Pioneers and Followers: Migrant Selectivity and the Development of U.S. Migration Streams in Latin America

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Abstract

This paper presents a method for dividing the historical development of community migration streams into an initial period and a subsequent take-off stage with the purpose of systemically differentiating between pioneer migrants and follower migrants. The analysis is organized around the following research questions: (1) Can we empirically identify a junction point in the historical development of community based migration streams that marks the transition from an initial stage of low levels of migration and gradual growth into a take-off stage in which the prevalence of migration grows at a more accelerated rate?; (2) Does this juncture point exist at roughly similar migration prevalence levels across communities?; (3) Are first-time migrants in the initial stage (pioneers) different from first-time migrants in the take-off stage (followers)?; (4) What is the nature of this migrant selectivity?; and (5) Does the nature and degree of pioneer selectivity vary across country migration streams?

Introduction

Selectivity has always been a fundamental part of migration processes. Economic migrants are rarely a random cross-section of origin populations, but rather are selected for a number of characteristics that set them apart from their non-migrant peers. In the case of international migration they tend be young, often male, and they are often characterized as being adventurous and risk averse. The most selective of international migrants are the first migrants to leave for distant destinations, the so called pioneer migrants. These first migrants do not benefit from the information and support provided by migration networks that is so instrumental in getting to a destination, getting a job, and finding a place to stay. The absence of this support is what sets pioneers apart from the migrants that follow.

Pioneer migrants play a critical role in the development of migration streams. They are the human catalysts for new migration. The choices they make set in motion processes of cumulative causation and channelization that reverberate across successive generations of follower migrants. Given their fundamental role in setting migration processes into motion it is somewhat surprising that so little attention has been given to identifying pioneers and comparing them to other migrants. The migration literature is full of references to the high selectivity of pioneer migrants, but there are few systematic definitions or comparisons of pioneers and followers. In this paper we present a method for dividing the historical development of community migration streams into an initial period and a subsequent take-off stage with the purpose of systemically differentiating between pioneer migrants and follower migrants. Our analysis is organized around the following research questions: (1) Can we empirically identify a junction point in the historical development of community based migration streams that marks the transition from an initial stage of low levels of migration and gradual growth into a take-off stage in which the prevalence of migration grows at a more accelerated rate?; (2) Does this

juncture point exist at roughly similar migration prevalence levels across communities?; (3) Are first-time migrants in the initial stage (pioneers) different from first-time migrants in the take-off stage (followers)?; (4) What is the nature of this migrant selectivity?; and (5) Does the nature and degree of pioneer selectivity vary across country migration streams?

To answer these questions we use retrospective life history data collected in 32 communities from Mexico, Guatemala, Nicaragua, Costa Rica and the Dominican Republic. Our analysis makes a methodological contribution to the study of cumulative causation and the development of community-based migration streams, and to the study of migrant selectivity. It provides an analytical framework for examining migrant selectivity and cumulative causation in diverse national settings and historical periods.

Background

Cumulative Causation and Pioneer Migrants

The very idea of pioneer migrants implies the concept of a natural progression in the historical development of community-based migration networks. Migration is often initiated in communities by a small number of individuals whose decisions about when and where to migrate may be in the hands of labor recruiters or the outcome a series of unanticipated events, but which have important implications for the destinations and jobs of the migrants that follow. The process of migrant channelization from places of origin to specific places of destination is a function of the operation of social networks in migration processes. Migration networks reduce the costs of migration by providing novice migrants with information about opportunities in places of destination and by reducing the costs of migration through assistance in getting to a destination, finding a place to stay, and most importantly, finding employment. The expectation that pioneer migrants are more selective than later migrants is linked to the decreasing selectivity of

migration streams over time. This developmental process that reduces the selectivity of migration streams is cumulative causation. As the number of people in a community grow who have migration experience, the relative costs of migration decline and the proportion of people in a community who know and are related to someone with migration experience increases. The process of network growth, and declining migration costs and migrant selectivity, occurs at an accelerating rate until everyone who is likely to migrate in the community has migrated. The idea that migration levels will grow in a community at an accelerating rate after an initial period of gradual growth, and up to some point of saturation or network maturity, is implicit in the theory of cumulative causation. The transition from an initial stage of migration to a take-off stage provides a useful juncture point for distinguishing pioneer migrants from other migrants that follow. Few attempts have been made to model the early growth and take-off stages of community migration streams, and to systematically identify juncture points. Massey, Goldring and Durand (1994) used cut-points of 10 percent, 20 percent, 30 percent, and 40 percent in migration prevalence ratios to define stages in the development of community migration systems.

Data and Methods

We organize our analysis into two parts. First, we fit linear spline regression models to the community-level trends in the prevalence of male U.S. migration. We use this analysis to locate juncture points in the historical development of migration streams that mark the transition from an initial stage to a take-off stage. We then use these junction points to classify male household heads with U.S. migration experience into pioneer migrants and follower migrants. Second, we compare the selectivity of pioneer migrants with that of followers on age, marital

status, education, measures of migration resources, and capital assets. We make comparisons of means within countries for rural and urban communities, and for the total pooled sample.

