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# SOCIAL CAPITAL AND INTERNATIONAL MIGRATION FROM LATIN AMERICA*

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## Social Capital and International Migration from Latin America

Abstract

We combine data from the Latin American Migration Project and the Mexican Migration Project to estimate models to predict the taking of first and later trips to the United States from six settings: Mexico, Puerto Rico, the Dominican Republic, Costa Rica, Nicaragua, and Peru. The models were specified to test specific hypotheses about the effects of social capital on international out-migration and how these effects vary with respect to contextual factors such as urban-rural status and the cost and difficulty of migration. Our findings confirm the ubiquity of migrant networks and the universality of social capital effects throughout Latin America, but also reveal how the size of these effects are not uniform across settings. Social capital operates more powerfully to determine migration on first as opposed to later trips, in rural rather than in urban settings, and in locations where the costs of migration are high rather than low.

Research over the past two decades has established the centrality of social networks to the process of international migration. As social beings, humans are inevitably enmeshed within interpersonal webs of strong ties to close friends and relatives and weak ties to more distant relatives, casual acquaintances, and friends of friends. Whenever an aspiring international migrant has a network tie to someone with prior migratory experience, that connection offers a valuable source of social capital. By drawing on the social tie, an individual can mobilize the social capital embedded within it to gain valuable information, moral support, and material assistance that may reduce, often quite substantially, the costs and risks of international migration. As a result, people who have migrant friends and relatives display a much higher likelihood of emigration compared with those who don't; and the stronger the social connection and the more and better the person's migratory experience, the higher the odds of eventual out-migration.

The foregoing summary of network effects is consistent with the theory of social capital and has been confirmed across a number of empirical studies. Although the existence and importance of migrant networks have been documented in migratory systems throughout the world, few studies have undertaken a direct comparison of the importance of network ties across multiple settings. Probably the best-documented case is Mexico. Studies using MMP data have clearly established that having a social tie to a United States migrant dramatically increases the odds of emigration (Massey et al. 1987; Massey and García España 1987; Massey and Espinosa 1997); that the size of effect varies with the strength of the tie and the closeness of the relationship (Espinosa and Massey 1998); that network effects differ by gender (Kanaiaupuni 2000; Cerrutti and Massey 2001; Curran and Rivero Fuentes 2003 ); that the power of network ties to promote migration is a real causal effect and not spurious or attributable to unmeasured heterogeneity (Palloni et al. 2001; Munshi 2003), and that networks and the social capital they produce are fundamental to the cumulative causation of migration (Massey, Goldring, and Durand 1995; Massey and Zenteno 1999).

Despite the theoretical and substantive contributions of these studies, the fact remains that they are based on the Mexican case. As a result, in concluding their comprehensive review of the North American research literature, Massey et al. (1998:107) argued that "far too much of the research is centered in Mexico, which because of its unique relationship to the USA may be unrepresentative of broader patterns and trends." In this paper we redress this concern by undertaking a comparative quantitative analysis of the effect of social capital on the odds of migration to the United States from six countries in Latin America and the Caribbean.

## A. SOURCE OF DATA

Cross-national research to date has been limited by the lack of comparable and reliable data for different countries. The Latin American Migration Project (LAMP) was modeled on the Mexican Migration Project (MMP) explicitly to address this limitation by compiling equivalent datasets using comparable questionnaires and similar data collection methods across a range of countries in Latin America and the Caribbean. Here we take advantage of the data files that have been made public to date to compare the relative importance of network ties in determining first and later trips to the United States from Mexico, the Dominican Republic, Puerto Rico, Costa Rica, Nicaragua, and Peru.

The MMP began in 1982 and since 1987 has annually surveyed communities throughout Mexico to build a comprehensive data base on documented and undocumented migration to the United States. It's procedures and the resulting data have been exhaustively described in numerous publications (see Massey 1987; Massey and Zenteno 2000; Massey and Capoferro 2004; Durand and Massey 2004). In brief, each year 4-6 communities ranging in size from small villages to large metropolitan areas are selected and surveyed using simple random sampling methods. A semi-structured interview known as an ethnosurvey is applied to gather social, demographic, and economic information about each household and all of its members. A special module collects information on the first and last trips made by each member to the United States, and all household heads and their spouses are administered a retrospective questionnaire that compiles a complete history of migration and border-crossing from age 15 (or age of entry into the labour force) onward. Copies of the MMP questionnaire and a description of the sample and datasets are available from the project's website at http://www.opr.mmp.princeton.edu/.

Each Mexican community survey is followed a few months later by a survey of out-migrants originating in that community who have settled in the United States and no longer return regularly to be interviewed there. These respondents are located using snowball or chain-referral sampling methods. Data from the United States and Mexican surveys are representative of the binational population of migrants formed through recurrent processes of migration and settlement in the United States (see Massey and Zenteno [2000] for a demonstration of the data's representativeness).

The LAMP was launched in 1998 as a self-conscious attempt to replicate the design and methods of the Mexican Migration Project. To date, surveys have been carried out and made public on documented and undocumented migrants from Puerto Rico, the Dominican Republic, Costa Rica, Nicaragua, and Peru. Data from surveys conducted in Guatemala, Haiti, and Paraguay are currently being cleaned and coded, and additional surveys are planned for Ecuador. Preliminary analyses of LAMP data suggest they are valid and accurate and, like the MMP data, yield a valid picture of patterns and process of international migration to the United States(see Massey and Sana 2004).

Whereas the MMP employed the exactly the same ethnosurvey instrument at all field sites, total consistency was not possible in the LAMP. Geographic conditions, patterns of social and economic organisation, and variables of interest, such as documentation, border crossing, and land tenure, differ from country to country. As a result, there is no a single "LAMP Questionnaire" in the same way that there is a uniform MMP questionnaire. Rather, LAMP investigators developed a set of core tabular forms to create a "Template Questionnaire." This questionnaire was then adapted to each local situation to yield a standard body of data on international migration. As with the MMP, the uniform template, country-specific questionnaires, full documentation, and a detailed description of the dataset are available from the project website at http://www.opr.lamp.princeton.edu/.)

Sampling information for the MMP and LAMP surveys used in this analysis are summarized in table 1. Given its long history, the sample compiled in Mexico by the MMP is by far the largest and most extensive, containing 93 communities with more than 16,000 households and nearly 81,000 persons. The average Mexican community was surveyed in 1995 with a sampling fraction of 31% and a refusal rate of 7 per cent. The two Caribbean settings represented in the LAMP data base are from Puerto Rico and the Dominican Republic, surveyed in 1998 and 1999, respectively, with corresponding sample sizes of 646 and 978 households containing 2,878 and 5,913 persons. The relevant sampling fractions were 17 per cent and 13 per cent and the corresponding refusal rates were 3 per cent and 4 per cent. To represent Central America, Costa Rica and Nicaragua were sampled in 2002 with respective sampling fractions of 22 per cent and 19 per cent and a refusal rate of just 4 per cent, yielding corresponding totals of 1,428 and 1,789 households and 7,414 and 11,168 persons.

Only in Peru did LAMP interviewers experience significant problems with respondent cooperation, yielding a rather high refusal rate of 38 per cent. Three of the four communities surveyed were working class areas in metropolitan Lima, where rates of crime and urban violence were high and rising, causing much fear and a palpable reluctance to talk to strangers. Whereas the refusal rate in the one community surveyed outside of Lima was just 11 per cent, within the metropolitan area itself the rate ranged from 39 per cent to 48 per cent. The final sample size was 725 households and 3,572 persons, achieved with a sampling fraction of 12 per cent.

In this analysis, we draw upon data compiled from life histories of male household heads to undertake a discrete-time event history analysis. Following Massey and Espinosa's (1997) study of migration from Mexico, we undertake separate analyses to model the likelihood of taking a first United States trip and then move on to model the process of taking an additional trip given that one has already occurred. For the analysis of first trips, we follow each male head year by year from age 15 to the survey date and assess in each year whether the person left for the United States. Following Massey and Espinosa, we only consider person years lived since 1965 to limit recall error. Each year in which the person did not migrate was coded 0 and the year in which the first trip was taken was coded 1. All person years subsequent to the first trip are excluded to provide a detailed look at the process by which international migration is initiated.

