differences in the migration age gradient in traditional rural communities by age at marriage. Traditional rural settings—where migration is a more likely event—display the *lowest* gradient between pre- and postmarital migration propensities. As a result, the three age patterns in the figure look much more similar than those in Panel A. Given the lack of a sizable “effect” of marriage on migration in these areas, the likelihood of engaging in a migratory trip between ages 15 and 44 in fact slightly decreases with from 35% to 33.4% when age at marriage rises from 20 to 27 years.

SUMMARY AND DISCUSSION

Marriage is a nearly universal and stable event in Mexico, where a high percentage of people are in institutionally sanctioned or later legalized unions (Martin, 2002; Pebley and Goldman, 1986; Quilodrán, 1991, 2001). Typical ages at marriage for *males* are around 23-24. People with previous U.S. migration experience have remarkably similar marriage behavior. But this similarity results from a later age-at-marriage of single migrants combined with a relatively

quick catch-up in marriage by people who migrate while single and return to Mexico (see Table 1; Parrado 2004).

To better pin down the time-dependency of migration and the two-level structure of the data, we used GEE logistic regression to estimate several bilevel discrete-time event history models predicting the likelihood of making a first U.S. migratory trip. As the bivariate analyses suggest, people are more likely to *initiate* their U.S. migratory careers while single rather than married. Once proper controls are introduced, this relationship is not statistically significant on the margin. However, the presence of small children (2-5 years old) is indeed strongly and negatively related to the likelihood of engaging in a first migratory trip to the U.S. (though the inclusion of this variable is not the reason why the coefficient of marital status is not significant). It thus seems that, net of differential exposure to married life and relevant socio-demographic factors, married men *with young children* are overall less likely to migrate to the U.S., since their household position, though privileged in many ways, requires them to assume increased economic and social familial obligations.

We also looked at whether socioeconomic context affects whether migration is likelier to precede or to follow marriage. It has been suggested that at least in certain communities, where opportunities for young people are limited, ambitious young men are especially likely to migrate to the U.S. (Massey et al., 1987: Chapter 7). We entertained various interactions between marital status and community level, and found that three main characteristics had *nonlinear* effects in determining which sequence was more prevalent at the community level. The otherwise weak dependence of migration on marital state found in purely additive (log-odds-scaled) models became stronger in specific socioeconomic settings when considering the interaction of

contextual indicators with marital status (and when proper controls were applied for the bilevel structure of the data).

Premarital migration remained more likely than postmarital migration throughout pretty much all the space-time studied here. However, premarital migration was especially high and statistically significant in medium-sized towns of relatively recent industrialization (followed by those that had just begun to industrialize), where postmarital migration seems to be an unlikely event and premarital migration a likelier one. At the other extreme, traditional rural communities (with low levels of education and female formal economic activity) displayed the lowest gradient between pre- and postmarital migration, a fact that may partly explain their higher migration propensities at older ages and their overall high migration prevalence.⁵ As Mexicans in traditional rural areas generally marry earlier than in larger, more industrialized settings (Quilodran 2001), contextual variation in the association between migration and marriage and the timing of marriage and family formation (which we controlled for) could be an important mechanism explaining differences in migration propensities and timing across these settings.

While the observed gradient does not necessarily contradict Massey et al.'s (1987: Chapter 7) statement regarding young people in communities with limited opportunities being more likely to migrate (they are, especially in a cross-community perspective), it does offer some evidence against their statement about the association between migration and stage of family life cycle. In places with limited opportunities, migration is an acceptable strategy throughout all of (the part of the) life course under study. While it is indeed more likely for younger men, it is not necessarily so for the unmarried, once we control for exposure and characteristics influencing marriage timing. Rural areas dependent on agriculture could thus be lacking opportunities to increase one's earnings later in life when compared to the opportunities available to individuals

with higher formal education in larger towns, who tend to have a steeper lifetime age-earnings profile (Beaudry and Green, 2000; Klevmarken, 1982).