As a first preliminary step in our analysis we produced graphs of the prevalence of male U.S. migration for all 36 communities surveyed by the Latin American Migration Project (LAMP), and for 61 Mexican communities surveyed by the Mexican Migration Project (MMP) since 1998. From these 97 communities, we selected communities with migration streams: (1) that were initiated in the post-bracero period, defined as having prevalence levels below 0.05 prior to 1965; and (2) that had transitioned into the take-off stage, defined as reaching 0.10 or more after 1965. These restrictions yielded a sample of 32 communities from Guatemala, Costa Rica, Nicaragua, the Dominican Republic, and Mexico. The annual prevalence of male U.S. migration is defined as the proportion of adult men ages 15 and above in a calendar year who had ever been to the United States in that year or in a prior year. It is based on the timing of the first U.S. trip for male household heads, the adult sons of household heads, and other male household members who were reported in the household registries of the LAMP and MMP survey questionnaires.

Figure 1 presents the historical trends in the prevalence of male U.S. migration for the 32 communities grouped by country and region. The graphs are left-truncated at prevalence levels below 0.01 and are right-truncated at the time of the survey. For the purpose of comparison the historical trends in the prevalence of female U.S. migration are presented in the appendix. Several patterns emerge from the figures. In general, the prevalence levels increase monotonically, with an initial period of flat or slow growth followed by a period of rapid acceleration. In some communities the period of rapid growth is followed by a leveling-off of the prevalence level. The trends in the prevalence levels tend to be similar within country and region

and different between countries. These basic patterns are consistent with the process of cumulative causation, and they reflect the influence of contextual factors unique to countries and regions on the development of migration steams.

[Figure 1 about here]

The relatively flat or gently sloping portions of the graphs correspond to the initial, pioneer stage of U.S. migration when relatively few men in the communities have traveled to the United States. The duration of this initial stage varies substantially across countries and regions from a few years to more than ten years. In almost all communities it is followed by an upward swing in the prevalence levels that corresponds to a take-off stage in U.S. migration. During the take-off stage the proportion of men with U.S. migration experience increases, although at varying rates across the countries and regions. Male migration increases most rapidly in Quiché, Guatemala, southern Mexico, and in several of the communities in northern and central Mexico.

After a period of accelerated growth, the rate of change in prevalence levels slows and the curves level-off in many communities. This leveling-off in prevalence levels corresponds to the mature stage in U.S. migration, and it occurs at varying levels. In some communities it occurs when as few as 10 to 15 percent of men have U.S. migration experience, whereas in other communities it occurs when 35 to 45 percent of men have U.S. migration experience. At this stage in the development of community migration streams the incentives or disincentives to migrate become more important than the opportunity to migrate, in influencing the decision to migrate for the first time. At the mature stage virtually every household in the community is socially connected to someone who has U.S. migration experience and who can provide assistance in migrating to the United States. The prevalence of male migration stops growing because the opportunity to migrate has reached every socioeconomic segment of the community.

The level of migration at the mature stage varies across communities in relation to the income opportunities available locally and the relative costs and benefits of U.S. migration. We would expect wealthier communities to reach the mature stage at lower levels of migration than poorer communities.

The prevalence of women's migration to the United States in the sampled communities is substantially lower than men's, and women's migration streams tend to start five to ten years after the initiation of men's migration. The one important exception to this pattern is the Dominican Republic. In three of the four communities sampled in the Dominican Republic, the historical development of women's U.S. migration parallels very closely that of men, and in two of the communities women's U.S. migration actually takes-off before men's. The gap in the prevalence of men and women's U.S. migration is greatest in the communities in Guatemala and southern Mexico, many of which are predominantly indigenous in composition.

We fit linear spline regression models to the trend lines of the prevalence of male migration for each of the 32 communities. The linear spline model uses a series of connected straight lines to describe a nonlinear relationship. The model assumes that a straight line best describes the relationship within discrete intervals, but the slope of the line changes across intervals. The point on the line where there is a change in the slope is called a knot. The trend lines in the prevalence of U.S. migration can be divided into up to three intervals corresponding to the initial stage of migration, the take-off stage, and the mature stage. The year that marks the transition from one stage to the next is the location of a knot. Because our primary focus is in comparing pioneer migrants with follower migrants, we focus our attention on finding the year that best marks the transition from the initial stage to the take-off stage. For each community we estimated a series of linear spline regression models in which we shifted the location of the take-

off stage knot one year at a time. Our criteria for the best model is the model with the largest F-statistic, and a positive and significant ($p>0.10$) coefficient for the marginal spline. In communities that reached the mature stage by the time of the survey, we defined a knot marking the transition from the take-off stage to the mature stage. Communities were defined as reaching the mature stage if the mean rate of change in the prevalence level was zero or negative in three or more consecutive years at a prevalence level of 0.15 or greater.

