What's Driving Mexico-U.S. Migration? A Theoretical, Empirical, and Policy Analysis[1]

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Using data gathered in 25 Mexican communities, the authors link individual acts of migration to 41 theoretically defined individual-, household-, community-, and macroeconomic-level predictors. The indicators vary through time to yield a discrete-time event-history analysis. Over the past 25 years, probabilities of first, repeat, and return migration have been linked more to the forces identified by social capital theory and the new economics of migration than to the cost-benefit calculations assumed by the neoclassical model. The authors find that Mexico-U.S. migration stems from three mutually reinforcing processes: social capital formation, human capital formation, and market consolidation.

In this article, we seek to evaluate contemporary theories of international migration using Mexico-U.S. migration as a test case. A committee of the International Union for the Scientific Study of Population recently published two reviews that sought to evaluate theories of migration conceptually (Massey et al. 1993) and empirically (Massey et al. 1994). The theories reviewed by the committee included those advanced by neoclassical economics, the new economics of labor migration, segmented labor market theory, social capital theory, and world systems theory.

Although the committee's review of empirical research in North America found some support for all these theories, it noted the remarkable absence of any attempt to test the different models directly against one another within a common analytic framework. As a result, the committee concluded, it is "unclear . . . how well the various models perform

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against each other, and how much of an *independent* contribution to explanatory power each model might retain in a simultaneous examination of theoretical propositions" (Massey et al. 1994, p. 739; emphasis added).

Our purpose here is to conduct such an empirical test, one in which indicators derived from each theory are allowed to compete against one another directly in predicting the course of migration between Mexico and the United States. We draw upon a unique source of longitudinal data that allows us to link individual acts of migration—documented and undocumented—to a set of predictors defined at the individual, household, community, and macroeconomic levels. All indicators vary independently through time to yield a discrete-time event-history analysis of migration to the United States.

In performing this exercise, we also seek to evaluate the efficacy of recent U.S. policy initiatives designed to curb the flow of undocumented Mexican migrants to the United States. These initiatives generally assume that undocumented migrants make a cost-benefit calculation in deciding whether to migrate internationally. Drawing on neoclassical assumptions, U.S. policymakers have sought to deter illegal migration by raising the costs and lowering the benefits of undocumented movement. In this sense, an evaluation of the efficacy of recent immigration policies constitutes a test of neoclassical theory.

We begin by estimating a model to determine which factors initiate migration between Mexico and the United States and then estimate a model to discern which factors perpetuate this movement once it has begun (thus maintaining the conceptual distinction established elsewhere [Massey et al. 1993]); we conclude with a final model that assesses which factors govern the decision to return to Mexico. We find that variables derived from neoclassical economics are generally limited in their explanatory power. Over the past 25 years, probabilities of first, repeat, and return migration have been linked more to the forces identified by social capital theory and the new economics of migration than to the simple cost-benefit calculations assumed by the neoclassical model.

Our empirical analysis of the forces driving Mexico-U.S. migration suggests that the theoretical foundations of U.S. immigration policy are flawed. The dynamic expansion of migration between Mexico and the United States does not follow from simple changes in the objective costs and benefits of international movement but from the operation of self-perpetuating, interlocking, and mutually reinforcing processes of social capital formation, human capital formation, and market consolidation. Rather than discouraging these forces, the thrust of U.S. policies in recent years has been to amplify and reinforce them.

DATA AND METHODOLOGICAL APPROACH

Our data come from simple random samples gathered during the winter months of 1987–92 in 25 communities located in the Mexican states of Jalisco, Michoacán, Guanajuato, Nayarit, and Zacatecas, which together constitute a region (western Mexico) that historically has sent the majority of migrants to the United States (see North and Houstoun 1976; CONAPO 1986; Jones 1988). Information about the samples is summarized in table 1.

In most cases, the sample consists of 200 households, but, in smaller communities, fewer households were chosen and, in one location, a larger sample was compiled. Sampling frames were constructed by carrying out a house-to-house census of each community. Usually the entire town or city was canvased, but in large urban areas this was not possible and specific working-class neighborhoods were sampled instead. Sampling fractions ranged from .029 to .803 and averaged about .228. Across the communities, our procedures yielded a total sample of 4,853 households representing a hypothetical population of 2.3 million people.

December and January are generally the best times to locate and interview seasonal U.S. migrants within Mexico because most return to spend the Christmas holidays with their families. In the case of one community, however, initial fieldwork revealed that a large number of migrants also returned in July (as reported in Reichert and Massey [1979]), so we sent an interviewer there during the summer to complete the survey. In general, however, the Mexican community samples are representative of dwellings occupied during the winter months of 1987–92.

These data were supplemented with nonrandom samples of out-migrants located in the United States during the summer subsequent to each winter's survey. From the Mexican community samples, we determined where in the United States the migrants went and sent interviewers to those areas to survey people who had settled abroad. Snowball sampling methods (Goodman 1961) were used to compile the sample of settled out-migrants. In most communities, 20 out-migrant households were interviewed, but in some cases smaller numbers were questioned, yielding a total sample size of 415 U.S. households.

Although the U.S. samples are not strictly representative of the settled out-migrant communities, we developed a set of weights to reflect their relative contribution to the binational sample. The weights, which are applied to each case in our analyses, are the inverse of the sampling fraction employed at each Mexican and U.S. site (Sudman 1983). In Mexico, sampling fractions were computed by dividing the number of households in the sample by the number of eligible households on the sampling frame.