On the other hand, the likelihood of migration for the young and unmarried is especially higher—*relative* to that for married men—in industrializing areas. Migration before marriage in these areas may be more likely to occur as age at marriage may have increased at a faster or more monotonic pace when compared to rural areas (Quilodrán, 1991, 2001). Net of the factors associated with marriage timing (including marriage market indicators), a temporary, premarital migration spell also seems to be an especially acceptable mobility strategy (e.g., Parrado, 2004) in places with growing economic opportunities (Lindstrom and Lauster, 2001). It may be that a group of people who live in an economically dynamic context but have relatively few investment (and subsistence) opportunities are especially motivated to migrate in order to accumulate resources otherwise not available to them, given the relative lack of access to well-functioning credit and capital markets (Stark and Bloom, 1985).

Taking advantage of these opportunities may help them establish a better livelihood in their places of origin, whether by starting a (small) business venture or by buying real estate or building a house (Lindstrom, 1996; Parrado, 2004). This, in turn, may permit them to establish a family, in which they are expected to be the primary breadwinners even in places where paid and perhaps formal (i.e., industrial) female work is starting to be more common. For some of these families, however, the existence of more stable employment opportunities, including those for females in industry, may signify a lesser need for the male head to engage in U.S. migration. At the same time, these employment opportunities may also entail a better bargaining position for women, who seem in general more inclined to keep the core family unit together (Hondagneu-Sotelo, 1994). However, preliminary analyses (not shown here) on a subset of the sample where

some spouse characteristics are available suggest that the labor force participation of wives is not significantly associated with the likelihood of U.S. migration on the average.

NOTES

REFERENCES

Allison, P. D.

1996 "Fixed-effects Partial Likelihood for Repeated Events." *Sociological Methods & Research* 25(2):207–222.

Arroyo-Alejandre, J., J. A. D. León-Arias, and B. Valenzuela-Varela

1991 "Patterns of Migration and Regional Development in the State of Jalisco." In *Region and Sectoral Development as Alternatives to Migration*. Ed. S. Diaz-Briquets and S. Weintraub. Boulder, CO: Westview.

Auriat, N.

1991 "Who Forgets - An Analysis of Memory Effects in a Retrospective Survey on Migration History." *European Journal of Population-Revue Europeenne De Demographie* 7(4):311–342.

Axinn, W., T.E. Fricke, and A. Thornton

1991 "The Microdemographic Community Study Approach: Improving Survey Data by Integrating the Ethnographic Method." *Sociological Methods and Research* 20(2):187–217.

Bean, F. D., R. Corona, R. Tuiran, K. A. Woodrow-Lafield, and J. Van Hook

2001 "Circular, Invisible, and Ambiguous Migrants: Components of Difference in Estimates of the Number of Unauthorized Mexican Migrants in the United States." *Demography* 38(3):411–422.

Beaudry, P., and D. A. Green

2000 "Cohort Patterns in Canadian Earnings: Assessing the Role of Skill Premia in Inequality Trends." *Canadian Journal of Economics-Revue Canadienne D'Economique* 33(4):907–936.

Bustamante, J. A., W. Reynolds, and R. A. Hinojosa Ojeda

1992 *U.S.-Mexico Relations: Labor Market Interdependence*. Stanford, CA: Stanford University Press.

Carlson, E. D.

1985 "The Impact of International Migration upon the Timing of Marriage and Childbearing." *Demography* 22(1):61–72.

Cerrutti, M., and D. S. Massey

2001 "On the Auspices of Female Migration from Mexico to the United States." *Demography* 38(2):187–200.

Chavez, L. R.

1988 "Settlers and Sojourners - the Case of Mexicans in the United States." *Human Organization*, 47 (2): 95-108.

Cornelius, W. A.

1992 "From Sojourners to Settlers: The Changing Profile of Mexican Immigration to the United States." In *U.S. Mexico Relations: Labor Market Interdependence*. Ed. J. A. Bustamante, W. Reynolds, and R. A. Hinojosa Ojeda. Stanford, CA: Stanford University Press.

Durand, J., D. S. Massey, and R. M. Zenteno

2001 "Mexican Immigration to the United States: Continuities and Changes." *Latin American Research Review* 36(1):107–127.

Flores, N.

2005 "The Interrelation between Social Context, Social Structure, and Social Capital in International Migration Flows to the United States." Ph.D. Dissertation, University of Pennsylvania. Philadelphia, PA.

Flowerdew, R., and A. Al-Hamad

2004 "The Relationship between Marriage, Divorce and Migration in a British Data Set." *Journal of Ethnic and Migration Studies* 30(2):339–351.