In order to study the process by which migration is perpetuated, we follow each household head year by year after a return from the United States up to the time he leaves on the next trip, coding person years where no trip was taken as 0 and ones where an additional trip was made as 1 and keeping track of the number of prior trips and the accumulated total of United States experience. This coding is repeated for all intervals between trips up to the survey date, at which point the data are censored. In all analyses—for first as well as subsequent United States trips— independent variables are measured in year t and the outcomes (dichotomous indicators of migration) are measured in year t+1. With the exception of fixed characteristics such as country and community of origin, all variables are time-varying.

B. SOCIAL CAPITAL AND MIGRATION

In this analysis, we focus on five indicators of individual social capital and one measure of general social capital. Individual social capital refers to migration-enhancing resources that come from direct, personal, and usually close ties to particular people with migratory experience in the United States. General social capital refers to resources emanating from weaker ties to United States migrants diffused throughout a community—casual friends, acquaintances, distant relatives, and even friends of friends who have been to the United States. Here we measure individual social capital using four dichotomous indicators: whether one of the subject's parents had migrated by year t, whether any of his siblings had migrated by year t, whether his wife had migrated by year t, and whether any of his children had migrated by year t. General social capital is measured by the migration prevalence ratio—the proportion of those aged 15+ in the

community who had ever been to the United States by year t, a measured developed originally by Massey, Goldring, and Durand (1994).

Prior work has found that social capital effects are not uniform across people and settings. As noted above, effects differ for men and women (Kanaiaupuni 2000; Curran and Rivero Fuentes 2004; Massey, Fischer, and Capoferro 2004), but in order to keep the scope of the present analysis manageable, we focus here on the study of male migrants alone and leave a detailed examination of gender interactions for future research. However, three other interactions will be considered in some detail.

First, we hypothesize that the relative influence of individual social capital will vary depending on prior migratory experience (see Massey and Espinosa 1997; Singer and Massey 1998). First time migrants, by definition, have no direct knowledge of the host society and are crucially dependent on the experience of others to guide them. Once in the United States, however, new migrants begin to accumulate their own information about how to enter the country, look for work, stay out of trouble, and generally navigate United States culture and society. Across successive trips, therefore, migrants progressively substitute their own migration-specific human capital for external social capital in managing migration. We thus expect social capital to have stronger effects on the likelihood of making a first trip than on the probability of making a subsequent trip.

Migration-specific human capital refers to knowledge, experience, and resources acquired in the course of migrating, and is here measured using three variables: the number of United States trips made by year t, total United States experience accumulated through year t, and the acquisition of legal documents by year t. For most international migrants, documents are acquired through connections made while in the United States. The only exceptions are Puerto Ricans, who are United States citizens by birth, and a small fraction of migrants who derive citizenship or permanent residence from a relative before they have ever been to the United States.

A second source of heterogeneity in social capital effects is rural-urban status. Theory and research also suggest that general social capital has different effects depending on the population of the origin community (Flores, Hernández León, and Massey 2004; Flores 2005). As Wirth (1938) long ago realized, owing to the effects of size and density, urban communities are more anonymous than rural areas and interpersonal relations in daily life tend to be more transitory and superficial. The public sphere is often threatening, and people tend to be guarded and suspicious and limit their contact to family and immediate neighbors. Whereas someone a block away may have been to the United States, an urban resident may not even know it, or at least lack sufficient personal trust to access it; but a resident of a small village is quite likely to know whether anyone in the community has been to the United States and to have some pre-existing relationship with that person enabling access to the social capital. As the share of people with United States experience rises, therefore, more social capital is generated in small town settings than in large urban environments.

The strong and positive effect of general social capital on the likelihood of first migration is a key nexus in the perpetuation of migration through cumulative causation (Massey and Zenteno 1999). Each person who migrates raises the prevalence of migration in the community to generate more social capital, which induces more people to migrate, which raises prevalence even more to generate still more migrants and more social capital, and so on. Fussell and Massey (2004) have found, however, that the connection between general social capital and individual migration is much weaker in urban than rural areas, and that processes of cumulative causation generally fails to achieve a self-perpetuating dynamic in large cities.

We thus hypothesize an interaction between community size and general social capital in determining the odds of first and later out-migration. Specifically, we hold that general social capital will have much stronger and more dynamic effects in small towns and villages than in cities or metropolitan areas. The

census data at our disposal do not allow us to measure community size reliably by year from 1965 to the present, so we employ a rough classification scheme that divides communities into three categories. National and state capitals are usually large metropolitan areas, municipal capitals are the rough equivalent of a United States county seat and are usually small to medium sized cities. The remaining communities have no political or jurisdictional function and are usually small towns or tiny villages.

A third source of heterogeneity in the effects of social capital on migration is the difficulty and expense of making the trip. Specifically, we expect the relative power of social capital in determining migration to vary with the cost of the trip: the higher the cost and the more significant the barriers to international migration, the more we expect migrants to rely on social capital to gain entry and find work in the United States. In contrast, the lower the barriers to international movement, the smaller the risks of migration, and the lower the out-of-pocket costs, the less necessary and valuable social capital will be for potential migrants contemplating a foreign trip.

Given the focus of prior research on Mexico, this hypothesis has not been very well investigated, as there is relatively little variation in the cost or difficulty of migration from community to community within Mexico. Combining the MMP with the LAMP, however, yields considerable cross-country variation in the costs, risks, and difficulty of migrating to the United States. In Table 2 we develop crude estimates of the cost of taking an undocumented trip to the United States. Airfares were estimated by pricing out a trip from each nation's capital to Chicago for a 30 day advance booking and a two-week stay (generally the cheapest terms available). We selected Chicago because significant numbers of immigrants from all six nations go to that city. The use of airfare no doubt overstates the relative cost of Mexican migration, but we wanted to compare countries using the same metric and airfare serves as a rough approximation. Smuggling fees were determined from a direct question included on the MMP and LAMP surveys. In all countries except Peru, we computed the average fee paid for all post-1990 trips. In the Peru, the question on smuggling fees was not asked so we estimated it by adding $2,000 to the next highest figure, which we view as a conservative approximation.

As can be seen, at $324 the cost of migration is least from Puerto Rico. Although it does not share a land border with the United States, a well-developed transportation infrastructure and vibrant tourism industry offer frequent low-cost flights to the mainland, and as United States citizens Puerto Ricans face no consular officers asking tough questions blocking their way and, of course, no smuggling fees to be paid. Moreover, despite the progressive militarization of the border after 1993 (see Massey, Durand, and Malone 2002), entering the United States from Mexico is probably still easier and cheaper than from other countries in Latin America. Travel costs are limited to the price a second class bus ticket to the border, and although coyote costs have risen in recent years, there is a well-developed and easily accessible infrastructure of smuggling services that are variably priced according to the services and guarantees that are offered (Heyman 1995). There is also a thriving market in bogus documents along the border, providing a range of facsimiles of varying quality at affordable prices to enable open (though risky) crossings through ports of entry. Although not as costless as migration from Puerto Rico, migration to the United States is nonetheless within reach of millions of Mexicans. Our crude estimate of the cost of migration from Mexico is $1,066, and this is probably an over-estimate because most first time migrants do not fly to the United States.

Puerto Rico and Mexico are followed in terms of costs by the Dominican Republic, with an estimated figure of $1,655. Although they lack the land border accessible to Mexicans or the United States citizenship of Puerto Ricans, Dominicans nonetheless have relatively little difficulty in gaining access to United States territory. Rather than crossing the Rio Grande River, however, they ferry the Mona Passage, an 80 mile expanse of sea between the island of Hispañola and Puerto Rico. As in Mexico, a well developed smuggling industry of boat operators known as yoleros has emerged to satisfy the demand of aspiring migrants (the traditional Dominican fishing craft is called a yola). Once in Puerto Rico, they take a domestic flight to the United States mainland, passing themselves off as Puerto Rican.

