

Una Comparación de los Determinantes de la Migración de Retorno de Latinoamericanos en Los Estados Unidos*

Fernando Riosmena*

Douglas S. Massey♦

Palabras clave: Migración, migración resultante: tendencias de la migración; Migración circular: corriente migratoria; lugar de origen

Resumen

En el presente trabajo realizamos una comparación de la selectividad y determinantes de la migración de retorno desde Estados Unidos hacia México, Puerto Rico, la República Dominicana, Nicaragua y Costa Rica. Utilizando datos de los proyectos de migración mexicana y latinoamericana (MMP/LAMP), analizamos las características de los migrantes de retorno comparados con las de todos los migrantes de forma bivariada, además de analizar los determinantes de la migración de retorno para cada país por separado utilizando variables comparables para cada caso. Para tal fin, se estimaron modelos de supervivencia en tiempo discreto que predicen la probabilidad de que un jefe migrante en los Estados Unidos en el año $y-1$ realice un viaje *migratorio* (i.e no de visita) a su país de origen en el año y . El método de estimación es el de estimación de ecuaciones generalizadas, el cual reporta errores estándar robustos. En general, e incluso después de controlar por todos los factores relevantes disponibles para el análisis, mexicanos y costarricenses tienen viajes más cortos y probabilidades más altas de regresar a sus países de origen que el caso de nicaragüenses, puertorriqueños y dominicanos. Entre otros resultados, las mujeres migrantes son menos propensas a realizar viajes de retorno que sus contrapartes masculinas. Analizando algunos aspectos respecto al estado marital y el ciclo de vida familiar de los migrantes, se especula que los migrantes puertorriqueños y dominicanos son menos propensos a regresar –controlando por demás factores- debido a que tienden a realizar viajes migratorios acompañados por su familia en comparación con los otros países. En general, no sólo la magnitud sino la dirección de los factores estudiados varían de acuerdo al país que esté siendo analizado. Se discuten algunas extensiones de este trabajo para considerar cada contexto individual mientras que se aprovecha la posibilidad de comparar las bases de datos.

* Trabalho apresentado no I Congresso da Associação Latino Americana de População, ALAP, realizado em Caxambú- MG – Brasil, de 18- 20 de Setembro de 2004.

♦ Fernando Riosmena Ph.D. Candidate. Population Studies Center, University of Pennsylvania. 3718 Locust Walk. Philadelphia, PA. 19104. This research was supported by a doctoral training grant from the Fogarty International Center, National Institutes of Health. We thank María Aysa, Paola Cantú, Chiara Capoferro, Mariano Sana, and Rania Tfamily for encouragement, comments, and suggestions. Remaining mistakes are all ours. Correspondence regarding the paper should be directed to Fernando Riosmena .

♦ Douglas S. Massey. Professor of Sociology and Public Affairs, Princeton University. 239 Wallace Hall. Princeton, NJ.

Una Comparación de los Determinantes de la Migración de Retorno de Latinoamericanos en Los Estados Unidos*

Fernando Riosmena*

Douglas S. Massey♦

A better comprehension of the characteristics of and the context within which people make migratory decisions is an ideally necessary basis for developing sound policy-making in both destinations and origins. In the case of the former, assessing how a diversity of structural changes (e.g. economic cycles, changes in the labor market structure, etc.) influence migration choices may be instrumental to evaluate and put into perspective the effectiveness and consequences of past U.S. immigration policy. In addition, understanding people's migratory dynamics may put issues of settlement, 'assimilation', and transnational life into perspective.¹ In the case of sending regions, an appreciation of how people make both migration and return decisions may be relevant for scholars and policymakers in labor-exporting countries given the association between the migration process and issues of economic development (Durand et al. 1996; Massey 1988; Taylor et al. 1996). Most notably, the money remitted or brought back by migrants to their home communities represents a sizable proportion of various countries' GDP, while some scholars suggest that remitting behavior is closely associated to socioeconomic status, household structure (Sana 2003), and –furthermore- with the probability of return migration (Galor and Stark 1990).

The purpose of this study is to make an initial exploration of the determinants of migration from the United States back to Latin America from a country-comparative perspective. I use data from comparable surveys (plus some aggregate-level measures) from Mexico, Puerto Rico, the Dominican Republic, Nicaragua, and Costa Rica to 1) make a general depiction of the US migratory dynamics of household heads in each country; 2) compare the characteristics of return migrants with respect to those of out-migrants from the same countries/communities of origin (i.e. their 'selectivity'); and 3) compare (expected) return propensities across countries while standardizing/controlling for differences in the distribution of various sociodemographic characteristics.

* Trabalho apresentado no I Congresso da Associação Latino Americana de População, ALAP, realizado em Caxambú- MG – Brasil, de 18- 20 de Setembro de 2004.

♦ Fernando Riosmena Ph.D. Candidate. Population Studies Center, University of Pennsylvania. 3718 Locust Walk. Philadelphia, PA. 19104. This research was supported by a doctoral training grant from the Fogarty International Center, National Institutes of Health. We thank María Aysa, Paola Cantú, Chiara Capoferro, Mariano Sana, and Rania Tfaily for encouragement, comments, and suggestions. Remaining mistakes are all ours. Correspondence regarding the paper should be directed to Fernando Riosmena .