Fussell, E., and D. S. Massey

2004 "The Limits to Cumulative Causation: International Migration from Mexican Urban Areas." *Demography* 41(1):151–171.

Goldman, N., C. F. Westoff, and C. Hammerslough

1984 "Demography of the Marriage Market in the United-States." *Population Index* 50(1):5–25.

Grasmuck, S., and P. Pessar

1991 *Between Two Islands: Dominican International Migration*. Berkeley and Los Angeles: University of California Press.

Hill, K., and R. Wong

2005 "Mexico-US Migration: Views from Both Sides of the Border." *Population and Development Review* 31(1):1–+.

Hondagneu-Sotelo, P.

1992 "Overcoming Patriarchal Constraints - The Reconstruction of Gender Relations among Mexican Immigrant Women and Men." *Gender & Society* 6(3):393–415.

Hondagneu-Sotelo, P.

1994 *Gendered Transitions: The Mexican Experience of Immigration*. Tucson: University of Arizona Press.

Jasso, G., and M. R. Rosenzweig.

1982 "Estimating the Emigration Rates of Legal Immigrants Using Administrative and Survey Data - the 1971 Cohort of Immigrants to the United-States." *Demography*, 19 (3): 279-290.

Juárez, F.

1996 "La Formación de la Familia y la Movilidad a las Áreas Metropolitanas en México: Un Nuevo Enfoque de la Interacción de los Eventos Demográficos." In *Nuevas Pautas Reproductivas en México*. Ed. Juárez, F., J. Quilodrán, and M. E. Zavala de Cosío. México: El Colegio de México.

Klevmarken, N. A.

1982 "On the Stability of Age-Earnings Profiles." *Scandinavian Journal of Economics* 84(4):531–554.

Liang, K. Y., and S. L. Zeger

1993 "Regression-Analysis for Correlated Data." *Annual Review of Public Health* 14:43–68.

Lindstrom, D. P.

1996 "Economic Opportunity in Mexico and Return Migration from the United States." *Demography* 33(3):357–374.

Lindstrom, D. P., and N. Lauster

2001 "Local Economic Opportunity and the Competing Risks of Internal and US Migration in Zacatecas, Mexico." *International Migration Review* 35(4):1232–1256.

Lindstrom, D. P., and S. G. Saucedo

2002 "The Short- and Long-term Effects of US Migration Experience on Mexican Women's Fertility." *Social Forces* 80(4):1341–1368.

Lloyd, K. M., and S. J. South

1996 "Contextual Influences on Young Men's Transition to First Marriage." *Social Forces* 74(3):1097–1119.

Marcelli, E. A., and W. A. Cornelius.

2001 "The Changing Profile of Mexican Migrants to the United States: New Evidence From California and Mexico." *Latin American Research Review*, 36 (3): 105-131.

Martin, T. C.

2002 "Consensual Unions in Latin America: Persistence of a Dual Nuptiality System." *Journal of Comparative Family Studies* 33(1):35–+.

Massey, D. S.

1987 "The Ethnosurvey in Theory and Practice." *International Migration Review* 21(4):1498–1522.

Massey, D. S.

1990 "Social Structure, Household Strategies, and the Cumulative Causation of Migration." *Population Index* 56(1):3–26.

Massey, D. S., J. Durand, and N. J. Malone

2002 *Beyond Smoke and Mirrors: Mexican Immigration in an Era of Economic Integration*. New York: Russell Sage Foundation.

Massey, D. S., and K. E. Espinosa

- 1997 "What's Driving Mexico-US Migration? A Theoretical, Empirical, and Policy Analysis." *American Journal of Sociology* 102(4):939–999.
- Massey, D. S., L. Goldring, and J. Durand
- 1994 "Continuities in Transnational Migration - An Analysis of 19 Mexican Communities." *American Journal of Sociology* 99(6):1492–1533.
- Massey, D. S., Massey, Douglas S, R. Alarcon, J. Durand, and H. Gonzalez
- 1987 *Return to Aztlan: The Social Process of International Migration from Western Mexico*. Berkeley: University of California Press.
- Mulder, C. H., and M. Wagner
- 1993 "Migration and Marriage in the Life-Course - A Method for Studying Synchronized Events." *European Journal of Population-Revue Europeenne De Demographie* 9(1):55–76.
- Oppenheimer, V. K.
- 1988 "A Theory of Marriage Timing." *American Journal of Sociology* 94(3):563–591.
- Ortiz, V.
- 1996 "Migration and Marriage among Puerto Rican Women." *International Migration Review* 30(2):460–484.
- Parrado, E. A.
- 2004 "International Migration and Men's Marriage in Western Mexico." *Journal of Comparative Family Studies* 35(1):51–+.
- Parrado, E. A., and R. M. Zenteno
- 2002 "Gender Differences in Union Formation in Mexico: Evidence from Marital Search Models." *Journal of Marriage and the Family* 64(3):756–773.
- Pebley, A. R., and N. Goldman
- 1986 "Legalization of Consensual Unions in Mexico." *Social Biology* 33(3–4):199–213.
- Quilodrán, J.