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The costs of migration rise sharply as one moves to other Latin American countries, going from the Dominican Republic's $1,655 to $4,448 in Costa Rica, $4,733 in Nicaragua, and $6,795 Peru. The bulk of the increase is attributable to dramatically higher smuggling costs. Relatively few of the migrants from these countries entered the United States by being smuggled, however. Usually they obtain a legitimate visa from a United States consular officer, enter the United States through a regular port of entry, and then violate the terms of the visa by getting a job or staying too long. In lieu of payments to smugglers, however, they present evidence of financial independence to United States consular officers, which typically involves showing proof of a steady, salaried job, home ownership, and a bank account with a significant balance, all of which likely equals or exceeds the costs of smuggling. Given the admittedly crude nature of our cost estimates, in the ensuing analyses we simply create a cost ranking based on the data in table 2, ordinally ranking countries from 1 to 6 in ascending order from Puerto Rico to Peru.

## C. OTHER FORMS OF CAPITAL

Whereas scientific interest in social capital is largely a product of the 1980s, interest in the influence of human and financial capital on migration is older. Sjaastad (1962) was the first to theorize human migration in terms of human capital, but the canonical formulation of the neoclassical migration model was by Todaro (1969). In neoclassical economic terms, migrants are hypothesized to move in order to maximize the financial returns to their education, training, skills, and abilities by transferring from a low-wage to a high-wage (in this case, foreign) labour market.

A priori, the direction of the effect of human capital on the odds of migration between any two countries is indeterminate, however. One first needs to know how the respective rates of return to human capital at both origin and destination and the costs of international movement (Massey et al. 1998). In highly unequal societies such as those in Latin America, where education is a scarce, even modest levels of schooling are rewarded in domestic labour markets but are rewarded little internationally, producing a negative selection with respect to human capital. Both Taylor (1987) and Massey and Espinosa (1997), for example, have documented the negative selectivity of Mexican migrants with respect to education (using different datasets). Whatever the nature of the selectivity, however, one thing is clear: the higher the costs and barriers to international movement, the more selected with respect to human capital are those who do choose to migrate. Thus, we hypothesize a significant interaction between the cost of migration and indicators of human capital.

Financial capital also plays a role in neoclassical economic thinking about international migration. Although we cannot measure financial capital per se using MMP and LAMP data, we can measure the ownership of financial assets such as land, housing, and business enterprises, which we here label physical capital. Like human capital, the effect immobile physical assets on out-migration is indeterminate under neoclassical theory. On the one hand, assets can provide income or collateral for loans to finance a trip abroad. On the other hand, if the potential income from assets is significant, it may reduce the attractiveness of international migration. In general, research from around the world finds that migrants come from somewhere in the middle of the wealth distribution—rich enough to be able to finance a trip but poor enough to have unsatisfied ambitions at home (Massey et al. 1998).

A more recent avenue of economic theorizing, however, views assets in a different way. The new economics of labour migration argues that international migration may not only be undertaken to maximize earnings, but also to over come failures in capital and credit markets (Stark 1991). Because these markets are non-existent, poorly functioning, or inefficient in many developing countries, people are unable to finance agricultural production, the purchase of large consumption items (such as housing), or the establishment of a business enterprise.

In terms of the assets considered here, already owning a home indicates the lack of a major motivation for migration (the need to self-finance home acquisition) and is thus hypothesized to be negatively related to the odds of out-migration. Around the world, the most important single use of migrant remittances is the acquisition or improvement of homes (Massey et al. 1998), and studies in Mexico have generally found home ownership to be negatively related to international migration (Massey and Espinosa 1997). In similar fashion, owning a business signifies the lack of a need for investment capital and also provides an additional source of earnings to reduce the net gain from emigration, lending it a negative influence on the probability of international movement.

The same might be said of land, except that land often requires significant ongoing investment to make production profitable in a market economy. During the 1940s, for example, Mexican authorities redistributed land to peasants but didn't provide them with financial assistance to undertake production, generating a demand for investment capital that was met by migrating to the United States (Massey et al. 1987). If a similar situation prevails elsewhere in Latin America (possession of land without the means of making it productive in a market economy), we would expect land ownership to exert a similarly positive effect on the odds of out-migration.

### D. ACCESS TO FORMS OF CAPITAL ACROSS LATIN AMERICA

In table 3, we show mean values of variables used in the analysis of first out-migration to the United States to measure access to different forms of capital in the countries under study. These figures assess the situation of male household heads in the average year prior to their first United States trip or the survey date, whichever came first. Reflecting their close ties and long history of migration to the United States, respondents from Puerto Rico and Mexico are generally wealthiest in terms of individual social capital (see the table's top panel). Among Puerto Rican household heads, 4 per cent reported having a migrant parent, 17 per cent a migrant sibling, 3 per cent a migrant spouse, and 4 per cent a migrant child. Among Mexican heads, 10 per cent had a migrant parent, 12 per cent a migrant sibling, 1 per cent a migrant spouse, and 4 per cent a migrant child. At the bottom of the panel we present a summary index of access to individual social capital. Described in greater detail below, the index is a weighted average of personal network ties, where the weights reflect the relative importance of each tie in promoting emigration. As can be seen, Mexican and Puerto Rican household heads display similar levels of access to individual social capital, with respective index values of 0.204 and 0.234.

Household heads from the Dominican Republic display a similar level of access to individual social capital, reflecting the intensity of migration since it began in the early 1960s. In the average person year under observation, 4 per cent of the Dominican respondents had a migrant parent, 15 per cent a migrant sibling, 1 per cent a migrant spouse, and 4 per cent a migrant child, yielding a summary index identical to that in Mexico. In the remaining nations, however, the level of access to individual social capital drops by more than half, yielding summary indices ranging from 0.082 to 0.090. This discontinuity reflects the relative recency of United States migration from these settings. In all cases, fewer than 1 per cent of household heads reported having a migrant parent or spouse, and only around 2 per cent had migrant children. The most frequent category for access to social capital was siblings. Around 7 per cent-8 per cent of respondents reported having a sibling who had been to the United States.

Access to general social capital—measured as the proportion of United States migrants in the community—generally follows the same pattern, except that Puerto Rico pulls away from Mexico in wealth of social capital. Given the ease of travel to the United States mainland, it is perhaps not surprising that nearly a quarter of the residents of the typical Puerto Rican community had been to the United States during the average person year. Among Mexicans and Dominicans, the respective figures were 13 per cent and 10 per cent, and the prevalence of migration trailed downward across the remaining countries: 4-5 per cent in Costa Rica and Nicaragua and just 2 per cent in Peru.

In general, the cross-national pattern for human capital endowments is opposite that of social capital. At one extreme are Peruvians, who averaged 13 years of schooling, 18 years of labour force experience, and a quarter of whom held skilled occupations (recall that most of these respondents were from metropolitan Lima). Skilled occupations were those classified as professional, managerial, clerical, or skilled manual. At the other extreme are Mexicans and Puerto Ricans, with respective mean educations of 4 and 6 years, average times in the labour force of 14 and 11 years, and just 4 and 3 per cent in skilled occupations. In between these two extremes are Dominicans, Costa Ricans, and Nicaraguans, who report average educations of 6-7 years, average times in the labour force of 15-17 years, and percentages of skilled workers in the range of 9 per cent-13 per cent. We developed a set of weighted human capital indices (again, described below) to reflect this general ordering, with Peru topping out at 0.704 compared with values of 0.308 and 0.332 in Puerto Rico and Mexico, and 0.433 to 0.496 in the remaining countries.

The distribution of physical capital across countries roughly parallels that of human capital. Whereas 48 per cent of Peruvians owned their own homes the figure was just 20 per cent in Puerto Rico, and the figures for Mexico, Dominican Republic, Costa Rica, and Nicaragua were 29 per cent, 24 per cent, 39 per cent, and 41 per cent, respectively. Business ownership ranged from just 3 per cent in Puerto Rico through values of 8 per cent and 10 per cent in Mexico and the Dominican Republic, to respective rates of 15 per cent, 16 per cent, and 20 per cent in Costa Rica, Peru, and Nicaragua. Reflecting the largely urban origins of the Puerto Rican and Peruvian samples, none of the former and just 3 per cent of the latter owned land, compared with 6 per cent in Nicaragua and 8 per cent-9 per cent in Mexico, the Dominican Republic, and Costa Rica.