TABLE 1

MEXICAN COMMUNITIES SAMPLED

| | | MEXICAN SAMPLE | | U.S. SAMPLE | |
STATE AND TYPE OF COMMUNITY	1990 POPULATION	Sample Size	Sampling Fraction	Sample Size	Sampling Fraction
Guanajuato:					
Metro area	867,920	200	.232*	0	.000
Metro area	362,915	200	.100*	20	.999
City	52,291	200	.256*	20	.121
City	33,123	200	.072	15	.023
City	23,726	200	.113	15	.217
City	20,614	200	.053	20	.047
Town	16,535	200	.073	20	.816
Rancho	1,737	150	.605	20	.999
Rancho	1,080	100	.699	10	.999
Jalisco:					
City	74,068	201	.119*	20	.052
City	30,882	200	.113	20	.038
Town	4,760	200	.250	20	.642
Town	3,516	200	.392	20	.127
Rancho	3,098	200	.375	15	.260
Rancho	894	100	.467	7	.425
Michoacán:					
Metro area	492,901	200	.056*	20	.098
Metro area	217,068	200	.184*	13	.065
City	32,474	200	.029	20	.009
Town	7,025	200	.139	20	.248
Rancho	6,429	200	.143	20	.035
Rancho	2,240	150	.335	20	.999
Nayarit:					
City	19,645	200	.045	20	.012
Rancho	11,541	200	.074	20	.014
Zacatecas:					
Town	7,750	365	.213	20	.017
Rancho	5,785	187	.803	0	.000
Total	2,300,017	4,853	.228	415	.305

* Sample of specific neighborhood rather than entire community.

In the United States, sampling fractions were *estimated* by dividing the number of sample households by the *estimated* number of households in the out-migrant community.

We derived the size of each community's out-migrant population using data on the current location of offspring of the household head who were no longer household members. Our survey gathered information about *all* children of the household head, whether or not they were presently mem-

bers of the sample household. Nonmember children were generally those who had grown up and moved out to form their own households. As relatives of sample members, they constitute a network sample of the binational community (also known as a multiplicity sample; see Somoza 1981; Hill 1981; Kalton and Anderson 1986).

Following the procedure described in Massey and Parrado (1994), we determined the number of nonmember children who were living in the United States and Mexico at the time of the survey and formed the ratio between them to indicate the relative size of the U.S. community. We then applied this ratio to the Mexican sampling frame to estimate the total size of the out-migrant community, allowing us to calculate the U.S. sampling fractions. The latter ranged from .009 to .999 and averaged .305.

The Mexican community samples are intended to represent conditions in the core migrant-sending region at the time of the survey, while the U.S. surveys are designed to depict conditions in the corresponding U.S. settlements at roughly the same time. When pooled and weighted, they offer a comprehensive portrait of 25 binational communities created through recurrent processes of international migration and settlement.

In choosing our Mexican study sites, we sought to include a range of community population sizes, ethnic compositions, and economic bases. Communities were not chosen because they contained U.S. migrants per se, and in fact we obtained a wide range of migration prevalence ratios, ranging from one community where just 9% of adults had been to the United States to another where 60% had migrated (see Massey, Goldring, and Durand 1994). Although our sample is not strictly representative of the states of western Mexico, it contains a broad cross-section of households and communities in Mexico's largest migrant-sending region.

Respondents were interviewed using ethnosurvey methods (Massey et al. 1987). Within each household we gathered basic information about the social, economic, and demographic characteristics of the head, the spouse, the head's children, and other household members. We also determined which members had been to the United States and from them gathered basic data about the first and last U.S. trips: their dates, durations, and destinations, as well as the migrant's legal status, occupation, and wages. From each household head, we collected a detailed life history that included labor, migration, property, marital, and fertility information. For household heads who had been to the United States, we also asked a battery of questions about experiences on the last U.S. trip.

We supplemented these individual- and household-level data with community and macroeconomic information. An inventory completed for each Mexican community gathered basic information on the social, economic, and demographic characteristics of the community at various points in time, drawing on the Mexican census and other published sources. We

also traced the evolution of the town's infrastructure using data gathered from archival sources and from interviews we conducted with community officials. Macroeconomic statistics were compiled from the International Monetary Fund (IMF 1994) and the U.S. and Mexican decennial censuses.

Individual life histories were linked to the community histories and macroeconomic indicators to create the basic data used in this analysis. We selected respondents who were male household heads at the time of the survey and reconstructed their lives from age 15 onward to create an annual record of their personal and household characteristics and of the community and macroeconomic conditions they faced. We then used this event-history file to specify and estimate three statistical models: one predicting the annual odds of taking a first trip to the United States; another predicting the annual odds of taking an additional U.S. trip, given that at least one had already occurred; and a final model predicting the annual odds of returning home to Mexico during the years following entry into the United States.