- 1980 "Tablas de Nupcialidad para México." *Demografía y Economía* 14, part 1 (41):27–67.
- Quilodrán, J.
- 1991 *Niveles de fecundidad y patrones de nupcialidad en Mexico*. México, D.F.: El Colegio de México, Centro de Estudios Demográficos y de Desarrollo Urbano.
- Quilodrán, J.
- 2001 *Un siglo de matrimonio en México*. México, D.F.: Colegio de México, Centro de Estudios Demográficos y de Desarrollo Urbano.
- Quinn, M. A., and S. Rubb
- 2005 "The Importance of Education-Occupation Matching in Migration Decisions." *Demography* 42(1):153–167.
- Riosmena, F.
- 2005 "Within, Between, and Beyond Space-Time: Three Essays on Latin America - US Migration Dynamics " Ph.D. Dissertation, University of Pennsylvania. Philadelphia, PA.
- Sandefur, G. D., and W. J. Scott
- 1981 "A Dynamic Analysis of Migration - An Assessment of the Effects of Age, Family and Career Variables." *Demography* 18(3):355–368.
- Stark, O., and D. E. Bloom
- 1985 "The New Economics of Labor Migration." *American Economic Review* 75(2):173–178.
- Zeger, S. L., and K. Y. Liang
- 1985 "Longitudinal Data-Analysis with Generalized Linear-Models." *Biometrics* 41(2):582–583.

		A. Marriage Characteristics									
		Age at marriage by type of marriage									
		p5	p10	q1	median	q3	p90	p95	mean	s.d.	
Total individuals in the sample		1,575	100%								
Total individuals ever marrying		1,553	98.6%								
Type of 1st Marriage											
	Religious only	23	1%	21	23	29	34	40	26.5	8.94	
	Civil only	273	18%	20	24	27	33	37	24.9	6.03	
	Religious and civil	1,091	70%	20	23	26	31	34	23.9	5.21	
	Consensual union	166	11%	21	25.5	32	42	46	27.6	8.67	
	No. ending 1st marriage before survey year	98	6%								
	n. of consensual unions ended (exc. legalizations)	15	9%								
	No. of consensual unions legalized	38	23%								
		B. Migration Characteristics									
		Age at trip by ever-migrant status									
		p5	p10	q1	median	q3	p90	p95	mean	s.d.	
No. of people with no US migration experience		1196	76%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
No. eventually migrating at least once		379	24%	17	25	35	44	48	28.7	9.85	
	Migrated for 1st time before marriage*	150	40%	16	21	24	26	28	21.4	4.51	
	Migrated for 1st time after marriage	229	60%	21	32	40	46	51	33.4	9.57	
No. eventually migrating at least once		379	24%								
	Migrated for 1st time before marriage*	150	40%								
	Migrated for 1st time after marriage	229	60%								
No. not returning from 1st trip by survey year		24	6%								
		C. Migration-Marriage Characteristics									
		Age at marriage by sequence status									
		p5	p10	q1	median	q3	p90	p95	mean	s.d.	
No. never migrating before survey year		1,196	76%	17	23	27	32	36	24.5	5.97	
No. eventually migrating at least once		379	24%	18	23	26	32	36	24.6	6.04	
	Migrated for 1st time before marriage*	150	40%	20	26	31	36	42	28.2	6.87	
	Migrated for 1st time after marriage	229	60%	17	22	24	27	30	22.3	4.07	

Notes: * Includes 6 never-married individuals (by the survey year)

Table 1. Descriptive Statistics on Prevalence and Timing of Marriage and First US Migration