Table 3 also shows means for the variables we propose to control for in our analysis of the effects of social and other forms of capital. Key control variables are cost and community category, as these are hypothesized to interact with human and social capital in the ways described above. Less important theoretically but nonetheless important to hold constant in our analysis are demographic background, period, and documentation. The demographic variables are self explanatory. We divide person years into four broad temporal categories: before 1980, which corresponds to the final stage of import substitution industrialization in Latin America; 1980-1989, often referred to by Latin Americans as "the lost decade" because of the collapse of import substitution as a development strategy and the widespread decline in real living standards; 1990-1995, during which neoliberal forms were being introduced to many countries; and 1996 to the survey date, when the consequences of structural adjustment policies were becoming evident. Although we generally consider documentation to be a form of migration-specific human capital, it is included as a control in the model for first trips because Puerto Ricans are, by definition, universally documented, and a few Mexicans and Dominicans derive United States citizenship or legal residence through kin relationships before ever entering the United States, owing to the long and extensive history of migration from both places.

E. CAPITAL AND FIRST MIGRATION FROM SPECIFIC COUNTRIES

Table 4 shows the results of a discrete time event history analysis undertaken to measure the influence of different forms of capital on the probability of leaving on a first trip to the United States from the six countries under consideration. The top panel shows the estimated effects of different indicators of individual social capital on the relative odds of initiating migration to the United States. These estimates offer the first broad assessment of social capital's effects across a broad sample of origin settings using comparable methods and data, at least to our knowledge. In general, the findings provide strong support for the theory of social capital. The vast majority of the coefficients associated with the indicators of individual social capital are significant and in the expected direction. Of the 24 coefficients estimated, 16 were significant at the 5 per cent level and the number rises to 18 if we relax the significance threshold to 10 per cent. As we shall in subsequent analyses, the divergences from expectations are likely attributable to

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differences in the composition of the samples (the mix of rural versus urban areas) and constraints on degrees of freedom (a skewed distribution of human capital in a sample with relatively few cases).

As many studies before us have found, migration from Mexico to the United States is very strongly related to individual social capital. Having a parent, sibling, wife, or child with prior experience in the United States dramatically increases the odds that a household head who has never before migrated will leave on a first United States trip. Given the substantial degrees of freedom available in the Mexican data (394,000 person years!), all of the coefficients are robustly estimated and highly significant. Although only two of the four coefficients estimated for Puerto Rico are significant, in general the coefficients are comparable in size, all in the expected direction, and none is significantly different from its Mexican counterpart (standard errors for the coefficients are not shown here for reasons of parsimony, but can be sent on request).

In general, as one moves from left to right in the table—i.e. from fewer to greater costs of migration— the absolute size of the social capital coefficients increases, consistent with our expectation that social capital is more important when the barriers to movement are high (although variability among the coefficients also increases owing to differences in sample size). In the Dominican Republic all of the coefficients are significant and above 1.0, and in Costa Rica two of the coefficients are above 1.0 and all are significant, at least at the 10 per cent threshold. In Nicaragua three of the four coefficients are significant and their average size is around 2.0. Finally, though in Peru only one of the coefficients is significant (that for having a migrant spouse, the other two are not significantly different from the values observed in Mexico and Puerto Rico. There clearly are not enough Peruvians with migrant parents to enable a stable estimate of the effect given the limited degrees of freedom in the sample.

Consistent with earlier work, the indicator of general social capital (the prevalence of migrants in the community) is strong and significant in Mexico, as it is in Nicaragua and Costa Rica, but not Puerto Rico, the Dominican Republic, or Peru, possibly owing restricted degrees of freedom and the relatively urban nature of these samples, a proposition we test more fully in the next section. Consistent with the proposition that human capital effects are indeterminate under neoclassical economic theory, however, we encounter a diversity in the size and direction of effects for the various indicators of human capital.

Again, consistent with prior research, the effects in Mexico are significant and negative. Mexican migrants are clearly selected from the lower end of the distribution of education and skill. In contrast, migrants from the Dominican Republic, Nicaragua, and Peru appear to be positively selected with respect to education (though the effect for Peru is only significant at the 10 per cent level) and the size of the coefficient generally rises with increasing costs of migration. As in Mexico, however, migrants from Costa Rica and Nicaragua appear to be negatively selected with respect to occupational skill, with respective coefficients of -0.857 and -0.701. The coefficient for Peru (-0.971) is comparable in size, though not significant at conventional levels. A pattern of positive selectivity with respect to education and negative selectivity with respect to occupational status suggests the possibility of a skills mismatch motivating international migration from these countries—relatively well educated men who are unable to obtain a job commensurate with their schooling appear to be quite likely to migrate.

Finally, with respect to the effect of physical capital on out-migration only Mexico exhibits a clear and steady pattern that is consistent with expectations outlined above. The effect of land ownership is positive, suggesting that migrants may be moving to self-finance agricultural production and possibly using land as collateral for loans to undertake the trip. In contrast, home and business ownership have strong negative effects. That is, families that already own homes and businesses do not need to self-finance their acquisition through international migration, thereby overcoming missing, ineffective, or failed mortgage and capital markets   Although Dominicans exhibit exactly the same pattern of effects, statistical significance is closer to the border line and in the case of land ownerships fails to attain the threshold at all. Owing to a

combination of skewed property ownership distributions and a limited number of cases, none of the other countries shows any significant effects of asset ownership.

## F. Capital and First Migration: General Processes

The foregoing results from individual sending areas generally provide strong and consistent support for the centrality of migrant networks and the importance of social capital in international migration decisions. Being connected to someone with prior United States migratory experience, and residing in a community where many people have already been to the United States, substantially increases the odds of undertaking a first United States trip. We did, however, observe a certain irregularities among the coefficients, which in some cases did not conform to hypotheses. We now address these divergences, first by pooling the data for all countries to come up with a set of stable estimates reflecting the general process of first migration, and then by using these data to estimate theoretically expected interactions between the costs of migration and different forms of capital.

Table 5 pools the data across countries and estimates two models. The one shown in the left-hand columns includes dummy variables to control for country of origin (using Mexico as the reference) and the one to the right substitutes the cost ranking from table 2 in place of the individual country dummies. As can be seen, compared with Mexico all other countries display a lower probability of migration to the United States, holding constant other variables in the model. Even Puerto Ricans, who face the lowest costs of migration and no legal barrier to movement, display a lower likelihood of United States migration than Mexicans. The odds of first migration are significantly lower among Dominicans, Costa Ricans, and Nicaraguans, and lowest among Peruvians.

The right-hand columns suggest that much of this inter-country variation in the probability of migration is captured by the cost ranking, which is highly significant. Its substitution for the country dummies yields a more parsimonious and a slightly better fitting model (see the lower likelihood ratio) and it induces no appreciable change in the rest of the model's coefficients. Leaving on a first trip to the United States is strongly predicted by all indicators of individual social capital, with coefficients ranging from .663 to .937, as well as by general social capital, which has an extremely strong effect with a coefficient of 2.80. Migrants to the United States are negatively selected with respect to measures of human capital such as education, labour force experience, and occupational skill. Physical capital in the form of home and business ownership likewise negatively predict out-migration, but the effect of land is significantly positive (the effect of land ownership cannot be estimated in the model that includes country controls because it is collinear with the dummy variable for Puerto Rico).

The demographic controls behave as one might expect. Age has the typical curvilinear effect on the likelihood of migration, rising through the early labour force years and declining thereafter; and being married and having young children generally deter international movement. The only period coefficient that is significant is that corresponding to the 1980s, Latin America's "lost decade" during which import substitution industrialization failed as a development model, producing widespread unemployment and falling wages. During this decade, the odds of leaving for the United States increased sharply compared to all other periods.

Thus, the likelihood of first migration differs across countries and to a large extent seems to be related to differences in the relative cost and difficulty of moving to the United States. As argued above, however, we do not expect the migratory effects of human or social capital to be the same across settings. In particular, we expect the effects of both individual social capital and human capital to vary systematically with the costs of migration, generally becoming more important as barriers to international movement rise. Likewise, we argued that general social capital functions most effectively in rural settings, and will not have the same dynamic effect in promoting out-migration within urban settings.