♦ Douglas S. Massey. Professor of Sociology and Public Affairs, Princeton University. 239 Wallace Hall. Princeton, NJ.

¹ However one defines them (see Chavez 1988; Rumbaut 1997; and Portes 2003 for discussions on each topic, respectively).

PREVIOUS RESEARCH

The bulk of empirical studies on Latin America – U.S. migration *dynamics* have exclusively focused on Mexico (e.g. Fussell and Massey 2004; Massey and Espinosa 1997; Parrado 2004; also see Massey and Sana, 2003: p. 6, and references therein). The situation of studies on the determinants of return is similar of course. For instance, Lindstrom (1996) analyzes trip durations of Mexicans in the U.S. using a series of parametric hazard models. Along other considerations, he stresses the importance of economic conditions in the community of origin as determinants of trip duration. He posits (and finds) that investment opportunity in areas of origin is positively associated with migrant’s trip duration in the United States. Hence, migrants coming from those areas tend to have longer trip durations than those coming from less dynamic regions while controlling for a variety of individual- and community-level demographic and migration-specific factors.

Reyes (2001) studies the determinants of trip duration for Mexicans in the U.S. using a discrete-time representation of various nested hazard models. Following some of Lindstrom’s (1996) ideas, Reyes finds that the most important predictors of trip duration are the economic opportunities in the area of origin, the economic opportunities of migrants in the U.S., and –her featured finding- the availability of resources of the household before the time of migration.

Massey and Espinosa (1997) make a critical test of migration theories, also using the case of Mexico. Part of the paper consists on the estimation of discrete-time hazard models predicting the likelihood of return. Among other results, they find that marriage positively predicts return migration for undocumented migrants, but it reduces the odds of return for documented ones. Similarly, ownership of land and/or a home increase the likelihood of return, and –more importantly- so does an increased proportion of self-employed individuals in the community. On the other hand, the odds of making a return trip are negatively associated with both the percentage of people earning twice the minimum wage in the community, and the proportion of females in manufacture. In sum, Massey and Espinosa find that “precepts arising from the new economics of labor migration receive very strong support [from their analyses]” (p. 987).

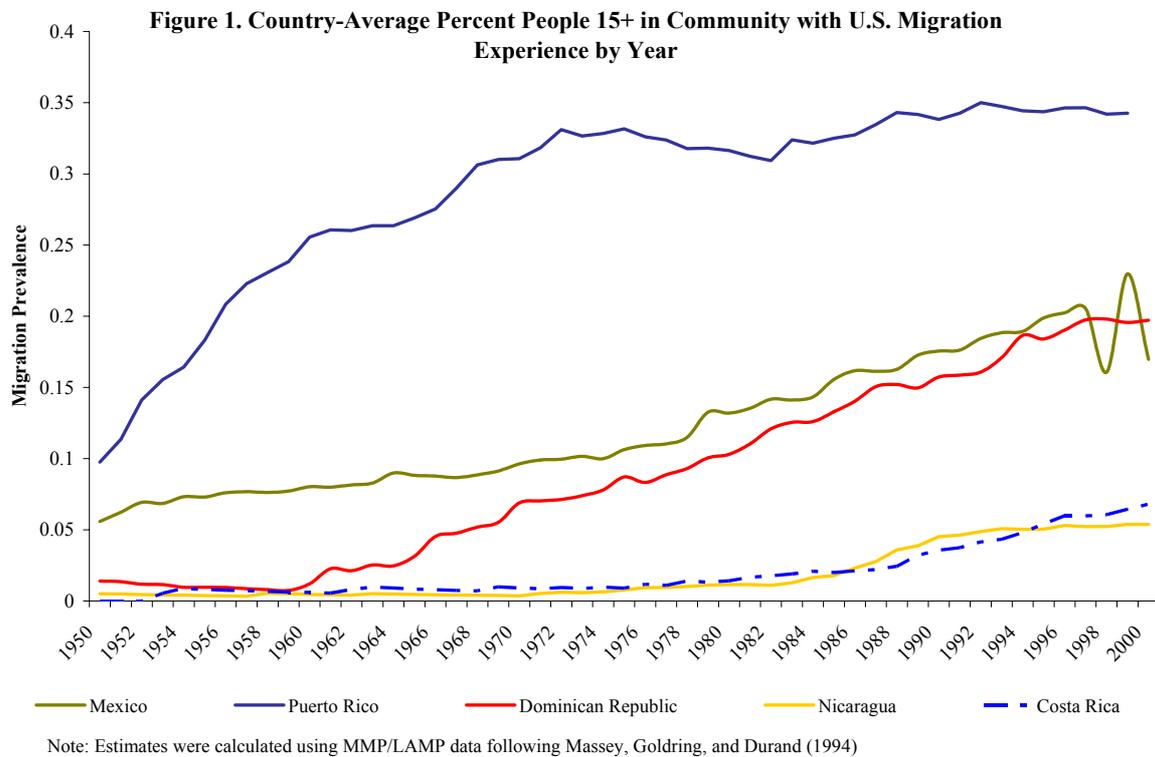
Though Mexicans represent the majority of both flows from Latin America and of undocumented flows to the US, the study of the migratory dynamics from and back to other countries in the region is highly relevant for a number of reasons. First, to my knowledge, there are no comparative studies of the migratory dynamics of Latin Americans (or other migrant groups for that matter) from an individual, multivariate perspective.^{2,3} Moreover, second, the study of these dynamics is highly relevant from the perspective of the sending country since a considerable proportion of the population of some Latin American countries are either ‘currently’ located in the U.S., or have international migratory experience (e.g. Rivera Batiz and Santiago 1996; Grasmuck and Pessar 1991; Massey and Sana 2003).⁴ Third, given the differences in conditions of exit for migrants in each country, it is interesting to