	Nonmigrant	Single Migrant ^A	Married Migrant ^{AB}
(Five-year) birth cohort (REF=1953-1957)			
1933-1937	0.073 (0.26)	0.116 (0.32)	0.093 (0.29)
1938-1942	0.233 (0.42)	0.327 (0.47)*	0.220 (0.41)*
1943-1947	0.259 (0.44)	0.163 (0.37)*	0.234 (0.42)
1948-1952	0.338 (0.47)	0.299 (0.46)	0.300 (0.46)
<u>Socioeconomic characteristics:</u>			
Educational attainment (REF=6-11 years)	6.2 (4.63)	5.2 (3.65)*	4.5 (3.44)*
Less than 6 years	0.409 (0.49)	0.469 (0.50)	0.573 (0.49)*
12+ years	0.155 (0.36)	0.061 (0.24)*	0.066 (0.25)*
Occupation during person-year (REF=Unskilled)			
Out of the labor force	0.070 (0.26)	0.109 (0.31)	0.062 (0.24)
Skilled occupation	0.336 (0.47)	0.197 (0.40)*	0.199 (0.40)*
Cumulative labor force experience (in months)	115.0 (82.8)	98.5 (65.6)*	103.1 (59.4)*
One or more properties held during PY	0.103 (0.30)	0.082 (0.27)	0.049 (0.21)*
One or more businesses owned during PY	0.040 (0.20)	0.034 (0.18)	0.022 (0.15)
<u>Migration-related social capital:</u>			
Father a US migrant on or before PY	0.021 (0.14)	0.095 (0.29)*	0.057 (0.23)*
Mother a US migrant on or before PY	0.003 (0.06)	0.048 (0.21)*	0.018 (0.13)
At least one brother a US migrant by PY	0.037 (0.19)	0.116 (0.32)*	0.057 (0.23)
At least one sister a US migrant by PY	0.024 (0.15)	0.054 (0.23)	0.018 (0.13)
Pct. of people 15+ with US experience	7.3 (5.89)	10.5 (7.15)*	9.9 (6.67)*
<u>Municipality characteristics:</u>			
Pct of males in agriculture	0.489 (0.32)	0.526 (0.32)	0.605 (0.28)**
Pct of females in manufacturing	0.185 (0.12)	0.191 (0.14)	0.184 (0.14)
Female labor force participation rates	0.172 (0.07)	0.161 (0.08)	0.147 (0.07)*
Pct of people self-employed	0.262 (0.12)	0.293 (0.14)*	0.305 (0.13)*
Pct of people 12+ with 6+ years of education	0.303 (0.18)	0.256 (0.17)*	0.220 (0.15)**
Ratio of males 12+ in LF to (all) females 12+	1.266 (1.12)	1.020 (0.69)*	1.181 (1.04)
N	1,196	150	229

Notes:

* Significant at the 0.05 level

^A Reference for test of significance is non-migrant group

^B Reference for test of significance is single migrant group

Table 2. Means and standard deviations of covariates in the analysis

Table 3

	Model 1		Model 2	
	β	S.E.	β	S.E.
Intercept	-7.678	(0.792) **	-7.143	(0.818) **
Age groups (REF=40-44)		*		*
15-17	2.041	(0.511) **	2.080	(0.532) **
18-20	2.396	(0.458) **	2.414	(0.473) **
21-23	2.676	(0.425) **	2.658	(0.443) **
24-26	2.276	(0.367) **	2.254	(0.384) **
27-30	1.816	(0.330) **	1.807	(0.352) **
30-34	1.281	(0.378) **	1.291	(0.395) **
35-39	1.163	(0.295) **	1.172	(0.311) **
Period (REF=Before 1965)				
1965-1969	-0.281	(0.236)	-0.316	(0.235)
1970-1974	0.161	(0.322)	0.122	(0.320)
1975-1979	0.058	(0.451)	0.066	(0.451)
1980-1984	-0.182	(0.546)	-0.088	(0.555)
1985-1989	0.187	(0.660)	0.298	(0.659)
1990-1994	-0.563	(0.955)	-0.425	(0.956)
1995-2002	1.008	(0.873)	1.122	(0.879)
<u>Socioeconomic characteristics:</u>				
Educational attainment (REF=6-11 years)				
Less than 6 years	0.121	(0.125)	0.120	(0.126)
12+ years	-0.669	(0.173) **	-0.674	(0.174) **
Occupation during person-year (REF=Unskilled)				
Out of the labor force	0.177	(0.254)	0.159	(0.247)
Skilled occupation	-0.266	(0.155) +	-0.277	(0.160) +
Cumulative labor force experience (in months)	0.004	(0.001) *	0.004	(0.001) *
One or more properties held during PY	-0.310	(0.160) +	-0.317	(0.160) +
One or more businesses owned during PY	-0.186	(0.282)	-0.183	(0.281)
<u>Migration-related social capital:</u>				
Father a US migrant by PY	0.493	(0.339)	0.504	(0.333)
Mother a US migrant by PY	0.770	(0.821)	0.742	(0.825)
At least one brother a US migrant by PY	0.984	(0.164) **	1.012	(0.157) **
At least one sister a US migrant by PY	0.049	(0.249)	0.039	(0.255)
Pct. of people 15+ with US experience	0.092	(0.022) **	0.090	(0.022) **
Pct of people 15+ with US experience - squared	-0.001	(0.001) *	-0.001	(0.001) *
<u>Marital status/duration and family formation (main effects):</u>				
Never-married before PY (REF=ever-married)	0.097	(0.170)	-0.863	(0.314) +
No. of children of the head 0-1 year-old	0.078	(0.116)	0.063	(0.115)
No. of children of the head 2-5 years-old	-0.187	(0.049) **	-0.182	(0.048) **
No. of children of the head 6-15 years-old	0.023	(0.050)	0.035	(0.051)
No. of children of the head 16-19 years-old	0.065	(0.108)	0.068	(0.108)
<u>Municipality characteristics:</u>				
At least 50% of males in LF in agriculture	-0.240	(0.199)	-0.454	(0.242) +
At least 10% of females in LF in manufacturing	0.125	(0.170)	-0.158	(0.289)
Pct of females in labor force	0.005	(0.018)	0.003	(0.019)
Pct of people self-employed	0.014	(0.007) +	0.013	(0.008) +
Ratio of males 12+ in LF to (all) females 12+	-0.001	(0.001)	-0.001	(0.001)
At least 35% of people 12+ with 6+ years of ed.	-0.118	(0.233)	-0.413	(0.334)
<u>Family formation, macro-micro interaction effects:</u>				
Never-mar. * 50%+ of males in LF in agriculture	N/A		0.668	(0.283) *
Never-mar. * 10%+ of females in LF in manuf.	N/A		0.541	(0.331)
Never-mar. * 35%+ people 12+ w/6+ yrs of ed.	N/A		0.540	(0.238) +
Person-years	40,897		40,897	
Log-likelihood	-1,848.1		-1,843.8	

Notes:

** p < 0.01 * 0.01 < p < 0.05 + 0.05 < p < 0.10

Table 4

No	+50% Males in LF in Agriculture	+10% Females in LF in Manufacturing	+35% People 12+ w/6+ Yrs of Education	Community Years	Percent	Proposed community type
1	No	Yes	Yes	746	40%	Established urban-industrial town
2	Yes	No	No	352	19%	Traditional rural community
3	Yes	Yes	No	340	18%	Early industrializing rural commu
4	Yes	Yes	Yes	200	11%	Town of recent industrialization
5	No	Yes	No	126	7%	Neighborhood in urban area
6	Yes	No	Yes	41	2%	
7	No	No	Yes	35	2%	
8	No	No	No	15	1%	
			Total	1,855	100%	