The first model considers the process whereby international migration is initiated. Given each respondent's individual, household, community, and macroeconomic circumstances in year t, we use multinomial logit regression to predict whether or not the person left for the United States as either a documented or undocumented migrant in year $t + 1$. The second model considers the process whereby U.S. migration is perpetuated. It follows respondents from the moment they return from a trip to the United States and records their characteristics year by year until they make another U.S. visit, legal or illegal. Given individual, household, community, and macroeconomic circumstances in year t, we predict whether or not the respondent took an additional trip in year $t + 1$, controlling for the number of prior trips taken and the amount of U.S. experience accumulated. The third and final model considers the process of return migration. It follows respondents from the moment they enter the United States on any trip and records their characteristics year by year until they return home to Mexico. Given individual, household, community, and macroeconomic circumstances in year t, we predict whether or not the respondent left for home that same year.

THEORIES AND INDICATORS

The foregoing procedures yield a series of discrete-time event-history models with person-years as units of analysis (Allison 1984). The independent variables are time varying and are defined in table 2. In total, we investigate the effect of 41 variables grouped into 11 conceptual categories. These categories refer to the nature of the variables themselves rather than the theories to which they pertain, as different theories put forth

TABLE 2

DEFINITION OF VARIABLES

Variable	Operational Definition
Demographic background:	
Age	Age at last birthday
Married	Respondent in formal or informal union
No. of minors in household	No. of own children under age 18
General human capital:	
Labor force experience	No. of years since first job
Education	No. of years of school completed
Migration-specific human capital:	
Cumulative U.S. experience	Total months spent in United States
No. of prior U.S. trips	Total no. of trips taken to the United States
Unskilled urban job	Unskilled nonagricultural occupation in the United States
Skilled urban job	Skilled nonagricultural occupation in the United States
General social capital:	
Parent a U.S. migrant	Subject's parent was a U.S. migrant
No. of U.S. migrant siblings	No. of siblings with U.S. experience
% U.S. migrants in community	Proportion over age 15 with U.S. experience
Migration-specific social capital:	
Wife a U.S. migrant	Wife has begun migrating to the United States
No. of U.S. migrant children	No. of children who have begun migrating
U.S.-born children	Whether any children were born in the United States
Physical capital:	
Land	Household owns farmland
Home	Household owns home
Business	Household owns a business
Community infrastructure:	
Preparatory school	Preparatory school in municipio
Paved road	Paved road between community and highway
Bank	Bank office open in municipio
Community economic context:	
% earning twice minimum wage	Proportion of workers earning at least twice the legal minimum wage
% self-employed	Proportion of workers who are self-employed
% females in manufacturing	Proportion of female workers employed in manufacturing
Community agrarian context:	
Agrarian economy	"1" if more than 50% of male labor force is employed in agriculture, "0" otherwise
Agrarian population density	Population divided by arable land
Proportion of land that is arable	Cultivable land divided by total land base
Ejido established	"1" if community had *ejido*, "0" otherwise

TABLE 2 (*Continued*)

Variable	Operational Definition
Macroeconomic context:	
Expected wage ratio	Ratio of wages predicted from equations estimated from data on migrants to the United States and migrants within Mexico (United States/Mexico; in 1990 U.S. dollars)
Peso devaluation	Rate of change in dollar value of Mexican peso over prior year
Mexican inflation rate	Rate of change in Mexican consumer index over prior year
U.S. employment growth	Rate of change in total U.S. employment over prior year
Growth in foreign investment	Rate of change in direct foreign investment over prior year
Mexican real interest rate	Average cost of funds in Mexico − Mexican inflation
U.S. policy context:	
Availability of visas	Legal immigration divided by sum of legal immigration and gross illegal entries
Probability of apprehension	Likelihood of arrest while attempting to cross border without documents
Employer sanctions enacted	"1" if employer sanctions in force, "0" otherwise
Amnesty recipients in household	"1" if any member of household received amnesty under IRCA; "0" otherwise
Expected value of U.S. services:	
Welfare	Estimated likelihood of using AFDC or food stamps if respondent were to migrate to United States × average value of monthly AFDC and food stamp payments in states receiving Mexican immigrants
Medical care	Estimated likelihood of receiving unreimbursed medical services if respondent were to migrate to United States × average value of Medicaid payments in states receiving Mexican immigrants
Education	Estimated likelihood of using public schools if respondent were to migrate to the United States × average per pupil school expenditures in states receiving Mexican immigrants

contrasting hypotheses about the same variables so that they cannot be linked to one and only one theory.

Neoclassical Economics

Neoclassical economics argues that prospective migrants make a cost-benefit calculation in deciding whether or not to migrate internationally (Todaro and Maruszko 1987). In the present case, Mexicans are hypothesized to determine the difference between what they can expect to earn in Mexico and what they can expect to earn in the United States. They cumulate this quantity over some future-discounted time horizon to derive an expected benefit from moving to the United States, and, from this expected benefit, they subtract the fixed costs of making the trip. The difference between the expected benefits and the anticipated costs yields the expected net return from international migration, which, if positive, leads a rational Mexican worker to leave for the United States.

According to the neoclassical model, therefore, the leading factor explaining Mexico-U.S. migration is the binational wage gap (i.e., the difference between what people can expect to earn in the United States and what they can expect to earn in Mexico). Accordingly, some indicator of the Mexico-U.S. wage gap has been included in virtually all prior attempts to account for the flow of migrants between the two countries (see Frisbie 1975; Jenkins 1977; Blejer, Johnson, and Prozecanski 1978; White, Bean, and Espenshade 1990; Bean et al. 1990; Espenshade 1990).