² Most comparative *immigration* studies (as opposed our issue at hand, the more demographic issue of migration dynamics) compare outcomes for the three largest Latin American groups in the country: Cubans, Mexicans, and Puerto Ricans.

³ I do not claim that such approach is superior to others, but I do contend this kind of analysis is appropriate and needed, though it has clear limitations (see summary and conclusions)

⁴ Also see figure 1 for country-average estimates of US migration prevalence in the community.

study which factors motivate migrants to move back to their home countries. In the end, these analyses could then potentially contribute to refine some migration theories.⁵



DATA AND METHODS

The data come from the Latin American Migration Project (LAMP) and its forerunner, the Mexican Migration Project (MMP), both based at the University of Guadalajara and Princeton University.⁶ The projects recollect wide-ranging multi-level social, economic, and demographic data, particularly focusing on those pertaining to the study of migration to the United States and, in some cases and to a lesser extent, other countries.⁷ The communities under study are selected attempting to present ample variation along the socioeconomic continuum.⁸ Within each community, a simple random sample of 100-200 households is selected. Individual- and household-level data are collected via a flexible survey instrument, the ethnosurvey (see Axinn et al. 1991; Massey 1987). In

⁵ I would add a fourth rationale. Since migration dynamics seem to have an influence on the amount remitted back to the home country, a better understanding of the factors that influence the former is appropriate given that the latter represent a major source of foreign income for a number of countries in the region.

⁶ For a detailed description of this weight construction, see Massey and Espinosa 1997; Massey and Parrado 1994.

⁷ The Peruvian databases –which were not included due to their small sample size regarding migration experience to the U.S.- contain information on any international migration experience regardless of the country of destination. In addition, the LAMP has also recollected information on migration from Nicaragua to Costa Rica for all Nicaraguan communities, and on migration to Spain in one community in the Dominican Republic. I hereby include only the experience of those people who migrated to the US: save a few exceptions, the people with U.S. migration experience have no migration experience to the other countries studied by the LAMP.

⁸ For a more detailed description of the project methodology see Massey and Sana (2004), or the projects' websites.

addition, a non-random snowball sample of roughly 10% of the community-of-origin sample was interviewed in the U.S. to compensate for the impossibility to reach people whose entire household is in the U.S. at the time of the survey. Sample weights are constructed in order to account for this compensation.⁹ Most though not all content in the household surveys is comparable across countries, thus facilitating comparative analyses. For this sake, I only include communities where both U.S. and home communities were surveyed after 1998 (i.e. all LAMP communities for the specified countries, plus 36 communities in Mexico: see table 1).¹⁰

	Mexico	Puerto Rico	Dominican Republic	Nicaragua	Costa Rica
No. of communities included in the analysis	36	5	7	5	4
No. of interviewed households	5,718	634	978	1,017	811
No. of heads with U.S. migration experience	1,689	266	168	87	90
% of heads with U.S. migration experience	29.5%	42.0%	17.2%	8.6%	11.1%
No. of migrant heads censored at time of the survey	415	61	104	33	35
% of migrant heads censored at the time of the survey	24.6%	22.9%	61.9%	37.9%	38.9%
% of returnees coming back before 1 year*	70.7%	26.8%	42.0%	44.7%	53.9%
% of returnees coming back before 2 years*	80.5%	41.1%	47.9%	65.2%	73.2%
% of returnees coming back before 5 years*	91.4%	62.0%	67.1%	77.3%	89.4%
% of returnees coming back before 10 years*	96.1%	75.2%	85.9%	89.9%	93.1%
<u>Out-migration selectivity indicators in stable characteristics:</u>					
% Female household heads	14.6%	42.7%	34.4%	28.0%	19.1%
% Female migrant heads	7.2%	47.3%	37.2%	28.4%	9.8%
Mean No. years of education, all heads	6.01	8.59	8.60	5.30	7.76
Mean No. years of education, migrant heads	5.96	8.95	10.05	9.72	8.09

Table 1. Descriptive Statistics of the Samples by Country

⁹ In the case of Mexico, Massey and Zenteno (2000) performed a validity check of the MMP database, using the National Survey of Demographic Dynamics in Mexico (ENADID, by its acronym in Spanish) as the criterion of reference. The ENADID is a nationally representative survey that measures, the volume and direction of migration flows to and from the United States, among other demographic events. The authors found that estimates calculated with MMP data do not differ in significant ways from those estimated from the ENADID database when restricting the analysis to Western Mexico, historically the main source and most traditional region of Mexican migration to the U.S.