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Table 6 shows the results of an equation estimated to model these interactions. The data from all countries was pooled and we include the cost rankings to measure the difficulty of migration, interacting it with both human and social capital. In order to avoid a proliferation of interaction terms, we consolidated the separate indicators of social and human capital into two broad summary indices. Specifically, we weighted each indicator with its corresponding coefficient from table 4 and added them together to created summated ratings scales of human and social capital. In this way, each component of the resulting index was weighted to reflect its relative importance in predicting out-migration.

The right-hand equation estimates the model with main effects only. As is evident, the indices of human and social capital have very strong and robust effects on the likelihood of leaving for the United States, though in precisely the opposite direction. Whereas the coefficient associated with the social capital index is 1.000, that associated with the human capital index is -1.000. As before, the relative number of migrants in the community has a very strong effect on the odds of out-migration, and the remaining effects in the model are much the same as in table 5.

The left-hand columns of the table contain estimated coefficients for the proposed interactive model of migration, which contain cross-products between the cost of migration and indices of human and social capital, as well as an interaction term between migration prevalence and size of community. Originally we included two interaction terms to explore the effect of community size, one for the state or national capital dummy and one for the small town or village indicator; but the former interaction proved to be tiny and insignificant and so was eliminated from the analysis.

All of the remaining interaction terms are highly significant and in the hypothesized direction. Although the main effects of both the cost of migration and human capital remain strong, significant, and negative in the interactive model, the interaction term is strong and positive. As hypothesized, therefore, the effect of human capital in initiating out-migration to the United States grows stronger as the costs and barriers to entry rise. When the costs of migration are low, as in Mexico or Puerto Rico, the migratory flows are very negatively selected with respect to human capital; but when the barriers are high, as in Peru, the this negative selectivity is mitigated and even turns positive.

We used the interactive equation in table 6 to generate predicted probabilities by varying cost and human capital while holding all other variables constant at their means. Our estimates suggest that when the costs of migration are very low the selectivity of migration is strongly negative. Those with little education, work experience, or occupational skill have a relatively high likelihood of leaving for the United States (probability around .05 per year), whereas experienced workers with high levels of education and occupational skill display a very low probability of leaving (just .003).

As the relative costs of migration increase, however, the degree of the negative selectivity steadily falls until at cost ranking 5 there is no selectivity at all. At cost ranking 6, the marginal effect of human capital even turns positive, yielding a migration probability of .004 among those with the lowest endowments of human capital to a value of 1.0 among those with the highest. Thus, the likelihood of migrating to the United States from Peru is relatively low, but those who do leave are positively selected. In contrast, the likelihood of United States migration from Mexico is quite high, but the migrants are negatively selected.

The direction of the effect of human capital on the likelihood of emigration is indeterminate a priori—among other things, it depends on the costs of international movement. When the costs are high, the effect is positive, but when they are low the effect is negative. Drawing on the same logic, we also hypothesize an interaction between the cost of migration and the effect of social capital. Specifically, we argue that when the costs of migration are high, social capital emanating from migrant networks— i.e. social connections to

people with migrant experience—will be more important in determining migration than when the costs of migration are low.

In this case, however, the main effect of social capital in the interactive model is positive, so the effect of the interaction term (which is large and highly significant) is to amplify a basic effect that is present across all countries. We calculate the probability of migration by social capital for different cost rankings. The results show that in a setting where the relative costs of migration are low, such as Puerto Rico or Mexico, the accumulation of social capital does increase the odds of migration to the United States. Among those who lack any social connection to a United States migrant, the annual probability of migration is around 0.02 or 0.03, whereas among those with a migrant parent, sibling, spouse, and children the probability rises to 0.16 (at cost ranking 1) or 0.23 (at cost ranking 2).

In settings where the cost of migration is relatively low, therefore, the accumulation of social capital raises the odds of out-migration from somewhat low to modestly high levels. When the cost of migration is high, however, the likelihood of out-migration is very, very small at low levels of social capital. Absent a personal connection to a United States migrant, for example, the odds of leaving a setting like Peru are tiny, just 0.0016 per year. As access to social capital increases, however, the effect on the probability of migration rises at a rapid rate and the odds of leaving reach exceptional levels among those with multiple connections to United States migrants. Whereas the annual probability of migration for a person well-connected to migrants from a low cost setting was only modestly high at 0.16-0.23, the annual probability of out-migration for the same person originating in a high cost setting reaches the remarkable level of 0.62 (i.e. if they have a migrant parent, sibling, spouse, and child). In other words, if someone in Peru has multiple social connections to United States migrants, it is almost certain that they will emigrate within a short period of time.

Finally, the last interaction we postulated was between community size and our indicator of general social capital (the proportion of people in the community who have already been to the United States by year t). Drawing on prior theorizing and research, we hypothesize that general social capital only operates dynamically to raise rates of out-migration among smaller, rural communities, owing to the anonymous and transitory nature of the public sphere in urban settings. As can be seen in table 6, when only main effects are considered small towns and villages evince a higher likelihood of migration than municipal seats, whereas state or national capitals display a significantly lower probability of leaving. As already mentioned, the interaction between the state or national capital indicator and general human capital was not significant, but that between general social capital and small town or village residence was strong and highly significant.

Once the interaction term is introduced we see that the underlying effect of coming from a small town or village is negative. Other things equal, people from rural areas are less likely to migrate internationally (after all, they have fewer resources and are more isolated). What accounts for the higher rates of emigration from rural settings is the self-feeding dynamic of social capital accumulation known as cumulative causation. The estimated probability of first United States migration by the share of United States migrants in the community for national or state capitals, municipal capitals, and towns or villages shows this effect. In the former two, more urban categories, general social capital has the expected positive effect on the likelihood of leaving for the United States, but the rise in migration probabilities is almost constant and does not accelerate markedly as the share of migrants in the community increases. Among national or state capitals in the sample, for example, the likelihood of out-migration rises from around 0.01 if no one in the surrounding community has ever been to the United States to around 0.03 when around 60 per cent of the community members have United States experience.

Among towns or villages, however, the annual probability of migration rises at an increasing rate as general social capital accumulates from the minimum to the maximum observed, so that the likelihood of leaving increases by a factor of more than nine, from 0.01 to around 0.095 when 60 per cent of surrounding

community members have international experience. Using different data and methods, therefore, this analysis reconfirms the earlier conclusion of Fussell and Massey (2004) and Flores, Hernandez Leon and Massey (2004) that processes of cumulative causation generally fail to take hold in urban settings and are confined largely to rural areas.

G. THE PROCESS OF RECURRENT MIGRATION

Once someone has migrated to the United States, they return to their community of origin qualitatively changed. They have gained knowledge about the process of migration and valuable experience in United States markets, especially that for labour. Knowledge and skills gained in the course of migration falls under the rubric of migration-specific human capital, and work in Mexico has shown it to increase quite dramatically the odds of taking another trip to the United States. Once someone has lived and worked in the United States and returned home, the probability is high that they will leave again—much higher than the likelihood of taking a first trip (Massey et al. 1987; Massey and Espinosa 1997). The odds of taking an additional United States trip thus rise with each trip taken, a process that yields a pattern of recurrent circular migration (Massey 1985, 1986).

The results shown in table 7 suggest this process of repeat migration is not limited to countries sharing a land border with the United States, such as Mexico, but operates more generally throughout Latin America. Recall that, in general, we expect the influence of both individual and general social capital to decline from first to later United States trips, as migration-specific human capital comes increasingly to dominate the migration decision. With each subsequent trip, migrants are better able to substitute their own migration-relevant knowledge and experience for social capital in making the move. Whereas new migrants are highly dependent on the help of others in making a United States trip, experienced migrants are much less dependent on network connections and able to rely directly on their own personal resources to organize and achieve a successful trip.