Summary statistics from the best fitting spline regression models are presented in Table A1 in the appendix. Ten of the communities had reached the mature stage at prevalence levels ranging from 15 percent of men to 45 percent of men with U.S. migration experience. Using our criteria for finding the best fitting model, we identified a take-off point in 21 of the 32 communities. In the eleven communities without a clearly identifiable take-off point, a spline did not provide a better fit to the data over a single straight line. The fit of the linear models is exceptionally good in all of the communities, with R^2 ranging from a low of 0.816 to a high of 0.995. The best fitting models tend to be the models that include a spline for differentiating the initial stage from the take-off stage. The prevalence level at the first knot or take-off point ranges from a low of around two percent to a high of eleven percent of men, with 13 of the 21 take-off points occurring at prevalence levels below five percent.

The very high R^2 statistics signal a remarkably high degree of regularity in the development of the male U.S. migration streams in the sampled communities. What distinguishes the different historical development trends is the length of the initial stage, the level at which migration takes-off in the community, the rate at which it takes-off, and the level at which the prevalence of migration stops growing.

Pioneers and Followers

We use the take-off points in the community migration streams to distinguish pioneer migrants from follower migrants. In the eleven communities that did not have a clearly identifiable take-off point we use the within country mean prevalence level at the take-off point, and in the case of the single Nicaraguan community we use the mean prevalence level at the take-off point for all 21 communities. We restrict our analysis of pioneers and followers to male household heads because data on business and agricultural land ownership was not collected for the adult children of household heads who were members of other households. Table 1 presents the selected characteristics of the 32 community samples that we use in the comparison of pioneers and followers. The pooled sample includes retrospective information for 3,562 male household heads. Close to 19 percent of these men had U.S. migration experience, and of the men with U.S. migration experience, roughly one-quarter were pioneer migrants. By definition, pioneer migrants are a very small if not select group of men: less than five percent of male household heads in the sample. The number of pioneers in each community is too small to provide sufficient statistical power for difference of means tests. All the community samples in the LAMP and MMP come with sampling weights based on the inverse of the sampling fractions. We adjust the sampling weights to preserve the total number of observations and use the weights in our analysis of the means. The sampling weights allow us to pool the community samples in order to increase statistical power without giving undue influence to particular community samples. Nevertheless, we provide country means, rural and urban means within countries, and means for all communities pooled to check for consistency in basic relationships across countries and rural-urban places.

[Table 1 about here]

Stage in the Life-cycle and Human Capital

Table 2 presents the mean age at first U.S. trip and the percent of migrants married at the time of first trip for pioneers and followers. Overall, pioneers are significantly younger than followers at the time of their first U.S. trip. On average pioneers made their first U.S. trip when they were in their mid- to late-twenties, whereas followers tend to migrate for the first time when they are in their early- to mid-thirties. The difference in ages is largest in rural areas, although Guatemala is an exception. Consistent with their earlier age at first migration, pioneer migrants were also more likely than followers to be single when they made their first trip. Slightly more than one-half of pioneers were married at the time of their first trip compared to two-thirds of followers. However, in contrast to age at first trip, the differences in marital status tend to be greatest in urban areas because of the typically later age at marriage in urban compared to rural places. In the Mexican urban communities 42 percent of pioneers were married compared to 69 percent of followers, and in the Nicaraguan urban community 50 percent of pioneers were married compared to 85 percent of followers. The younger age and greater likelihood of being single found among pioneer migrants compared to followers suggests that pioneers are at an earlier stage in the life-course when they migrate, and therefore have fewer or weaker commitments at home to hold them back or to make an unsuccessful trip too costly to be worth the risk.

[Table 2 about here]

Table 2 also presents the mean years of schooling for pioneers and followers, as well as non-migrants. Because the vast majority of men in the sampled communities complete their schooling during childhood or adolescence before migration typically occurs, we can compare pioneers and followers to non-migrants. Only one of the 16 difference of means tests comparing

pioneers and followers is statistically significant. Rural pioneer migrants in Costa Rica tend to have more years of schooling than rural follower migrants. In all of the other comparisons the differences are relatively small and statistically insignificant. Taylor and others (19xx) have argued that pioneer migrants are selected from the middle of the income distribution. They have an incentive to migrate and the resources to finance a risky trip, whereas the poor do not have the resources to migrate and the wealthy do not have the incentive. An individual's relative position in the educational distribution tends to be a fairly good proxy of one's relative position in the income distribution. Pioneers could be drawn from the center of the educational distribution and followers from the entire distribution, with no difference in their respective means. To check whether pioneers are more concentrated in the center of the distribution we also compared the variances of the distributions of schooling for pioneers and followers. We found no evidence of smaller variances for pioneers compared to followers.

Whereas pioneer migrants do not appear to be selected for higher levels of education compared to follower migrants, migrants in general are selected for higher levels of education than non-migrants. In the rural Mexico, Guatemala, and Costa Rica samples, and in the urban Mexico, Guatemala, and Nicaragua samples, migrants (pioneers and followers combined) have significantly greater mean years of schooling than non-migrants. The difference in means ranges from a high of 6.0 years in Nicaragua to a low of 1.2 years in rural Mexico (migrant means not shown in table). In all 16 of the possible comparisons between migrants and non-migrants, the mean years of schooling for migrants are greater than the mean years for non-migrants. This result is consistent with the findings from other studies of migrant selectivity from Latin America to the United States.