Table 4. Distribution of Community- Years by Community Types

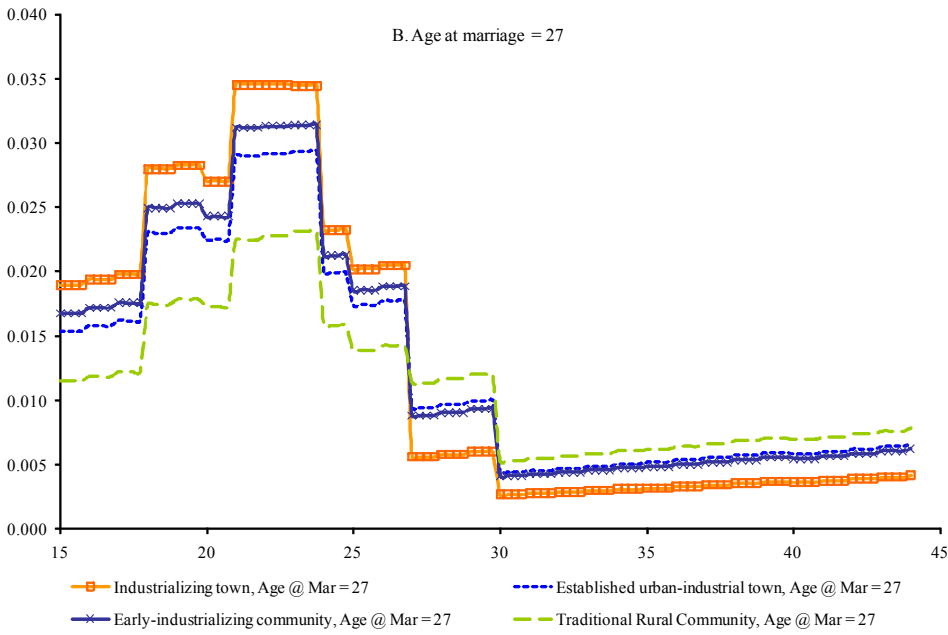
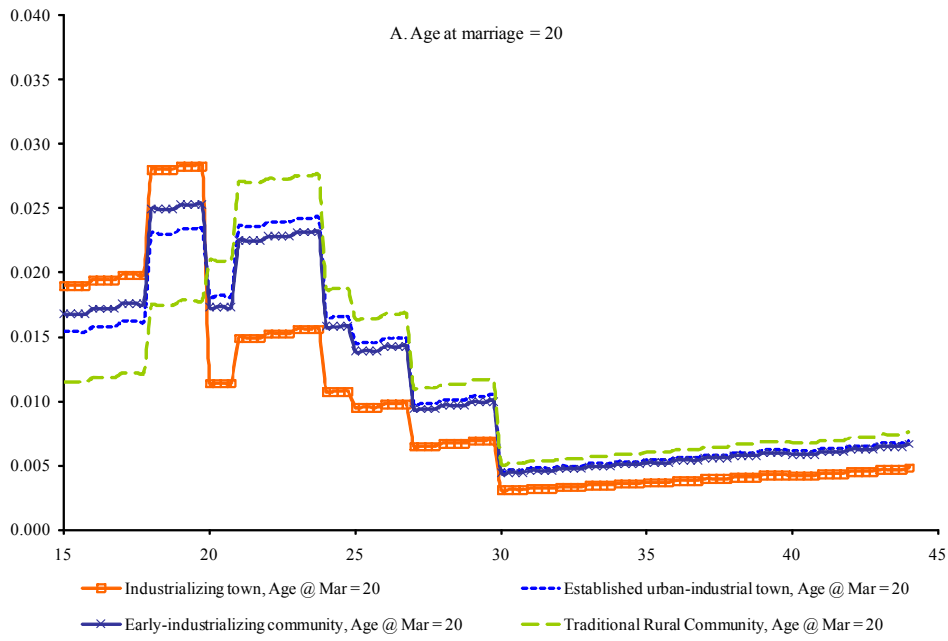


Figure 1. Predicted Age-specific Probabilities of Making a First U.S. Trip by Community Type and Age at Marriage = 20 and 27 Years