¹⁰ The questionnaire applied to Mexican communities after 1998 is the one mostly comparable to the different LAMP questionnaires.

Household heads are the main unit of analysis used in this paper. Thus, the analyses mostly take advantage of their available retrospective labor and migration histories. This database has the desirable property of including time-varying covariates, which is not to say that there are no disadvantages to its use of course (see summary and conclusions section). I supplement these data with that coming from a roster of all members of the household and children of the head *not* living in it at the time of the survey, and limited (but time-varying) information on the migration experience of the head's parents and siblings. I also use some information available on their first migratory experience to the U.S. to construct community's migration prevalence estimates (see figure 1; for a description of the measure, see Massey, Goldring, and Durand 1994). I further complement these data with comparable macroeconomic time series coming from the World Bank's Development Indicators database, yielding a multi-level database.¹¹

I use household heads' retrospective labor and migration histories in order to estimate binary logistic regressions predicting the likelihood that a person makes a return trip in a given year y controlling for characteristics in $y-1$ (see table 2 for statistics on individual-level covariates). This specification yields a discrete-time event history analysis (Allison 1995). In addition, the estimation method –Generalized Estimating Equations (GEE)- takes into account the temporal dependence between observations (i.e. person-years) via an intra-cluster correlation matrix, thus producing asymptotically consistent and more efficient estimates while reporting standard errors robust to such clustering (Zeger and Liang 1985).

RESULTS

Table 1 (shown above) includes overall descriptive statistics re the out- and return migration dynamics of the samples by country. Mexicans and Costa Ricans are more likely to make a return trip to the home country, and to do so in a shorter time (see also model I in table 3, discussed below). Of those who return by the survey year, Puerto Ricans have the overall longest trip durations: 25% of them made a trip longer than 10 years. Though Dominicans are less likely to initiate a migratory trip than Puerto Ricans (and Mexicans), their mean trip durations are similar to those of their Caribbean counterparts. However, they have lower odds of return than Puerto Ricans partly because a higher proportion of them are censored at the time of the survey. This is partly driven by the fact that Puerto Rican migration streams started at an earlier year and in a higher proportion than Dominican ones in the communities studied (also see Massey and Sana 2003; Rivera-Batiz and Santiago 1998: Chapter 3;). Nicaraguans lie at the middle of the spectrum depicted by these five countries: their odds of return are approximately half of those of Mexicans and three times higher than those of Puerto Ricans.

Table 2 presents a quick-and-dirty way to show differences between out-migrants and return migrants and introduces the individual-level covariates to be introduced in the analysis. The table presents a comparison of the profile of all US-bound migrants at the beginning of their trip (panel “A”) vis-à-vis the characteristics of migrants at their year of return (panel “B”). Among other results, except for the case of the Dominican Republic, female migrants seem to be less likely to return by comparing the marginal distributions of gender by migration and return migration status. Dominican and Puerto Rican women are more likely not only to return (and migrate in the first place: see lower panel of table 1) than their Mexican, Nicaraguan, and Costa Rican counterparts: they are also more likely to be classified as household heads (more on this on the conclusions section).

¹¹ I include the most relevant data I could while considering its comparability across sources.

Except for the case of Nicaragua, married migrants are more likely to return than their non-married counterparts. The negligible difference between migrants and returnees on their marital status in Puerto Rico and the Dominican Republic becomes substantial when considering consensual unions into the picture. Collapsing both types of union almost eliminates any differences in marital status between out-migrants and returnees in Costa Rica. The cases of Mexico and Nicaragua remain as just depicted.

In addition, in the case of all countries, return migrants are slightly but negatively selected in terms of education with respect to out-migrants, though the educational differences between out- and return migrants are rather small in all countries. This may be in part reflecting differences educational attainment by cohort: if we assumed inter-cohort homogeneity in trip duration (and age at trip), older people would be more likely to having returned to the home land. Furthermore, since out-migrants are actually positively selected in terms of education with respect to the overall population (see lower panel of table 1; Funkhouser 1992; Lindstrom and Massey 1994; Massey and Sana 2003; Portes and Grosfoguel 1994) return migration thus tends to offset initial out-migration selectivity.¹²

Occupation-wise, people are slightly less likely to be working on a skilled occupation at the end of their trip than migrants are at the beginning of their trip. Except for the case of Mexico, migrants out of the labor force represent a higher proportion of returnees than of all migrants. In addition, return migrants are also more likely to own a property in all countries (the largest difference being in the Dominican Republic).¹³ The comparison between returnees and out-migrants in terms of business ownership varies across countries. In the case of Mexico the proportions of migrants and returnees that own a business is virtually the same while it is slightly larger in Costa Rica and quite larger (the double) in the Dominican Republic. For Puerto Ricans, and to a much lesser extent Nicaraguans, owning a business may be associated with a lower propensity to return.¹⁴

Not surprisingly, higher proportions of people with legal documents are found among returnees compared to out-migrants on the year of their departure. The absolute and relative difference in such proportions is highest for Nicaraguans and Mexicans while it is smallest smaller for Costa Ricans and Dominicans. Finally, the difference between the proportion of people whose father or mother had U.S. migration experience at the year of migration and the year of return is only substantial in Puerto Rico and the Dominican Republic: in both countries return migrants are less likely to have a parent with US migration than all migrants at the start of their trip. The case of siblings with US migration experience is mixed across countries: while returnees have a slightly higher proportion of siblings with previous US migration in Mexico and the Dominican Republic, this is not the case of Puerto Rico, Nicaragua, and Costa Rica.