Compare, for example, the coefficients for individual and general social capital in table 7 with those estimated in table 6. The estimated effect of the individual social capital index declines from a value of 1.000 in the model predicting first trips to 0.260 in that predicting additional trips. Likewise, the estimated effect of the proportion of United States migrants in the community drops from 2.800 to 1.476 between the two models. Both of these downward shifts in the relative importance of social capital are highly significant statistically. In other words, formerly strong social capital effects are replaced on later trips by strong effects of migration specific human capital. As hypothesized, the likelihood of taking an additional United States trip rises strongly with each year of United States experience accumulated and with each United States trip already taken; and not surprisingly, the odds of returning to the United States are given a large boost if the person has managed to acquire a permanent resident visa.

Interestingly, however, the effect of human capital retains its power in predicting later as will as first trips. In both models, the coefficient is around -1.0, indicating the continued negative selectivity of migrants with respect to human capital. In general, however, the importance of physical capital declines in determining later versus initial trips to the United States. Neither land ownership nor home ownership are significant in predicting the odds of repeat migration. Only business ownership retains its significant effect. Indeed, the strength of the effect goes up from -0.384 in the model of first trips to -0.585 in the model of later trips, a significant increase in the magnitude of the negative effect. Business owners thus appear to be even less likely to be selected into the pool of repeat migrants than they were into the pool of first-time migrants.

Just as the overall effects of social capital are less important in determining later United States trips, so too are the interaction effects. In the interactive model shown in table 7 the main effect of individual social capital is -0.013 and the interaction term for the cost of migration is only 0.135, compared to figures of

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0.290 and 0.336 in the model predicting first trips. Moreover, the interaction between human capital and cost of migration is not significant, which means that migrants making additional trips are negatively selected irrespective of the costs and difficulty of international movement. Unlike first trips, those selected into a pattern of recurrent migration are not positively selected with respect to human capital under any circumstances.

The effect of general social capital is also reduced in predicting later trips to the United States. In the interactive model predicting additional trips, the main effect of the share of migrants in the community is 1.132 and the interaction with small town or village origins is 0.851, compared with values of 2.441 and 1.364 in the model predicting first United States trips. Thus, although the process of cumulative causation continues to function across additional trips, the magnitude of the effect of general social capital is reduced compared with first trips. The key nexus in the self-feeding process of cumulative causation thus appears to be selection into the pool of migrants rather than the promotion of additional trips. Once migrants have gained United States experience, their behavior is most strongly conditioned by sorts of migration-specific human capital they have been able to accumulate.

As can be seen, the intercept of -0.297 in the interactive model predicting additional trips is much higher than that of -6.243 in the model of first trips, clearly indicating the qualitative change in the underlying odds of trip-taking for those with migratory experience. The intercept in the model predicting additional trips corresponds to a probability out-migration of 0.426, whereas that in the model predicting first trips corresponds to a likelihood of just 0.002. Once someone has migrated to the United States, therefore, the underlying hazard of going again is vastly greater than it was before the first trip.

Notice also that there is no elevation in the likelihood of repeat migration during the lost decade of the 1980s. The odds of leaving on an additional trip during the 1980s are the same as before this date. Since the 1980s, however, the probability of repeat migration has gone steadily downward, quite possibly reflecting shifts in United States border control and immigration policies (see Massey, Durand and Malone 2002). Whereas the underlying probability of repeat migration was around 0.43 during up through 1989, during 1990-1994 it dropped to 0.36 and after 1996 it further declined to reach 0.32, a decline in the underlying hazard of repeat migration of around 25 per cent in the course of a decade. Finally, unlike first migration probabilities, which display a curvilinear pattern with respect to age, the likelihood of taking an additional trip grows steadily lower with each advancing year. Thus, recurrent migration is a young man's game and fewer are being selected into it compared with years past.

H. CONCLUSIONS

In this analysis we combined data from the Latin American Migration Project and the Mexican Migration Project to study the effects of different forms of capital on the process of international migration to the United States from Mexico, Puerto Rico, the Dominican Republic, Nicaragua, Costa Rica, and Peru. We estimated discrete-time event history models predicting the odds of taking first and subsequent United States trips to determine whether network connections and the social capital they yield operate similarly to promote migration in different settings. We considered measures of both general and individual social capital, and specified several interactions to test different hypotheses about variation in the relative importance of social capital in the context of low versus high costs of migration, rural versus urban settings, and on first versus later trips.

We found that both individual social capital (measured by having ties to specific kinds of people with United States migratory experience) and general social capital (measured by the relative proportion of migrants in the community) indeed operate to promote and sustain international migration in different settings throughout Latin America. We confirmed that important role of migrant networks and social capital in explaining the likelihood of first and repeat migration are not confined to Mexico, but occur generally in

other migrant-sending countries throughout the Western Hemisphere. The more connections one has to people who have been to the United States, and the higher the overall prevalence of migrants in the community, the greater the odds of leaving on an initial trip and of taking an additional United States trip.

Despite the apparent universality of social capital effects, however, the relative power of social capital in determining international migration is not uniform across settings. The size of the effect of individual social capital varies with the cost of migration, for example. When migration is costly and difficult, having network ties is more important in determining out-migration than when migration is easy and cheap. Moreover, the effect of general social capital in promoting initial and repeat United States migration is substantially greater in rural than in urban settings.

In addition to significant interactive effects involving social capital, we also found a strong interaction between human capital and the costs of migration. The more costly and difficult the trip to the United States, the less likely first time migrants were to be negatively selected with respect to human capital. Thus migrants leaving communities in Mexico and Puerto Rico for the United States tended to be from the lower end of the educational and skill distributions, whereas those leaving Peru tended to come from the upper portions of these distributions, thus confirming the indeterminancy of human capital effects without knowing beforehand the cost and difficulty of migration.

We also found that the likelihood migration was related to indicators of physical capital. Land ownership was positively associated with the odds of initial out-migration, suggesting that land-owning migrants may be motivated to migrate to overcome failures in local capital markets by self-financing productive investments through foreign wage labour. In contrast, owning a home or a business is negatively related to the odds of taking a first United States trip. It is widely known that one of the most important motivations for international migration is self-financing the construction or acquisition of a home, so those who are already home owners thus lack a core reason for emigration. To a lesser but nonetheless significant extent, people also migrate to gain funds for the establishment of a business enterprise, meaning that those who already own a business also lack a potential motivation for international movement.

We also found that social capital effects not only differ according to the costs of migration and urbanity of the setting, but also by the number of trips already taken. Whereas social capital effects dominated in determining initial trips to the United States, the influence of social capital was significantly weaker in determining subsequent trips. These were more strongly predicted by indicators of migration-specific human capital, such as years of accumulated United States experience, number of trips already taken, and the acquisition of documentation. As others have found in Mexico, there is apparently a substitution of migration-specific for social capital as migrants progress from initial to later trips, and this substitution occurs generally throughout Latin America.

The foregoing analysis significantly broadens the base of generalization for the theory of social capital and extends the applicability of migrant networks to new settings. We have documented the existence of such networks and the importance of the social capital they yield in determining migration from a variety of different settings in the Americas and have shown how certain variations in context—the relative cost of migration and rural versus urban status—can amplify or reduce the basic migration-enhancing effects of social capital. As additional data from other countries become available through the Latin American Migration Project, we hope to continue to expand the basis for empirical and theoretical generalization.