Migration Resources

We examine three measures of migration resources: (1) the number of immediate family members (parents and siblings) of the household head who had made a U.S. trip prior to the household head's first trip; (2) internal migration experience, and (3) access to legal documents on the first U.S. trip. Prior migration experience, access to family members with migration experience, and the opportunity to migrate legally to the United States are all known to have a strong influence on the likelihood of initiating a trip to the United States. By definition pioneers will have fewer social ties to experienced migrants than follower migrants. The results presented in Table 3 confirm this expectation. On average followers have twice as many family members with U.S. migration experience at the time of first migration than pioneer migrants. Overall about one-in-four pioneer migrants had one sibling or parent with prior U.S. migration experience compared to one-in-two follower migrants. The greater number of migrant kin to which followers have access lowers the barriers to migration and at the very least is likely to reduce the selectivity of migrants with respect to risk aversion.

[Table 3 about here]

A common finding in migration studies is that individuals who migrate in a prior period are more likely to migrate in a subsequent period than individuals with no prior migration experience. This pattern can be been attributed to the selectivity of migrants as well as the importance of experience in influencing subsequent behavior. Migrants are less risk averse than non-migrants and have greater economic mobility aspirations. Experienced migrants are also better prepared to cope with the uncertainties and disruptiveness of a new trip and therefore are in a better position to undertake migration than non-migrants. In the case of international migration to the United States we might expect prior internal migration experience to be more

common among pioneer migrants than follower migrants. This pattern would be consistent with selectivity for a higher tolerance of risk. It also would be consistent with a switch from internal destinations to international destinations that is often observed in rural migrant sending communities when more remunerative international migration opportunities become available. Contrary to expectations, pioneers and followers are roughly equally like to have had prior internal migration experience at the time of their first trip to the United States. Around one-in-four to one-in-three pioneer and follower migrants had internal migration experience prior to making a first U.S. trip. In the within country comparisons, the differences in means are significant only in rural Costa Rica and urban Dominican Republic. However, the directions of the differences are opposite. Pioneer migrants in rural Costa Rica are more likely than follower migrants to have internal migration experience, whereas in urban Dominican Republic pioneer migrants are less likely than followers to have internal migration experience prior to first U.S. trip.

The third migration resource that we examine is access to legal documents on first U.S. trip. International migration streams are often initiated through state sponsored labor recruitment programs, which provide pioneer migrants with legal documentation for entry and employment. The bracero program that brought x.x million temporary workers from Mexico into the United States between 1942 and 1964 is a prime example of a state sponsored migrant labor program. All international migration streams are not initiated as temporary worker programs. Individual-level employment ties established in the origin country with destination country firms, university training, or marriage are examples of other conditions that generate migration. Whether pioneers arrive through a temporary workers program or through other more idiosyncratic conditions,

once set in motion, the processes of network formation and cumulative causation open-up opportunities for others to migrate with or without legal documents.

Overall pioneer migrants are significantly more likely to have had legal documents on their first U.S. trip than follower migrants. Forty-two percent of pioneers migrated legally compared to 34 percent of followers. However, the pattern of differences varies across countries. In the rural and urban Mexican communities pioneers are more likely to migrate legally than followers, whereas in the rural Guatemalan and Costa Rican communities pioneer migrants are less likely than follower migrants to have had legal documents. In the Dominican Republic all pioneer and follower migrants had legal documents on their first U.S. trip. These important country differences in the legal status of first U.S. trip reflect the specific geopolitical and historical conditions under which migration to the United States was initiated as well as the relative ease of clandestine entry into the United States.

Capital Assets

We found clear evidence of positive migrant selection with respect to education, which is a good measure of earnings capacity in the home country. Migrants consistently had on average more years of schooling than non-migrants. However, contrary to expectations, we found no evidence to suggest that pioneer migrants were more selective than follower migrants. In many developing economies, capital assets in the form of business or agricultural land ownership are an important alternative source of household income to wage employment. Table 4 presents the percent of pioneer and follower migrants who owned a business or agricultural land at the time of first U.S. migration. Business ownership includes retail and service activities that entail a fixed location, such as retail, repair, or manufacturing establishments, or a service that entails fixed capital such as trucking or transportation. Street vending, market stalls, or self-employment

is not treated as a business. In the total pooled sample comparison, pioneer migrants were significantly less likely than follower migrants to own a business at the time of their first U.S. trip. Six percent of pioneers owned a business compared to 12 percent of followers. The difference is even larger and more significant among migrants from rural communities, where five percent of pioneers owned a business compared to 15 percent of followers. Four of the within country differences are also significant, and in the same direction: pioneers are less likely to own businesses than followers.