As stated more than once above, the differences in the gender and age composition between the five countries samples of household heads could be partly driving inter-country return propensities. Model I in table 3 shows a comparison of the likelihood of return between the five countries (Mexico being the reference category) while controlling for the age, sex, and cumulative US migration experience of the household head during the person year observed. The model details are as advanced in the data and methods section. The odds

¹² As shown in the lower panel of table 1, selectivity in out-migration is overall positive in terms of education, though it is quite negligible in the case of Mexico and Puerto Rico while quite notable in the case of Nicaragua and, to a lesser extent, the Dominican Republic.

¹³ It is striking –in my opinion– that Puerto Ricans, who have access to a variety of credit markets, have lower overall property ownership. I will check into this issue.

¹⁴ Alas, the quantities do not show the country of location of properties and business. I am working to control for this.

of return for Puerto Ricans, Dominicans, Nicaraguans, and Costa Ricans are 70%, 85%, 50%, and 25% less likely than those of Mexicans. Pair-wise differences in the odds of return between all countries are significant. If we consider a full model (i.e. model IV) using all sensible comparable data available for the five countries, these propensities reduce – especially for the case of Puerto Rico- and loose statistical significance when comparing Mexico and Costa Rica, and Puerto Rico and Nicaragua (though overall the global test that all coefficient differences are equal to zero can be rejected).

	Mexico		Puerto Rico		Dominican Republic		Nicaragua		Costa Rica	
	A	B	A	B	A	B	A	B	A	B
% Female	0.044	0.035	0.390	0.329	0.352	0.357	0.290	0.263	0.081	0.049
Age	28.3	29.5	31.7	36.2	32.0	36.3	34.6	38.5	32.3	34.4
Year	1985	1985	1975	1977	1983	1986	1989	1990	1992	1992
% married (REF = no partner)	63.1%	67.2%	35.9%	36.2%	45.2%	41.8%	59.5%	49.9%	70.3%	75.4%
% Consensual union (REF = no partner)	2.8%	2.9%	17.2%	13.6%	14.0%	22.8%	12.5%	12.8%	7.4%	4.7%
Education (in years)	5.8	5.4	9.0	8.4	10.6	9.9	10.5	10.4	8.7	8.3
On skilled occupation (REF = out of LF)	20.0%	15.6%	20.6%	18.4%	27.6%	23.5%	31.3%	31.3%	28.0%	29.1%
On unskilled occupation (REF = out of LF)	77.5%	81.9%	42.6%	42.2%	45.5%	35.2%	44.0%	30.9%	60.9%	55.6%
Owned at least one property during PY	41.4%	44.8%	22.9%	26.5%	14.9%	31.2%	51.2%	60.0%	51.5%	55.9%
Owned at least one business during PY	4.5%	4.5%	3.9%	2.5%	7.6%	16.1%	21.2%	19.6%	14.4%	17.1%
% 2nd+ trip (REF = on 1st trip)	57.5%	61.9%	34.8%	30.4%	17.2%	19.0%	17.7%	13.2%	30.4%	28.1%
Trip duration (months)	46.2	28.2	111.7	92.3	149.7	57.4	85.0	47.9	43.6	31.3
% with legal working documents on trip	27.3%	32.3%	100.0%	100.0%	61.0%	64.2%	5.0%	12.8%	3.5%	4.7%
% Parent a U.S. migrant in or before PY	31.5%	33.2%	21.0%	20.5%	44.0%	34.7%	20.1%	8.8%	13.7%	15.8%
% Sibling a U.S. migrant in or before PY	26.1%	26.5%	45.8%	43.8%	41.3%	48.0%	26.3%	24.6%	23.1%	15.3%
Person-trips	3,882	3,592	271	264	219	119	95	69	128	97

Table 2. Means of Selected Characteristics of Migrants (A) at the Beginning of Trip and (B) at the End of the Trip (where applicable)