Our study is no exception, but, rather than relying on published wage data, we form a ratio between expected wages that we estimate directly from our sample data. The survey asked each household member to report wages earned on first and last trips within Mexico and first and last trips to the United States. We used these data to estimate equations that regressed hourly wages (in constant 1990 U.S. dollars) on selected individual attributes. Because characteristics that influence wages also influence migration, we adopted the method of Heckman (1979) and first estimated a probit equation to predict internal or international migration and then estimated a second OLS regression to predict Mexican and U.S. wage rates while controlling for the hazard of selection into the migrant workforce.

The equations used to estimate Mexican and U.S. wage rates are presented in appendix table A1. In each case, wages are predicted as a function of demographic background, education, labor force experience, U.S. experience, documentation, kinship ties to the United States, and period (expressed in five-year intervals). We use these equations to predict the wages respondents could expect to earn if they were to migrate within Mexico or to the United States within a particular person-year, given their characteristics in that year. The wage ratio defined in table 2 simply di-

vides the predicted U.S. wage by the predicted Mexican wage, each expressed in constant 1990 U.S. dollars.

In addition to influencing the likelihood of migration by determining expected wages, personal characteristics also affect the odds of movement by determining other potential benefits of international migration, such as occupational status, working conditions, and the prospects of job mobility. Although the neoclassical model posits that human capital significantly influences the probability of international migration, the direction of the effect cannot be determined without knowing whether and how different forms of human capital are likely to be rewarded at places of origin and destination (Massey et al. 1993).

In general, human capital acquired in Mexico is not well remunerated in the United States, especially if a migrant lacks documents. No matter what their education or years of labor market experience in Mexico, undocumented migrants are confined to the same menial jobs in the United States: busboy, maid, dishwasher, gardener, factory worker, and agricultural laborer. In fact, because there are few returns to human capital in the secondary labor market of the United States (see Portes and Bach 1985; Portes and Jensen 1989; Zhou and Logan 1989), prior studies have found undocumented migrants from Mexico are *negatively* selected with respect to human capital variables such as education (Massey and García España 1987; Taylor 1986, 1987; Borjas 1992).

We also include several indicators of migration-specific human capital, which, unlike general human capital, is more likely to be rewarded in the U.S. labor market (Chiswick 1978, 1979, 1984, 1988). This form of human capital consists of skills, knowledge, and abilities acquired as a direct result of participation in the U.S. economy. It does not come into play until a person has migrated to the United States at least once, and we measure it with three indicators: months of U.S. experience acquired before the person-year in question, number of prior U.S. trips, and occupational skill. The latter variable is measured with two dummy variables: whether or not the respondent held a skilled urban job on his prior U.S. visit and whether or not he held an unskilled urban job; agricultural jobs served as the reference category.

Table 2 also contains other variables that define the potential costs and benefits of international migration. A devaluation in Mexico tends to increase the costs of movement for undocumented migrants, who need more pesos to pay border-crossing guides (whose fees begin at around $300 and are always denominated in U.S. dollars; see Donato, Durand, and Massey 1992). By raising the cost of surreptitious entry, a devaluation acts to discourage undocumented movement, but it should have no influence on the movement of legal migrants.

The rate of inflation in Mexico also affects the perceived costs and bene-

fits of international movement. During periods of rapid inflation, Mexicans expect the real value of domestic wages to decline. This anticipation of falling real wages in Mexico implies an expectation of rising real returns from U.S. wage labor, thereby increasing the discounted present value of international migration and raising the odds of going to the United States.

Recent policy initiatives in the United States are also connected to the cost-benefit model put forth by neoclassical economics (see Todaro and Maruszko 1987). At the most basic level, Congress has sought to deter migration from Mexico by reducing the number of visas available to its citizens. Prior to 1965, there were no numerical limits to the legal entry of Mexicans, but since then various restrictions have been successively applied. In 1968 Mexico was placed under a hemispheric quota of 120,000 (forcing it to compete with other Latin American and Caribbean countries for visas); in 1976 it was placed under a country quota of 20,000; in 1978 it was included under a global ceiling of 290,000 (forcing it to compete worldwide for visas); and in 1980 the global ceiling was reduced to 270,000 (Jasso and Rosenzweig 1990). These restrictions, moreover, came at a time when the demand for visas from Mexico was rising.

These actions have raised the costs of migration by increasing the size of visa backlogs, multiplying the legal expenses associated with documented entry, and inflating the waiting time for the receipt of papers. We measure the availability of visas by forming the ratio between annual legal Mexican immigration and the sum of legal immigration plus gross illegal entries. Figures on legal Mexican immigration (i.e., the annual number of permanent resident visas granted to Mexicans) were obtained from the Immigration and Naturalization Service (U.S. INS 1994), and figures on gross illegal Mexican entries are those published in Massey and Singer (1995). The index varies from zero to one and reaches a minimum when no legal visas are available to Mexicans and a maximum when all those seeking to enter the United States legally are able to do so.

Congress has also endeavored to increase the costs of migration by granting additional resources to the U.S. Border Patrol for enforcement purposes (Calavita 1992; Bean et al. 1994; Heyman 1995). As enforcement resources have gone up and down over time, so has the probability of apprehension (Espenshade and Acevedo 1995). According to the neoclassical model, raising the odds of getting caught should lower the expected returns to undocumented migration and thus deter Mexicans from deciding to leave for the United States (see Todaro and Maruszko 1987; Espenshade 1994). We used the estimates of the annual probability of apprehension along the southern U.S. border from Massey and Singer (1995).