[Table 4 about here]

The results for agricultural land ownership are similar to those of business ownership. Overall pioneers are significantly less likely than followers to own agricultural land at the time of their first U.S. trip. The within country differences are greatest in Mexico and Guatemala where followers are two-to-three times as likely as pioneers to have owned agricultural land. In total, seven of the 16 difference of means tests are significant and in the direction of lower land ownership among pioneers compared to followers. The results for capital assets reveal a very clear pattern of lower asset ownership among pioneer migrants compared to followers. In the cases of both business ownership and agricultural land ownership pioneers are about half as likely as followers to have either of these assets at the time of first migration to the United States. While pioneers are on average two years younger than followers at the time of first migration, this age difference is not large enough to attribute the difference in asset ownership to stage in the life cycle. Clearly pioneers are at a relative disadvantage compared to follower migrants in terms of income capacity at the time of first migration. This disadvantage is not in the area of human capital, or earnings capacity, but rather in the ownership of productive capital assets that are a critical source of income in many households in the study areas. Overall, xx percent of

households in the communities in our analytical sample owned a business and xx percent of households owned agricultural land. Migration to the United States is a strategy that individuals and households use to accumulate savings for starting up businesses or purchasing farmland.

Conclusions

Prior studies on migrant selectivity have described pioneer migrants as adventurous risk-takers with high aspirations for economic mobility. Good measures of these personality traits cannot be obtained from retrospective survey data, thus making it difficult to prove or refute these descriptions. In this chapter we do not find anything that challenges these characterizations, but we are able to demonstrate that there are features of the social and economic position of pioneer migrants that place them in better position to take-on the risks of migration at an early stage than others who migrant at a later stage. Pioneers tend to be slightly younger and are less likely to be married than followers, and they are considerably less likely to have businesses or own agricultural land. Thus, they are in a better position to take a risky trip because they have less to lose from a failed trip. As single, young men their financial commitments at home are less than their married peers, and without a business or farmland to hold them back, they are less restrained in the use of their time and labor. In a sense, pioneers are more likely to be free agents than follower migrants. The economic consequences of their lost income are less severe than is the case with others: They are unlikely to be primary earners in their households, they less likely to be the proprietors of a business that requires their daily involvement, and they are less likely to have primary responsibility for the cultivation of farm land and the care of livestock. On the other hand, pioneers stand to gain more in relative terms than followers from a successful trip. With the savings they acquire from a successful trip they can establish a business or purchase farmland, and hence improve their position in the local income distribution.

Table 1. Selected Sample Characteristics, LAMP and MMP (Male Household Heads).

Country/Place (Survey years)	Number of communities	Number of households in sample	Number of pioneers	Number of followers	Number of non-migrants
Mexico (1998-2007)	14	1,947	67	230	1,364
Rural	7	806	33	143	532
Urban	7	1,141	34	87	832
Guatemala (2000-2004)	10	1,083	45	140	752
Rural	5	219	18	43	143
Urban	5	864	27	97	609
Costa Rica (2000-2002)	3	596	39	81	342
Rural	1	199	20	30	119
Urban	2	397	19	51	223
Nicaragua/Urban (2002)	1	202	4	13	118
Dom. Rep. (2000-2001)	4	560	11	42	314
Rural	1	139	2	13	79
Urban	3	421	9	29	235
Total	32	4,388	166	506	2,890
Rural	14	1,363	73	229	873
Urban	18	3,025	93	277	2,017

Note: Unweighted number of observations.

Table 2. Life Cycle and Human Capital Resources at Time of First U.S. Trip, Pioneers, Followers, and Non-migrants, Male Household Heads, LAMP and MMP.

Country/Place	Mean age at time of first trip		Percent married at time of first trip		Mean years of schooling		
	Pioneers	Followers	Pioneers	Followers	Pioneers	Followers	Non-migrants[a]
Mexico	28.6	30.3	49.1**	71.5	6.9	7.2	6.7
Rural	27.9*	32.0	61.5	74.4	5.6	5.4	4.2**
Urban	28.9	29.0	41.9**	68.8	7.6	8.6	7.6*
Guatemala	29.6	30.7	67.2	76.3	6.6	6.6	5.4**
Rural	31.5	31.0	94.3	83.5	2.2	3.1	1.5**
Urban	29.3	30.7	62.1	75.3	7.4	7.1	5.7**
Costa Rica	26.3**	31.3	57.3	63.6	7.3	7.6	7.1
Rural	27.8*	34.3	70.0	76.7	7.6*	5.9	5.2**
Urban	25.3	30.0	47.8	58.1	7.1	8.3	7.9
Nicaragua/Urban	22.0**	36.8	50.0	84.6	12.0	12.7	6.5**
Dom. Rep.	30.9	30.2	52.5	40.6	9.6	10.3	9.8
Rural	29.0	35.8	50.0	76.9	6.0	7.7	7.0
Urban	31.0	29.1	52.7	33.6	9.9	10.8	10.1
Total	28.5*	30.6	54.5**	67.9	7.3	7.6	7.1**
Rural	28.3**	32.4	66.7	75.4	5.7	5.5	4.4**
Urban	28.5	29.9	50.3*	63.8	7.9	8.7	7.7**

Note: ** $p<0.01$, * $p<0.05$, † $p<0.10$.
[a]Means for non-migrants compared to means for migrants (pioneers and followers together).

Table 3. Migration Resources at Time of First U.S. Trip, Pioneers and Followers, Male
Household Heads LAMP and MMP.