	I		II			
	β	S.E.	β	S.E.		
Age (years)	0.0032	0.004	0.0042	0.005		
Female	-0.4274	0.1183	**	-0.5169	0.1283	**
Not in a union during PY (REF = married)				-0.0701	0.0576	
In consensual union in PY (REF = married)				-0.0289	0.0981	
1+ minors living in household during PY				0.0501	0.0484	
Less than 6 years of education (REF = 6-12)				0.4322	0.0862	**
More than 12 years of education				-0.0781	0.1498	
In a skilled occupation (REF = unskilled occup)				-0.2821	0.0741	**
Out of the labor force (REF = unskilled occup)				0.1301	0.1008	
Owned at least one property during PY				0.0517	0.054	†
Owned at least one business during PY				0.1814	0.0963	
Cumulative U.S. experience (months)	0.0001	0.0004		0.0012	0.0004	**
In 2 nd + migratory trip				-0.1399	0.0792	†
Held legal working documents during PY				-0.2748	0.0871	**
Parent a U.S. migrant during or before PY				0.0335	0.1152	
Sibling a U.S. migrant during or before PY				0.0565	0.0642	
% people 15+ w/U.S. mig exp in community				-0.0105	0.0016	**
Yearly growth in real GDP				0.0015	0.0037	**
Home country's exchange rate (USD = 1.00)				-0.0017	0.0015	**
U.S. average unemployment rate				-0.0002	0.0112	**
Puerto Rico (REF = Mexico)	-1.2353	0.116	**	-0.7709	0.1495	**
Dominican Republic (REF = Mexico)	-1.824	0.168	**	-1.6348	0.2013	**
Nicaragua (REF = Mexico)	-0.7292	0.1907	**	-0.8228	0.2143	**
Costa Rica (REF = Mexico)	-0.2772	0.167	†	-0.0178	0.3478	

** p < 0.01 * 0.01 < p < 0.05 † 0.10 < p < 0.05

Table 3. Pooled GEE Logistic Regression Predicting the Likelihood of Return Migration in Year y

While the aforementioned comparison is interesting, coefficient interpretation for a pooled model seems less so given the potential differences in the magnitude and—especially—the direction of some of the covariates, as suggested by table 2. Thus, table 4 shows results of full country-specific models using the covariates described in table 3. Save a couple of exceptions related to identification issues,¹⁵ I use the exact same covariates in all models in

¹⁵ Due to the fact that Puerto Ricans have US citizenship by virtue of birth, it is obviously not possible to distinguish between legal documentation and country of origin in their case. In addition, I do not include an

order to stress inter-country comparisons in coefficients of these independent samples. When controlling for possible confounders, the effect of very few variables has the same *direction* across all countries. In the case of non-significant coefficients this distinction may be superfluous to make. But if we consider all of these differences *jointly* then these patterns may say something about how the effect of these factors may not be different only in magnitude across these countries. Moreover, since the case of Mexico is the one better documented, I here focus the discussion oftentimes using Mexico as the reference when drawing comparisons between the coefficients of the most relevant covariates.

Gender is the only covariate where the association between it and return has the same direction in all countries. It is strongly and negatively associated with return in all countries, though these effects are only significant in the cases of Mexico and Puerto Rico. Females are 40 and 55 percent less likely to return than their male counterparts respectively in these two countries, though these differences are not statistically significant. After controlling for some lifecycle-related measures and migration-specific human capital, the effect of age is generally not significant and is relatively small, except for the case of Mexico: an individual ten years older than another one with the exact same set of characteristics (except for their age) is 10% less likely to return. There was no strong evidence suggesting the effect of age may be curvilinear. In the case of the Dominican Republic, Nicaragua, and Costa Rica, this effect is positive but very small and not statistically significant.

Migrants who are out of a union or in a consensual one are less likely to return than married migrants in the cases of Mexico and Costa Rica. Overall, this is not the case in the other three countries, where overall non-married people are more likely to return than married migrants. This could be reflecting an association between marriage and spousal migration to the U.S., which would be a good predictor of settlement in some cases. The presence of minors in the household is only significant and negative in the cases of Puerto Rico and the Dominican Republic, where migrants are less likely to return if they have children under 18 of their own living in the household. But the household per se could be located in the home country or in the U.S. These two pieces of information together suggest that Puerto Ricans and Dominicans may be more likely to migrate with their whole families than the other groups, which reduces the likelihood they will return in any given year and increases the expected trip duration for migrants that eventually return to the home country.

The effect of education is generally curvilinear, strong, and significant. People with less than six years of education in Mexico, Nicaragua, and Costa Rica are two, three, and seven times more likely to return (or have shorter trip durations) than those migrants with six to twelve years of education. In the case of Costa Rica and Nicaragua, highly educated individuals are five and seventeen times more likely to return than people with six to twelve years of education, even after controlling by occupation. In fact, skilled workers from all countries but Costa Rica are considerably less likely to return to their home countries than people in skilled occupations. The odds range between 20% (less likely) in Mexico to 70% in Nicaragua (Puerto Ricans and Dominicans lay in the middle with 40%). On the other hand, people out of the labor force are more likely to return to the home country. Meanwhile, having a property or a business reduces the odds of return in Puerto Rico and the Dominican Republic considerably, but with not much statistical significance, while it increases the odds of return in Nicaragua, Mexico, and –especially- the Dominican Republic. This may be related to the country of location where properties are located (i.e. the home country or the U.S.). Future research will attempt to address this by controlling for this location (available in other components of the survey to be included).

indicator of legal status of the migrant during the person year in the Costa Rican model due to quasi-separation problems.