In 1986, Congress also attempted to reduce the net returns to undocumented migration by imposing sanctions on employers who knowingly hire illegal workers. By lowering the odds of employment for undocu-

mented migrants, Congress hoped to reduce the expected value of U.S. wages and, in doing so, to reduce the expected gain from illegal entry. We thus include a dummy variable to indicate whether employer sanctions were in force during the person-year in question.

During the fall of 1994, voters in California joined Congress in trying to influence the distribution of costs and benefits associated with undocumented migration. Proposition 187 was approved by the electorate in November and sought to bar undocumented migrants from receiving public education, nonemergency medical services, and public assistance in the state of California. The proposition is premised on the assumption that publicly subsidized social services represent a potential benefit for undocumented migrants and, hence, an inducement to illegal entry.

In order to test this assumption, we include in our model the expected value to migrants of three U.S. social services: welfare and food stamps, medical services, and education. For our purposes, the expected value of a social service is the probability of receiving it times the average value of the benefit. During each year of a respondent's life, we estimated the probability of using welfare or food stamps, unreimbursed medical services, and public education while in the United States and then applied these estimated probabilities to average benefit values obtained from published sources.

The survey asked all household heads whether they or any member of their household had used each of the three services as of their last U.S. visit. These data were used to estimate a bivariate probit model that predicted the odds of using the service in question while controlling simultaneously for the probability of being in the United States. Estimated probabilities of service usage were then generated using the probit equations to predict the likelihood of receiving welfare or food stamps, medical services, and education during each year of a respondent's life, given his characteristics in that year and controlling for simultaneous selection into migrant status. The model predicts the odds of service usage from a respondent's age, the number of minors in the household, education, cumulative U.S. experience, documentation, whether the spouse had begun migrating to the United States, the number of children who had begun migrating to the United States, and whether or not the respondent reported children born in the United States.

The probit equations predicting service usage are shown in appendix table A2 (the simultaneously estimated migration selection equations are available on request). In general, the likelihood of using U.S. social services declines at a decelerating rate with age, rises with the number of minors in the household and level of education, and grows with increasing time spent in the United States. It also rises sharply if the spouse and children have begun migrating and if the respondent has children born

in the United States. The odds of using U.S. welfare or food stamps and schools increase with the receipt of documents, but the likelihood of using unreimbursed medical expenses declines with legalization. In general, these patterns confirm the results of field research carried out among Mexican migrants in the United States (Massey et al. 1987; Chavez 1992; Hondagneu-Sotelo 1994; Hagan 1994).

We computed the expected value of welfare and food stamps by multiplying the predicted usage probability times the average monthly value in constant 1990 dollars of Aid to Families with Dependent Children (AFDC) and food stamps in states that receive Mexican immigrants. We obtained annual data on the real value of AFDC and food stamps from Moffitt (1990) and computed a weighted annual average across states, where the weights were the proportion of Mexican immigrants going to each state (U.S. INS 1994).

We estimated the expected value of U.S. medical services by multiplying the probability of receiving unreimbursed medical care times the average monthly value of Medicaid payments in constant 1990 dollars. The latter data were again obtained from Moffitt (1990) and were arrayed by year and averaged across states using the proportion of Mexican immigrants going to each state as weights.

Finally, we estimated the expected value of public education by multiplying the probability of using public schools times the average per pupil expenditure in states receiving Mexican migrants. Per pupil expenditures were obtained by state and year from the U.S. Department of Education (1970–90), adjusted to constant 1990 dollars, and then averaged across states using the proportion of immigrants going to each state as weights.

Social Capital Theory

Social capital refers to potential value that inheres in social relationships between people (Loury 1977; Coleman 1988, 1990). According to Bourdieu and Wacquant (1992, p. 119), "Social capital is the sum of the resources, actual or virtual, that accrue to an individual or a group by virtue of possessing a durable network of more or less institutionalized relationships of mutual acquaintance and recognition." Among people considering a trip to the United States, ties to current or former U.S. migrants represent a valuable social asset since these connections can be used to acquire information and assistance that reduce the costs and risks of entering the United States and raise the odds of getting a good U.S. job (see Browning and Rodríguez 1985; Massey et al. 1987; Massey 1990a, 1990b; Massey et al. 1994; Hondagneu-Sotelo 1994; Hagan 1994).

Although the concept of migrant networks can be accommodated within the cost-benefit model of neoclassical economics, social capital the-

ory yields insights not anticipated under neoclassical theory. According to economists such as Nelson (1959) and Dunlevy and Gemery (1977, 1978), networks act to facilitate the achievement of equilibrium between labor markets by transmitting information about wage opportunities. The analysis is static in the sense that networks do not influence the costs and benefits of migration per se; they serve only as conduits of information.

Social capital theory, in contrast, posits a direct connection between networks and the costs and benefits of migration, and it emphasizes the nonrecursive nature of the relationship between international movement and network formation. Nonmigrants are hypothesized to draw on the social capital embedded in ties to migrants to lower their costs and risks of movement and to raise their benefits of U.S. employment. As a result of these raised benefits and lowered costs and risks, some people decide to migrate, which expands the set of people with ties to the destination area, which, in turn, lowers the costs and risks and raises the benefits for a new set of people, causing some of them to migrate, and so on.