Country/Place	Mean number of U.S. migration network partners at time of first trip		Percent with internal migration experience at time of first trip		Percent with legal documents on first U.S. migration at time of first trip	
	Pioneers	Followers	Pioneers	Followers	Pioneers	Followers
Mexico	$0.24^{\dagger}$	0.49	20.5	26.3	30.6**	11.9
Rural	0.32	0.46	28.9	32.1	16.2*	0.8
Urban	0.20	0.52	16.0	21.4	38.3*	21.1
Guatemala	0.19**	0.59	30.1	31.2	22.3	23.4
Rural	$0.28^{\dagger}$	0.64	66.8	50.0	$0.0^{\dagger}$	7.7
Urban	0.17*	0.58	23.2	28.7	26.5	25.5
Costa Rica	0.17*	0.65	35.6	27.1	$56.4^{\dagger}$	74.3
Rural	0.05*	0.57	40.0*	16.7	25.0**	63.3
Urban	0.27	0.68	32.2	31.4	80.0	78.8
Nicaragua/Urban	0.00*	1.00	25.0	46.2	50.0	84.6
Dom. Rep.	0.62	0.83	22.8	46.5	100.0	100.0
Rural	0.00*	0.62	50.0	7.7	100.0	100.0
Urban	0.67	0.87	$20.6^{\dagger}$	53.9	100.0	100.0
Total	0.26**	0.58	25.3	30.2	$42.2^{\dagger}$	33.8
Rural	0.24*	0.50	36.4	30.2	19.5	14.1
Urban	0.28**	0.62	22.4	29.7	52.3	42.9

Note: ** $p<0.01$, *$p<0.05$, $^{\dagger}p<0.10$.

Table 4. Business and Agricultural Land Ownership at Time of First U.S. Trip, Pioneers and Followers, Male Household Heads LAMP and MMP.

Country/Place	Percent who own a business at time of first trip		Percent who own farm land at time of first trip	
	Pioneers	Followers	Pioneers	Followers
Mexico	7.2	10.2	9.8†	18.9
Rural	6.0*	17.7	19.3	32.2
Urban	7.8	3.9	4.7*	7.8
Guatemala	7.2	12.2	6.5**	20.8
Rural	16.3	5.0	22.8†	48.1
Urban	5.5	13.2	3.4*	17.2
Costa Rica	3.2*	13.2	12.9	11.4
Rural	0.0	3.3	30.0	30.0
Urban	5.6	17.3	0.0	3.7
Nicaragua/Urban	25.0	23.1	0.0	7.7
Dom. Rep.	0.0*	17.0	5.0	1.2
Rural	0.0	15.4	0.0	7.7
Urban	0.0*	17.3	5.4	0.0
Total	6.0*	12.0	9.0*	16.0
Rural	5.3**	15.1	21.8	31.6
Urban	6.1	10.6	3.7†	8.5

Note: ** $p<0.01$, *$p<0.05$, $^{†}p<0.10$.

Appendix. Table A1. Male and Female Migration Prevalence Levels and Summary Statistics for Linear Regression Models of Historical Male Migration Prevalence Levels, LAMP and MMP.

Country/ Community	Prevalence of male U.S. migration	Prevalence of female U.S. migration	Take off point for linear spline	Leveling point for linear spline	Fit of linear regression R^2
Mexico					
61	0.153	0.040	0.021		0.995
82	0.109	0.000			0.816
92	0.206	0.084	0.019		0.978
95	0.139	0.000	0.044		0.963
100	0.275	0.014	0.018		0.964
101	0.297	0.061	0.064		0.980
102	0.171	0.078	0.042		0.982
103	0.313	0.014	0.061		0.978
104	0.129	0.000	0.019		0.955
105	0.251	0.116	0.034		0.986
111	0.434	0.131		0.450	0.975
113	0.094	0.000			0.917
115	0.186	0.040	0.036		0.976
118	0.117	0.000	0.040		0.959
Guatemala					
Quiche 1	0.164	0.034	0.053	0.173	0.993
2	0.315	0.057	0.096	0.333	0.993
3	0.288	0.036			0.937
4	0.279	0.063	0.029		0.977
5	0.333	0.072		0.371	0.980
6	0.290	0.000	0.113		0.979
7	0.225	0.000			0.884
Quetzal 1	0.178	0.058			0.932
2	0.194	0.060	0.020	0.196	0.982
3	0.149	0.000			0.952
Costa Rica					
1	0.262	0.044			0.990
5	0.161	0.061	0.058	0.152	0.992
7	0.209	0.125	0.061	0.213	0.979
Nicaragua					
3	0.115	0.000			0.864
Dominican Rep.					
1	0.231	0.236	0.040	0.241	0.989
3	0.115	0.000			0.964
5	0.212	0.144	0.047	0.219	0.992
6	0.138	0.099	0.059	0.150	0.957