Overall, an additional month of (cumulative) experience in the U.S. increases the odds of returning to the home country (except for the case of Costa Rica). This is so after controlling for the number of previous trips to the U.S. though most migrants in all samples only make one before the survey year (and most of them finish it as well –see table 1). Similarly, migrants with experience in at least another migratory trip are more likely to go back to the homeland except for Mexicans (who also display the largest proportion of people with more than one trip). Not surprisingly, legalized migrants are generally less likely to migrate back to the home country (or stay longer in the US) in Mexico, the Dominican Republic and Nicaragua. However, only the coefficient for Dominicans is statistically significant at the 0.05 level.

Migration-specific social capital generally is negatively related with return or positively associated with trip duration. Having a sibling or a parent who migrated to the U.S. on or before the intervening person year reduces the odds of return in all countries but Mexico, where they increase by 20% in the case of siblings. Overall, these effects are significant and round 35% in the case of Puerto Ricans with parents previously in the U.S. to 70% for Nicaraguans in the same position. Similarly, the prevalence of U.S. migration experience in the community decreases the odds of return in all countries but Costa Rica. The relationship is one-to-one (negative) in Mexico and the Dominican Republic, and is strongest in Nicaragua, where an additional one percent of people 15 years-old and over with migration experience in the US decreases the likelihood of return to Nicaragua by 20%. It is important, however, to remember that Nicaragua –along with Costa Rica- has the lowest prevalence of U.S. migrants from the sample (see figure 1).

	Mexico		Puerto Rico		Dom. Rep.		Nicaragua		Costa Rica				
	β	S.E.	β	S.E.	β	S.E.	β	S.E.	β	S.E.			
Age (in years)	-0.0143	0.0076	†	-0.0087	0.0098	-0.0026	0.0191	0.0036	0.0175	0.0204	0.024		
Female	-0.5321	0.1962	**	-0.8208	0.1998	**	-0.3523	0.3095	-0.3817	0.5051	-1.5389	1.4126	
Not in a union in PY (REF = married)	-0.0967	0.0712		0.192	0.2178		0.2242	0.3186	1.6646	0.5393	**	-0.4072	0.6446
In consensual union in PY	-0.1228	0.126		-0.1346	0.2724		0.6528	0.514	0.8511	0.7597		-1.8675	1.5388
1+ minors living in household during PY	0.075	0.064		-0.3038	0.1615	†	-0.6493	0.2951	*	0.3035	0.3935	0.2557	0.4869
Less than 6 years of education	0.5482	0.1065	**	-0.221	0.2112		0.4704	0.4215	1.0663	0.4678	*	1.9942	0.4577
More than 12 years of education	-0.0707	0.2064		-0.6752	0.3851	†	-0.7565	0.4838	1.7082	0.4422	**	2.8716	0.7714
In a skilled occupation (REF = unskilled)	-0.2459	0.1018	*	-0.4122	0.1936	**	-0.518	0.3883	-1.1829	0.4773	*	0.1377	0.3511
Out of the labor force (REF = unskilled)	0.034	0.2558		0.2469	0.1928		-0.1226	0.5069	1.0371	0.576	†	3.5202	1.462
Owned at least one property during PY	0.0238	0.0683		-0.0898	0.1925		0.7626	0.3372	*	0.601	0.4085	-0.1823	0.4553
Owned at least one business during PY	0.2166	0.1344		-0.2678	0.5552		0.9824	0.4796	*	0.2824	0.5032	-1.4617	0.6922
Cumulative U.S. experience	0.0028	0.0007	**	-0.0013	0.0009		-0.0029	0.002	-0.0045	0.0023	†	-0.0149	0.0082
In 2 nd + migratory trip	-0.1055	0.089		0.1901	0.2679		0.5397	0.539	0.558	0.5313		0.3361	0.4475
Held legal documents during PY	-0.1373	0.0985		N/A	N/A		-1.5056	0.3621	*	-0.5676	0.6633	a	a
Parent a U.S. migrant on/before PY	0.048	0.1046		-0.4306	0.2104	*	0.1925	0.503	-1.2809	0.5908	*	-0.8844	0.4085
Sibling a U.S. migrant on/before PY	0.1967	0.0831	*	-0.0096	0.166		0.0305	0.341	-0.3181	0.4066		-1.4468	0.5007
% people 15+ w/U.S. mig exp in comm	-0.013	0.002	**	-0.0177	0.0087	*	-0.0055	0.0107	-0.1982	0.0554	**	0.0303	0.042
Yearly growth in real GDP	-0.0001	0.0043		-0.0294	0.0263		0.0418	0.0311	0.0885	0.0475	†	0.0391	0.0769
Home country's exchange rate vs. USD	-0.0059	0.0133		N/A	N/A		0.0516	0.0242	*	-0.097	0.0708	-0.0012	0.0042
U.S. average unemployment rate	-0.0052	0.0167		-0.0003	0.0522		0.0567	0.0996	-0.170	0.2275		0.2456	0.2597

** p < 0.01 * 0.01 < p < 0.05 † 0.10 < p < 0.05

^a Estimate for the variable not available due to quasi-complete separation

Table 4. Country-Specific GEE Logistic Regression Coefficients Predicting the Likelihood of a Return Trip from the US in Year y

DISCUSSION

This paper dealt with the differences in the selectivity and determinants return migration from the US for household heads from Mexico, Puerto Rico, the Dominican Republic, Costa Rica, and Nicaragua. Out of these nationalities, while Mexicans and Puerto Ricans are the ones more likely to migrate to the U.S., it is Mexicans and Costa Rican household heads the ones with higher return propensities (or shorter trip durations). This is true even after controlling for all relevant covariates available for the analysis. Puerto Ricans, on the other hand, have the lowest likelihood of returning to the homeland.