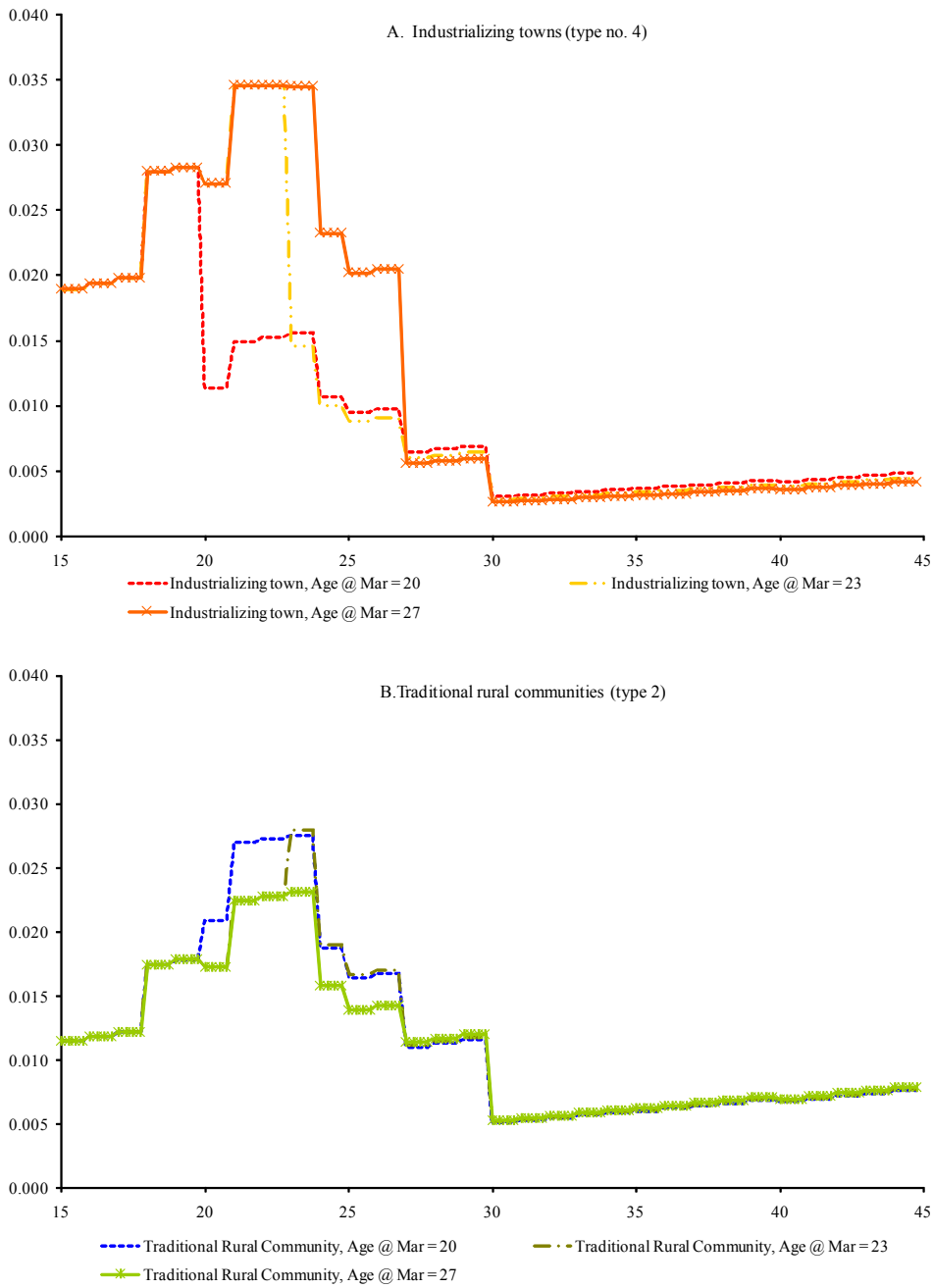


Figure 2. Predicted Age-specific Probabilities of Making a First U.S. Trip by Age at Marriage for Industrializing and Rural Communities

¹ The measure commonly used in these studies, the migration prevalence ratio, is defined as the proportion of people above age 15 with some *previous* U.S. migration experience in a community in a given year (for a more detailed description and methodological discussion of the measure, see Massey et al., 1994).

² Calculations not shown here but available from the authors show that the vast majority of people marry while in Mexico; a smaller minority do so during a year when they spent less than 6 months in the U.S. The available information on the migration and labor history of spouses shows that most of them were located in Mexico during the person-year of marriage.

³ Alternatively, we could just follow all people to the year of the survey and report their experiences. But this approach also has problems, insofar as some time-varying information (e.g., property acquisition) may be affected by migration.

⁴ In life table notation, ${}_{35}q_{15} = 1 - l_{45} = \prod_{x=15}^{44} {}_1q_x$, where ${}_nq_x$ denotes the probability of becoming a U.S.

migrant between ages x and $x + n$, and l_x is the cumulative probability of remaining a migrant from age 15 to age x ($x \geq 15$).

⁵ The pre-vs.-post-marital migration gradient in established urban-industrial centers lies between that of industrializing communities and that of rural areas, though migration overall is less likely to occur in such settings (though it has changed in more recent years, see Bustamante et al., 1992, Cornelius, 1992, Durand et al., 2001, Fussell and Massey, 2004).