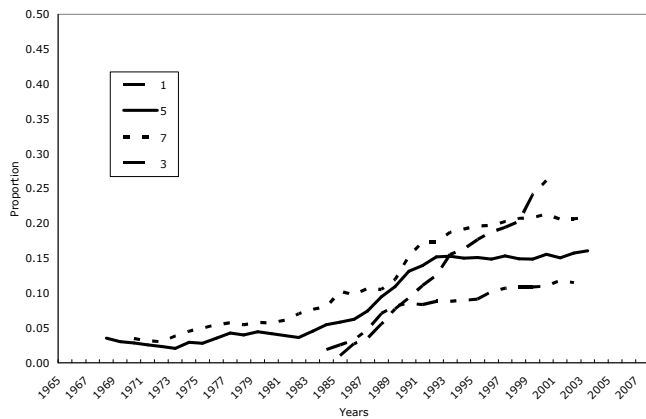# Figure 1. Prevalence of Male U.S. Migration
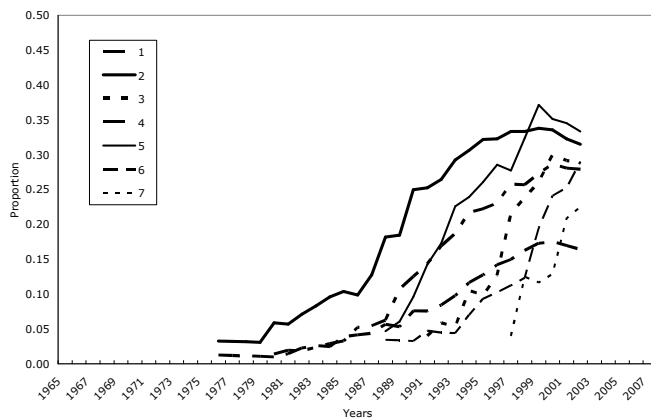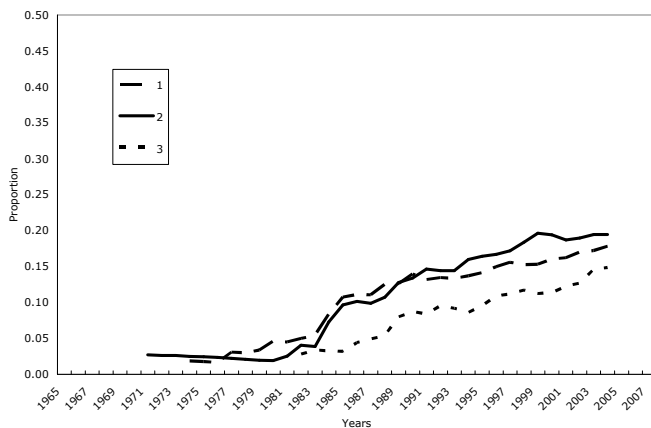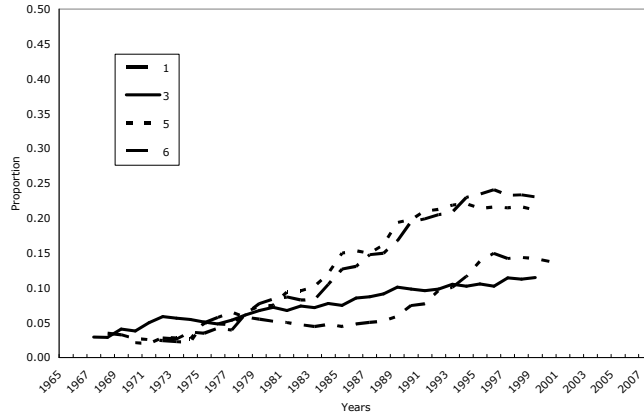
Guatemala, Quiché
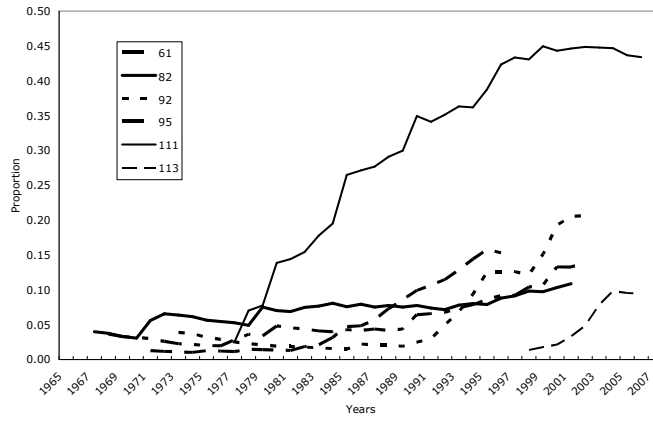