Over time, migration tends to become self-perpetuating because each act of migration creates additional social capital that promotes and sustains more migration, which creates more social capital, which produces more movement. The steady accumulation of social capital through the expansion of networks yields a feedback loop that is particularly powerful in the case of Mexican migration. Elsewhere, this self-feeding process is labeled "the cumulative causation of migration" (Massey 1990a); Reichert (1981) calls it the "migrant syndrome," and Alarcón (1992) refers to the "northernization" of Mexican communities.

We measure access to social capital in four ways. First we include a dummy variable indicating whether either of the respondent's parents had begun migrating to the United States by the person-year in question. Second, we include a count of the number of the respondent's siblings who had begun migrating during the year under observation. Third, we include a measure of social capital available within the community by estimating the proportion of persons 15 years old or older who had been to the United States during each person-year (computed using the procedure of Massey et al. [1994]).

Our last measure of social capital is listed under the policy rubric; that is, whether or not any member of the respondent's household had been legalized under the terms of the Immigration Reform and Control Act (IRCA) of 1986. At the time that Congress passed employer sanctions, it also authorized an amnesty program that ultimately legalized some 2.3 million undocumented Mexicans (U.S. INS 1994). This massive program created a new and potentially important source of social capital for people in Mexico because those receiving the amnesty were better able to sponsor the migration of friends and relatives at home.

The kinds of social capital considered to this point may accrue to any respondent, whether or not he has migrated himself. We also include three indicators of migration-specific social capital—ties to the United States that are typically acquired after someone has begun migrating. Although wives may move independently of husbands (either as single women or as members of parental households), the most common pattern is for them to begin migrating for purposes of family reunification or as part of a strategy of household survival negotiated (not always amicably) with the head and other family members (see Hondagneu-Sotelo 1994; Kanaiaupuni 1995). We thus include an index of whether or not the wife had begun migrating by the person-year under observation. We also include a count of the number of the respondent's children who had begun migrating, and a dummy variable to indicate whether or not any children had been born in the United States.

The New Economics of Migration

The new economics of labor migration was developed by Stark and colleagues to counter the narrow focus of neoclassical economics on labor markets and wages (Stark and Bloom 1985; Stark and Levhari 1982; Stark and Taylor 1989, 1991; Taylor 1986, 1987; Stark 1991). In contrast to the neoclassical model, which assumes that all markets are complete and well functioning and that migrants move to take advantage of a temporary disequilibrium in geographically distinct labor markets, the new economics of migration assumes that key markets besides the labor market—futures, capital, and insurance—are imperfect, inaccessible, or nonexistent. Given these sorts of market failures, which are common in developing countries such as Mexico, people migrate not only to reap a higher stream of lifetime earnings but also to manage risk and gain access to capital that will enable them to finance consumer purchases and production activities. According to the new economics, in other words, the relevant economic variables in explaining migration are not wages but measures of risk and the need for and access to capital.

Controlling for fluctuations in the expected wage ratio, the principal risks to Mexican family income over the past decades have come in the form of price inflation and currency devaluation. The level of inflation is indicated by the rate of annual change in Mexican consumer prices, and the degree to which the Mexican peso is undergoing devaluation is measured by the annual rate of change in its rate of exchange with the U.S. dollar, both obtained from the IMF (1994). The overall accessibility of capital is indicated by the real interest rate, here defined as the difference between the average cost of funds reported to the IMF (1994) and the Mexican inflation rate.

The demand for capital is difficult to assess but is related to a variety of indicators included in our statistical model. Considerable work suggests that the acquisition of housing, the purchase of land, and the establishment of small businesses constitute primary motivations for international labor migration (see the reviews by Taylor et al. [1996a, 1996b]). If people migrate to finance these ends, then those who already own a home, land, or a business should have less need of capital and, hence, lower odds of migration. Thus we include dummy variables for these three categories of property ownership among our predictors.

The demand for capital is also likely to be influenced by community economic conditions. People who come from places with dynamic, entrepreneurial economies characterized by high wage rates, high levels of self-employment, and well-developed manufacturing are more likely to demand capital than people who come from economically stagnant areas. Likewise, people from communities with well-developed schools, roads, and banking institutions offer better opportunities for investment than places without such infrastructure.

Other things equal, we also expect agrarian economies to offer fewer opportunities for household enterprise than industrial or service economies, so we have included a dummy variable indicating whether or not the community economy was predominantly agricultural during the person-year in question (whether more than 50% of the community's labor force worked in agriculture). We also include indicators of demographic pressure on the land as well as land quality, hypothesizing that areas characterized by low rural densities and high-quality farmland offer more opportunities for agricultural investment.

Finally, in agrarian communities where an *ejido* was established, we hypothesize that farmers have a greater incentive to migrate because they have access to land but not the capital necessary to make it productive (see Massey et al. 1987). *Ejidos* were created by Mexico's postrevolutionary governments as part of an agrarian reform program. Parcels of land were allocated to specific families for their perpetual use but were held in common by members of the community. Until recently, *ejido* lands could be inherited but not rented, sold, or used as collateral on loans. The formation of *ejidos* thus created a demand for capital by giving poor campesinos access to land but not the credit required to engage in production (see Massey et al. 1987; Taylor 1992).