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TABLE 1. SAMPLING INFORMATION FOR SURVEYS CONDUCTED IN SELECTED COUNTRIES BY THE LATIN AMERICAN AND MEXICAN MIGRATION PROJECTS.

| Sampling information | Puerto Rico | Mexico | Dominican Republic | Costa Rica | Nicaragua | Peru |
|---|---|---|---|---|---|---|
| **Community Samples** | | | | | | |
| Number of Communities | 5 | 93 | 7 | 7 | 9 | 4 |
| Number of Households | 585 | 15,171 | 904 | 1,391 | 1,598 | 677 |
| Sampling Fraction | 17.3 | 31.3 | 13.1 | 22.0 | 19.0 | 11.7 |
| Refusal Rate | 2.9 | 7.0 | 4.3 | 3.6 | 4.3 | 38.4 |
| | | | | | | |
| **United States Samples** | | | | | | |
| Number of Households | 61 | 837 | 74 | 37 | 65 | 48 |
| Number of Persons | 319 | 3,522 | 370 | 168 | 303 | 170 |
| | | | | | | |
| **Total Sample** | | | | | | |
| Number of Households | 646 | 16,008 | 978 | 1,428 | 1,789 | 725 |
| Number of Persons | 2,878 | 80,621 | 5,913 | 7,414 | 11,168 | 3,742 |
| Average Survey Year | 1998 | 1995 | 1999 | 2002 | 2002 | 2003 |

TABLE 2. ESTIMATES OF THE COST OF INTERNATIONAL MIGRATION FROM DIFFERENT NATIONS

| Country | Airfare | Smuggling | Total | Rank |
|---|---|---|---|---|
| Puerto Rico | 324 | 0 | 324 | 1 |
| Mexico | 371 | 695 | 1,066 | 2 |
| Dominican Republic | 654 | 1,011 | 1,655 | 3 |
| Costa Rica | 498 | 2,950 | 4,448 | 4 |
| Nicaragua | 733 | 4,000 | 4,733 | 5 |
| Peru | 795 | 6,000 | 6,795 | 6 |

| Independent Variables | Puerto Rico | Mexico | Dominican Republic | Costa Rica | Nicaragua | Peru |
|---|---|---|---|---|---|---|
| **FORMS OF CAPITAL** | | | | | | |
| **Individual Social Capital** | | | | | | |
| Parent a United States Migrant | 0.043 | 0.096 | 0.042 | 0.007 | 0.006 | 0.005 |
| United States Migrant Siblings | 0.174 | 0.116 | 0.148 | 0.068 | 0.070 | 0.081 |
| Wife a United States Migrant | 0.027 | 0.009 | 0.014 | 0.004 | 0.005 | 0.001 |
| United States Migrant Children | 0.038 | 0.037 | 0.043 | 0.018 | 0.024 | 0.017 |
| Social Capital Index | 0.234 | 0.204 | 0.204 | 0.082 | 0.090 | 0.089 |
| **General Social Capital** | | | | | | |
| Prop. United States Migrants in Community | 0.233 | 0.127 | 0.101 | 0.036 | 0.048 | 0.015 |
| **Individual Human Capital** | | | | | | |
| Education | 6.176 | 4.294 | 6.927 | 7.365 | 6.840 | 12.666 |
| Years of Labour Force Experience | 11.007 | 13.720 | 15.321 | 16.625 | 17.056 | 17.933 |
| Skilled Occupation at Origin | 0.032 | 0.049 | 0.087 | 0.133 | 0.129 | 0.254 |
| Human Capital Index | 0.308 | 0.332 | 0.433 | 0.496 | 0.491 | 0.704 |
| **Physical Capital** | | | | | | |
| Land | 0.000 | 0.084 | 0.086 | 0.098 | 0.059 | 0.026 |
| Home | 0.195 | 0.293 | 0.240 | 0.393 | 0.406 | 0.483 |
| Business | 0.028 | 0.081 | 0.105 | 0.154 | 0.201 | 0.162 |
| **KEY CONTROL VARIABLES** | | | | | | |
| **Cost of Migration** | | | | | | |
| Ranking | 1 | 2 | 3 | 4 | 5 | 6 |
| Dollar Cost Estimate | $324 | $1,066 | $1,655 | $4,448 | $4,733 | $6,795 |
| **Community Category** | | | | | | |
| State Capital | 0.398 | 0.161 | 0.212 | 0.000 | 0.107 | 0.734 |
| Municipal Seat | 0.410 | 0.601 | 0.310 | 0.301 | 0.893 | 0.266 |
| Small town or village | 0.191 | 0.238 | 0.478 | 0.699 | 0.000 | 0.000 |
| **OTHER CONTROL VARIABLES** | | | | | | |
| **Demographic Background** | | | | | | |
| Age | 25.126 | 26.683 | 31.062 | 31.918 | 32.229 | 37.281 |
| Married or in Consensual Union | 0.369 | 0.501 | 0.564 | 0.567 | 0.636 | 0.682 |
| Number of Children under 18 | 0.612 | 1.441 | 1.423 | 1.165 | 1.445 | 1.340 |
| **Documentation** | | | | | | |
| Citizen of Resident Alien | 1.000 | 0.014 | 0.019 | 0.000 | 0.000 | 0.000 |
| **Period** | | | | | | |
| Before 1980 | 0.695 | 0.653 | 0.477 | 0.402 | 0.398 | 0.401 |
| 1980-1989 | 0.166 | 0.211 | 0.247 | 0.253 | 0.252 | 0.255 |
| 1990-1995 | 0.094 | 0.093 | 0.159 | 0.159 | 0.166 | 0.169 |
| After 1996 | 0.046 | 0.043 | 0.116 | 0.186 | 0.183 | 0.175 |

TABLE 4. EFFECTS OF DIFFERENT FORMS OF CAPITAL ON THE PROBABILITY THAT A MALE HOUSEHOLD HEAD FROM SIX LATIN AMERICAN SOCIETIES TOOK A FIRST TRIP TO THE UNITED STATES 1965-SURVEY DATE

| Independent Variables | Puerto Rico | Mexico | Dominican Republic | Costa Rica | Nicaragua | Peru |
|---|---|---|---|---|---|---|
| **FORMS OF CAPITAL** | | | | | | |
| **Individual Social Capital** | | | | | | |
| Parent a United States Migrant | 1.039*** | 0.580*** | 1.409*** | 1.218** | 1.947*** | -15.201 |
| United States Migrant Siblings | 0.812 | 0.827*** | 1.067*** | 0.673** | 1.456*** | 1.037 |
| Wife a United States Migrant | 0.968** | 0.625*** | 2.462*** | 1.105+ | 2.196*** | 4.604*** |
| United States Migrant Children | 0.825 | 0.967*** | 1.277*** | 0.961+ | -0.598 | 0.871 |
| **General Social Capital** | | | | | | |
| Prop. United States Mig. in Com. | 0.000 | 3.040*** | 1.510 | 19.560*** | 3.040** | 12.610 |
| **Individual Human Capital** | | | | | | |
| Education | 0.020 | -0.013*** | 0.058* | 0.013 | 0.101*** | 0.161+ |
| Yrs. of Labour Force Exp. | -0.026 | -0.017*** | 0.029 | -0.326 | -0.012 | 0.065 |
| Skilled Occupation | -0.641 | -0.930*** | 0.014 | -0.857* | -0.701* | -0.971 |
| **Physical Capital** | | | | | | |
| Land | --- | 0.201*** | 0.480 | -0.130 | -0.303 | --- |
| Home | -0.463 | -0.232*** | -0.578* | -0.271 | 0.156 | 0.421 |
| Business | 0.801 | -0.455*** | -0.671+ | 0.169 | 0.169 | 0.639 |
| **CONTROL VARIABLES** | | | | | | |
| (Available upon request) | | | | | | |
| | | | | | | |
| Likelihood Ratio | 198.20*** | 6924.82*** | 224.60*** | 210.44*** | 210.44*** | 27.786*** |
| | | | | | | |
| Person Years Observed | 14,287 | 394,456 | 21,301 | 40,362 | 40,362 | 17,733 |