Gender-wise, it is clear that females are overall less likely to both migrate and return to the home land for all groups. There are, however, important differences across them. Mexican and Costa Rican women are the least likely to migrate to the U.S. But, once in the U.S., Costa Rican women have the lowest odds of return (compared to their male counterparts). As mentioned, the actual return probabilities are different by country, and these differences mainly relate to a contrast between genders within each country.

Marital status would seem to be positively associated with return migration under a bivariate perspective. However, the effect is mixed and depends on the country once analyzed using the multivariate models. Some of the evidence suggests that Puerto Ricans and Dominicans may be more likely to migrate with their whole families than the other groups, which reduces the likelihood they will return in any given year and increases the expected trip duration for migrants that eventually return to the home country. Future work will attempt to explore more of these family-related issues by attempting to incorporate limited information on the labor and migratory experience of spouses and children of the head.¹⁶

We have hereby underlined the differences in selectivity and the determinants of return migration from the perspective of these five sending countries. Though these comparisons may be limited by the fact that only (comparable) measures available for *all* countries, this exploration may be useful since we can –among other things- compare return propensities across countries standardizing (i.e. controlling) by (some) relevant compositional characteristics given the differences in –say- the demographic characteristics of household heads in the sample. In addition, assuming that migration decisions are made in the household and also dependent on the typical age at migration and the age of the migratory flows in each community, it may be the case that heads are less or more likely to migrate than their offspring. Future research will consider the issue of migratory decisions across the household inasmuch as it is possible to do so (time-varying covariates re the migration of the children are limited).

REFERENCES

- Allison, P. D. 1996 "Fixed-Effects Partial Likelihood for Repeated Events." *Sociological Methods & Research*, 25 (2): 207-222.
- Axinn, WG. TE. Fricke and A. Thornton. 1991 "The Microdemographic Community Study Approach: Improving Survey Data by Integrating the Ethnographic Method." *Sociological Methods and Research* 20(2): 187-217

¹⁶ The problem so far relates to the fact that the database only provides labor and migration histories of the spouse of the head at the time of the survey, and thus does not include information on partners of previous unions terminated before the year of the survey. We are currently exploring the size of the problem in each country.

- Durand, J., Kandel, W., Parrado, E. A., Massey, D. S. 1996 "International Migration and Development in Mexican Communities." *Demography*, 33 (2): 249-264.
- Fussell, E., Massey, D. S. 2004 "The Limits to Cumulative Causation: International Migration From Mexican Urban Areas." *Demography* 41 (1): 151-171.
- Galor, O., Stark, O. 1990 "Migrants Savings, the Probability of Return Migration and Migrants Performance." *International Economic Review*, 31 (2): 463-467.
- Lindstrom, D. P., Massey, D. S. 1994 "Selective Emigration, Cohort Quality, and Models of Immigrant Assimilation." *Social Science Research* 23 (4): 315-349.
- Massey, D. S. 1988 "Economic-Development and International Migration in Comparative Perspective." *Population and Development Review* 14 (3): 383-413.
- Massey, D. S. "The Ethnosurvey in Theory and Practice." *International Migration Review*, Winter 1987 21 (4): 1498-1522.
- Massey, D. S. 1990 "Social-Structure, Household Strategies, and the Cumulative Causation of Migration." *Population Index* 56 (1): 3-26.
- Massey, D. S., Parrado, E. 1994 "Migradollars - the Remittances and Savings of Mexican Migrants to the Usa." *Population Research and Policy Review* 13 (1): 3-30.
- Massey, D. S., Zenteno, R. 2000 "A Validation of the Ethnosurvey: the Case of Mexico-US Migration." *International Migration Review* 34 (3): 766-793.
- Massey, DM. and M. Sana. 2003 Patterns of U.S. Migration from Mexico, the Caribbean and Central America. *Migraciones Internacionales* 2(2): 5-39.
- Rodriguez, G., Goldman, N. 1995 "An Assessment of Estimation Procedures for Multilevel Models With Binary Responses." *Journal of the Royal Statistical Society Series a-Statistics in Society* 158: 73-89.
- Sana, M. 2003 *International Monetary Transfers: Three Essays on Migrant Decision-Making*. Doctoral Dissertation in Demography . University of Pennsylvania.
- Taylor, J. E., Arango, J., Hugo, G., Kouaouci, A., Massey, D. S., Pellegrino, A. 1996 "International Migration and National Development." *Population Index* 62 (2): 181-212.
- Zeger, S. L., Liang, K. Y. 1985 "Longitudinal Data-Analysis With Generalized Linear-Models." *Biometrics* 41 (2): 582-583.