Segmented Labor Market Theory

Segmented labor market theorists such as Piore (1979) argue that immigration is inherent to the structure of postindustrial economic life. According to this view, Mexico-U.S. migration is not caused by disparities

in wage rates, the effects of social capital, or failures in Mexican capital and insurance markets but is caused by a built-in demand for immigrant labor that is intrinsic to advanced industrial societies (see Massey et al. 1993). We assess the role of U.S. labor demand in generating migration from Mexico by including the annual rate of growth in U.S. employment as a predictor in the model. A better indicator would have been the growth rate of jobs in those sectors of the economy where Mexican immigrants are concentrated, but such data are not available by year. In general, we expect a surge in the rate of U.S. job creation to yield a higher effective demand for immigrant workers, boosting the odds that a Mexican worker will leave for the United States (holding constant expected wages).

World Systems Theory

Building on the work of Wallerstein (1974), world systems theorists link the origins of international migration to the expansion of the global market economy (Portes and Walton 1981; Petras 1981; Castells 1989; Sassen 1988, 1991; Morawska 1990). They argue that the penetration of capitalist relations into peripheral societies such as Mexico creates a mobile population that is prone to migrate. World systems theory sees capitalist development as inherently disruptive, bringing about social and economic transformations that displace people from traditional livelihoods and force them onto transnational labor markets. We indicate capitalist penetration of Mexico by the rate of growth in direct foreign investment (see Sassen 1988). In his study of out-migration from 18 Caribbean nations, Ricketts (1987) found that growth in direct foreign investment strongly predicted annual emigration to the United States.

Like the new economics of migration, world systems theory is linked to community-level indicators as well. Both models see emigration as originating in communities that are in the throes of economic development rather than in backward, stagnant areas disconnected from national and international markets. Thus we expect the probability of U.S. migration to be greater in communities where wage rates, levels of self-employment, and the proportion of women employed in manufacturing are higher, and where an infrastructure of roads, schools, and banks has been established. At the community level, the new economics of migration and world systems theory converge in their predictions.

THE INITIATION OF MIGRATION

As explained above, our analysis of how international migration is initiated follows respondents year by year from age 15 to the date of their first U.S. trip, age 65, or the survey date, whichever comes first. Person-years

lived before 1965 and after the first trip are excluded from the analysis, yielding a total of 55,762 person-years lived by 3,697 respondents. During each year the respondent did not migrate, the outcome variable was coded as "0," and during the year when the first trip occurred it was coded as "1" if the trip was made without documents and "2" if it was legal.

A multinomial logit model was used to regress this trichotomy on the set of independent variables described above, designating nonmigration as the reference outcome. We began the analysis in 1965 in order to minimize recall error among respondents and because that year represents a watershed in U.S. immigration history: not only did the U.S. Congress pass landmark amendments to the Immigration and Nationality Act that placed new restrictions on the entry of Mexicans and expanded legal immigration from Asia (Reimers 1985; Massey 1995); it also ended the Bracero Program, which over 22 years had imported some 4.5 million Mexicans as temporary agricultural workers (Calavita 1992).

Means and standard deviations were computed across person-years leading up to the first trip and are shown in the left-hand columns of table 3. During the years under study, the average respondent was 32 years old with 17 years of labor market experience; he was married (66% were in a union) with 2.2 children and 5.5 years of schooling. Even though none of the respondents had ever been to the United States, many had access to social capital connecting them to that country: 18% had a migrant parent; about a third had migrant siblings (the average number was .35); and the typical person lived in a community where 12% of all adults had been north of the border. The large majority of respondents were landless (only 6% reported owning farmland), but 29% possessed homes, and 14% reported owning a business.

Only 39% of the respondents lived in a community with a preparatory school, but over 90% lived in places served by a bank and a paved highway. In the typical community, about 21% of local workers earned twice the minimum wage, 34% were self-employed, and 19% of female workers were employed in manufacturing. A majority (62%) of the communities were agrarian and the average density was 8.5 persons per cultivable hectare. An average of around 68% of the local land base was arable, and 98% of the communities had established an *ejido*.

The macroeconomic indicators reveal Mexico's weak position relative to the United States. In the average person-year, expected wages in the United States were about 14 times those in Mexico, Mexican inflation ran at 26%, the peso had lost 34% of its value, and real interest rates hovered around 4%. On the U.S. side, the average rate of employment growth was 2% and direct foreign investment in Mexico had increased by 25% over the prior year. Most of these indicators display substantial variation across

time, yielding high standard deviations that suggest considerable economic instability.

The restrictive nature of U.S. immigration policy toward Mexico is indicated by several policy variables. In the average person-year, the supply of legal visas was sufficient to cover only 9% of Mexico's potential demand, thereby guaranteeing that a large share of the flow would be illegal. The average probability of apprehension at the border was .35 and employer sanctions had been implemented in 9% of the person-years under study. In a very few sample households (0.3%), someone had received amnesty under IRCA.

The bottom rows of the table suggest the potential value of social service benefits for Mexicans anticipating a first trip to the United States. In general, these values are not very large. The expected value of welfare plus food stamps is only $21 per month, and the expected value of Medicaid is just $4 per month; the value of public education is around $131 per year. Recall that, in each case, the expected value is the probability of usage times the average benefit payment reported in major immigrant-receiving states.

Table 4 presents the results of a multinomial logit analysis of first trips to the United States. The left-hand columns show how different variables influence the odds of taking a first U.S. trip without documents, and the right-hand columns show effects on the odds of taking a first trip with documents. The vast majority of first trips (95%) were illegal, meaning that the respondent either crossed the border without inspection or entered with a tourist visa and then worked.