Guatemala, Quetzaltenango
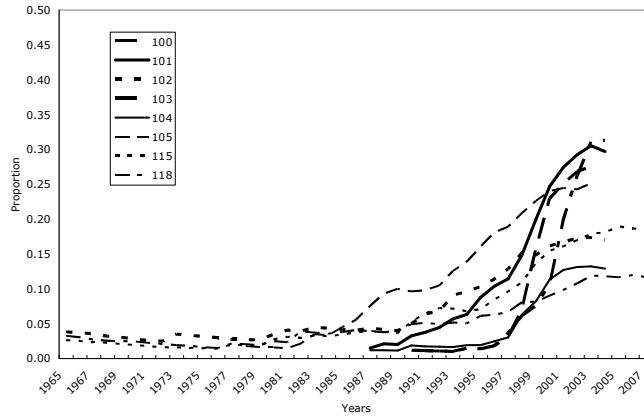

Costa Rica and Nicaragua

Dominican Republic

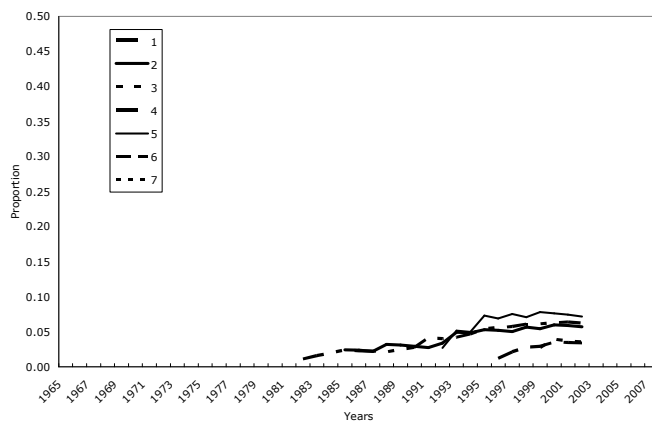
Northern and Central Mexico
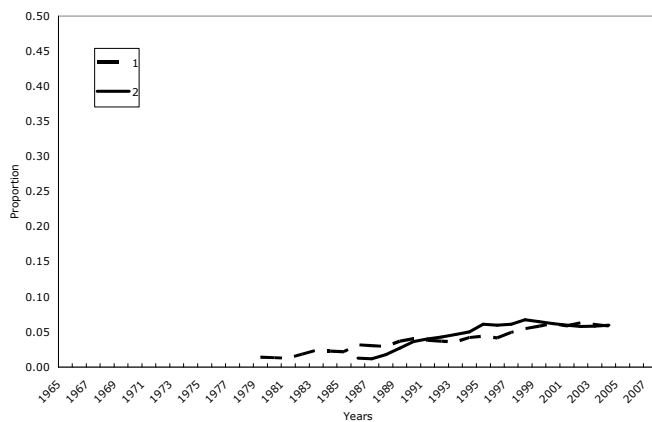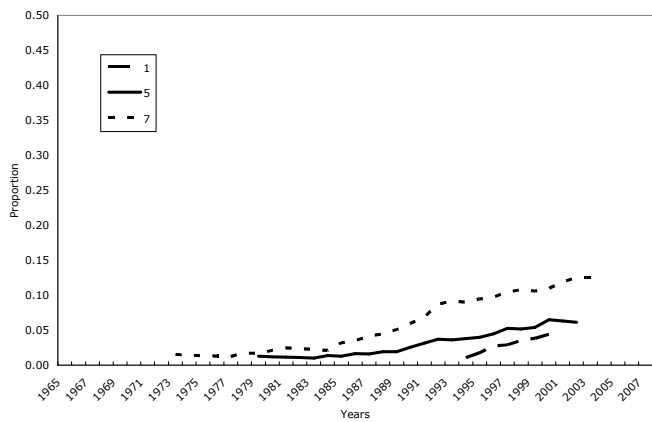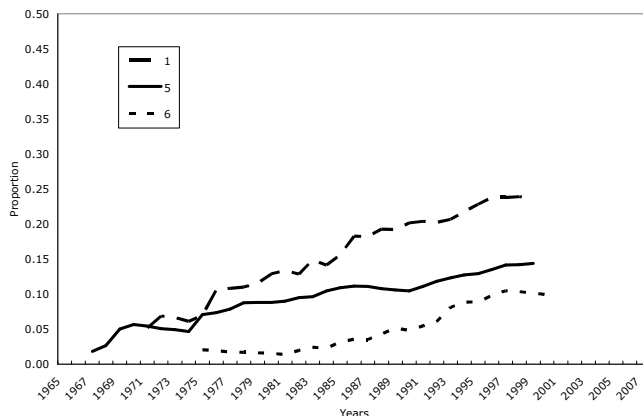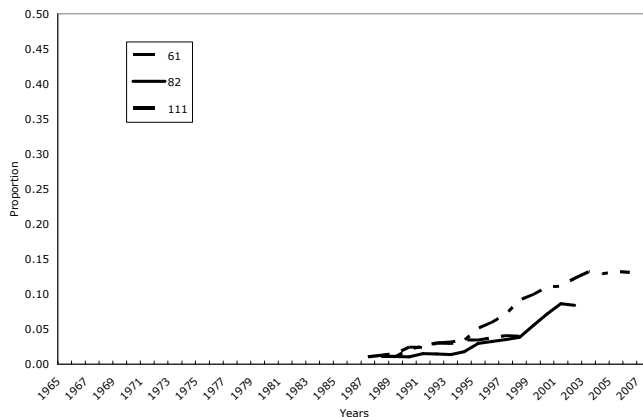

Southern Mexico

Appendix: Figures A1. Prevalence of Female U.S. Migration

Guatemala, Quiché

Guatemala, Quetzaltenango

Costa Rica and Nicaragua

Dominican Republic

Northern and Central Mexico

Southern Mexico