TABLE 5. EFFECTS OF DIFFERENT FORMS OF CAPITAL ON THE PROBABILITY THAT A MALE HOUSEHOLD HEAD FROM SIX LATIN AMERICAN SOCIETIES TOOK A FIRST TRIP TO THE UNITED STATES 1965-SURVEY DATE

| Independent Variables | B | SE | B | SE |
|---|---|---|---|---|
| **FORMS OF CAPITAL** | | | | |
| **Individual Social Capital** | | | | |
| Parent a United States Migrant | 0.613*** | 0.035 | 0.663*** | 0.035 |
| United States Migrant Siblings | 0.852*** | 0.032 | 0.854*** | 0.032 |
| Wife a United States Migrant | 0.790*** | 0.078 | 0.758*** | 0.078 |
| United States Migrant Children | 0.914*** | 0.106 | 0.937*** | 0.106 |
| **General Social Capital** | | | | |
| Prop. United States Migrants in Community | 2.910*** | 0.104 | 2.800*** | 0.104 |
| **Individual Human Capital** | | | | |
| Education | -0.008* | 0.004 | -0.017*** | 0.004 |
| Years of Labour Force Experience | -0.016*** | 0.003 | -0.016*** | 0.003 |
| Skilled Occupation at Origin | -0.853 | 0.078 | -0.790*** | 0.077 |
| **Physical Capital** | | | | |
| Land | --- | --- | 0.226*** | 0.052 |
| Home | -0.205*** | 0.038 | -0.189*** | 0.038 |
| Business | -0.385*** | 0.059 | -0.366*** | 0.059 |
| **KEY CONTROLS** | | | | |
| **Community Category** | | | | |
| State Capital | -0.215*** | 0.045 | -0.259*** | 0.045 |
| Municipal Seat | --- | --- | --- | --- |
| Small town or village | 0.162 | 0.030 | 0.144*** | 0.032 |
| **Country of Origin** | | | | |
| Mexico | --- | --- | --- | --- |
| Puerto Rico | -0.513*** | 0.088 | --- | --- |
| Dominican Republic | -0.995*** | 0.099 | --- | --- |
| Costa Rica | -0.829*** | 0.086 | --- | --- |
| Nicaragua | -1.100*** | 0.096 | --- | --- |
| Peru | -1.743*** | 0.239 | --- | --- |
| **Cost of Migration** | | | | |
| Relative Ranking | --- | --- | -0.328*** | 0.021 |
| **OTHER CONTROLS** | | | | |
| **Demographic Background** | | | | |
| Age | 0.251*** | 0.007 | 0.254*** | 0.007 |
| Age squared | -0.004*** | 0.001 | -0.004*** | 0.001 |
| Married or in Consensual Union | -0.131*** | 0.038 | -0.135*** | 0.037 |
| Number of Children under 18 | -0.074*** | 0.010 | -0.071*** | 0.010 |
| **Period** | | | | |
| Before 1980 | --- | --- | --- | --- |
| 1980-1989 | 0.137*** | 0.034 | 0.159*** | 0.034 |
| 1990-1995 | -0.048 | 0.052 | -0.042 | 0.052 |
| After 1996 | -0.023 | 0.077 | -0.039 | 0.077 |
| | | | | |
| Intercept | -7.451*** | 0.085 | -6.814 | 0.096 |
| Likelihood Ratio | 7686.21*** | | 7549.97*** | |
| Person Years Observed | 524,616 | | 524,616 | |

| Independent Variables | Main Effects Only | | With Interactions | |
|---|---|---|---|---|
| | B | SE | B | SE |
| **FORMS OF CAPITAL** | | | | |
| **Individual Social Capital** | | | | |
| Social Capital Index | 1.000*** | 0.027 | 0.290*** | 0.082 |
| **General Social Capital** | | | | |
| Prop. United States Migrants in Community | 2.800*** | 0.105 | 2.441*** | 0.123 |
| **Individual Human Capital** | | | | |
| Human Capital Index | -1.000*** | 0.076 | -1.918*** | 0.169 |
| **Physical Capital** | | | | |
| Land | 0.226*** | 0.051 | 0.236*** | 0.050 |
| Home | -0.189*** | 0.038 | -0.190*** | 0.038 |
| Business | -0.366*** | 0.059 | -0.384*** | 0.059 |
| **KEY CONTROLS** | | | | |
| **Cost of Migration** | | | | |
| Relative Cost Ranking | -0.328*** | 0.021 | -0.582*** | 0.035 |
| Relative Cost*Human Capital | --- | --- | 0.390*** | 0.061 |
| Relative Cost*Social Capital | --- | --- | 0.336*** | 0.037 |
| **Community Category** | | | | |
| State Capital | -0.259*** | 0.044 | -0.303*** | 0.070 |
| Municipal Seat | --- | --- | --- | --- |
| Small town or village | 0.144*** | 0.030 | -0.127* | 0.052 |
| Small town * Prop. United States Migrants | --- | --- | 1.364*** | 0.210 |
| **OTHER CONTROLS** | | | | |
| **Demographic Background** | | | | |
| Age | 0.235*** | 0.006 | 0.258*** | 0.006 |
| Age squared | -0.005*** | 0.001 | -0.005*** | 0.001 |
| Married or in Consensual Union | -0.135*** | 0.037 | -0.134*** | 0.037 |
| Number of Children under 18 | -0.071*** | 0.010 | -0.070*** | 0.010 |
| **Period** | | | | |
| Before 1980 | --- | --- | --- | --- |
| 1980-1989 | 0.158*** | 0.033 | 0.155*** | 0.033 |
| 1990-1995 | -0.042 | 0.051 | -0.052 | 0.051 |
| After 1996 | -0.039 | 0.076 | -0.098 | 0.077 |
| | | | | |
| Intercept | -6.814*** | 0.095 | -6.243*** | 0.109 |
| Likelihood Ratio | 7549.97*** | | 7716.51*** | |
| Person Years Observed | 524,616 | | 524,616 | |

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TABLE 7. INTERACTIVE MODEL OF THE PROBABILITY THAT A MALE HOUSEHOLD HEAD FROM SIX LATIN AMERICAN SOCIETIES TOOK AN ADDITIONAL TRIP TO THE UNITED STATES BETWEEN 1965 AND THE SURVEY DATE.

| Independent Variables | Main Effects Only | | With Interactions | |
|---|---|---|---|---|
| | *B* | *SE* | *B* | *SE* |
| **FORMS OF CAPITAL** | | | | |
| **Individual Social Capital** | | | | |
| Social Capital Index | 0.260*** | 0.017 | -0.013 | 0.086 |
| **General Social Capital** | | | | |
| Prop. United States Migrants in Community | 1.476*** | 0.095 | 1.132*** | 0.119 |
| **Individual Human Capital** | | | | |
| Human Capital Index | -1.078*** | 0.074 | -1.364*** | 0.211 |
| **Migration-Specific Human Capital** | | | | |
| Years of United States Experience | 0.062*** | 0.003 | 0.062*** | 0.003 |
| Number of United States Prior Trips | 0.212*** | 0.003 | 0.211*** | 0.003 |
| Documented | 1.223*** | 0.036 | 1.214*** | 0.036 |
| **Physical Capital** | | | | |
| Land | -0.022 | 0.029 | -0.019 | 0.029 |
| Home | 0.016 | 0.025 | 0.015 | 0.025 |
| Business | -0.584*** | 0.038 | -0.585*** | 0.038 |
| **KEY CONTROLS** | | | | |
| **Cost of Migration** | | | | |
| Relative Cost Ranking | 0.210*** | 0.032 | 0.034 | 0.063 |
| Relative Cost*Human Capital | --- | --- | 0.133 | 0.091 |
| Relative Cost*Social Capital | --- | --- | 0.135** | 0.042 |
| **Community Category** | | | | |
| State Capital | -0.520*** | 0.052 | -0.558*** | 0.053 |
| Municipal Seat | --- | --- | --- | --- |
| Small town or village | 0.335*** | 0.023 | 0.102 | 0.053 |
| Small town * Prop. United States Migrants | --- | --- | 0.851*** | 0.171 |
| **OTHER CONTROLS** | | | | |
| **Demographic Background** | | | | |
| Age | -0.047*** | 0.007 | -0.046*** | 0.007 |
| Age squared | -0.001*** | 0.0001 | -0.001*** | 0.0001 |
| Married or in Consensual Union | -0.110*** | 0.032 | -0.109*** | 0.032 |
| Number of Children under 18 | 0.011 | 0.006 | 0.011 | 0.006 |
| **Period** | | | | |
| Before 1980 | --- | --- | --- | --- |
| 1980-1989 | -0.007 | 0.027 | -0.015 | 0.027 |
| 1990-1995 | -0.281*** | 0.040 | -0.282*** | 0.040 |
| After 1996 | -0.448*** | 0.063 | -0.463*** | 0.064 |
| | | | | |
| Intercept | -0.725*** | 0.130 | -0.297*** | 0.169 |
| Likelihood Ratio | 26820.49*** | | 26858.79*** | |
| Person Years Observed | 91,873 | | 91,873 | |