In general, the odds of taking a first illegal trip fall with marriage and age. As we hypothesized, moreover, the odds of undocumented migration tend to be reduced by having more education, reconfirming the pattern of negative selectivity found earlier (Massey and García España 1987; Taylor 1986, 1987; Borjas 1992). The effect of education, however, is weak $(P > .08)$.

Access to social capital, in contrast, substantially and significantly increases the odds of taking a first undocumented trip. People with ties to migrant family members and who live in communities where U.S. migration is prevalent are far more likely to migrate illegally than people without access to these social resources. In particular, having migrant parents and a large number of migrant siblings are both highly significant in raising the odds of undocumented migration, and living in a place where a relatively large number of community members have been to the United States is especially powerful in promoting undocumented movement. Thus, the evidence suggests that social capital plays a crucial role in initiating undocumented migration between Mexico and the United States.

TABLE 3

MEANS AND STANDARD DEVIATIONS OF VARIABLES

	PERSON-YEARS UP TO FIRST U.S. TRIP		PERSON-YEARS UP TO ADDITIONAL U.S. TRIP		PERSON-YEARS UP TO RETURN FROM U.S. TRIP	
	Mean	SD	Mean	SD	Mean	SD
Demographic background:						
Age	31.97	12.87	38.66	12.23	33.52	10.69
Married	.66	.47	.86	.35	.76	.43
No. of minors in household	2.21	2.56	3.21	2.67	2.42	.27
General human capital:						
Labor force experience	16.59	13.40	24.12	12.67	18.55	11.19
Education	5.55	4.73	4.02	3.89	5.70	3.87
Migration-specific human capital:						
Cumulative U.S. experience			42.95	58.80	50.49	64.42
Months on current trip					62.79	80.74
No. of prior U.S. trips			3.96	4.77	3.55	5.18
Unskilled urban job			.19	.39	.45	.50
Skilled urban job			.22	.41	.30	.46
General social capital:						
Parent a U.S. migrant	.18	.38	.30	.46	.48	.50
No. of U.S. migrant siblings	.35	.83	1.37	1.64	2.05	1.87
% U.S. migrants in community	.12	.05	.15	.06	.16	.05
Migration-specific social capital:						
Wife a U.S. migrant			.16	.37	.56	.50
No. of U.S. migrant children			.50	1.35	.72	1.71
U.S.-born children			.08	.28	.41	.49
Physical capital:						
Land	.06	.24	.14	.35	.09	.29
Home	.29	.46	.43	.49	.31	.46
Business	.14	.35	.18	.39	.18	.38

Community infrastructure:						
Preparatory school	.39	.49	.31	.46	.35	.48
Paved road	.93	.26	.94	.23	.97	.17
Bank	.91	.28	.93	.26	.96	.18
Community economic context:						
% earning twice minimum wage	.21	.11	.22	.11	.24	.10
% self-employed	.34	.12	.35	.11	.34	.10
% females in manufacturing	.19	.11	.18	.11	.16	.09
Community agrarian context:						
Agrarian economy	.62	.49	.62	.48	.60	.49
Agrarian population density	8.45	77.19	4.56	50.36	3.02	27.07
Proportion of land that is arable	.68	.30	.61	.29	.57	.30
Ejido established	.98	.12	.97	.18	.97	.17
Macroeconomic context:						
Expected wage ratio	13.91	30.57	20.55	58.85	22.93	89.18
Peso devaluation	.34	.65	.44	.70	.45	.71
Mexican inflation rate	.26	.24	.32	.26	.33	.26
U.S. employment growth	.02	.01	.02	.01	.02	.01
Growth in foreign investment	.25	.65	.29	.76	.34	.04
Mexican real interest rate	.04	.09	.03	.10	.03	.10
U.S. policy context:						
Availability of visas	.09	.08	.07	.08	.06	.06
Probability of apprehension	.35	.06	.34	.06	.34	.06
Employer sanctions enacted	.09	.29	.15	.36	.17	.37
Amnesty recipients in household	.003	.05	.04	.19	.08	.26
Expected value of U.S. services:						
Welfare	20.69	20.93	26.38	37.81	78.76	61.12
Medical care	3.56	4.27	4.05	5.88	12.04	9.85
Education	131.12	135.33	383.82	697.03	1,189.80	1,289.80
Total no. of person-years	55,762		27,813		13,150	

TABLE 4

MULTINOMIAL LOGISTIC REGRESSION OF SELECTED VARIABLES ON THE ODDS OF
TAKING A FIRST TRIP TO THE UNITED STATES IN YEAR $t + 1$

| | WITHOUT DOCUMENTS | | WITH DOCUMENTS | |
SITUATION OF SUBJECT IN YEAR t	B	SE	B	SE
Demographic background:				
Age	−.004	.031	−.055	.119
Age^2	−.001*	.0004	.001	.001
Married	−.341*	.078	−.432	.444
No. of minors in household	.011	.020	−.005	.118
General human capital:				
Labor force experience	.013	.010	−.057	.040
Education	−.014	.008	−.002	.039
General social capital:				
Parent a U.S. migrant	.461*	.060	.720*	.263
No. of U.S. migrant siblings	.388*	.021	.676*	.073
% of U.S. migrants in community	5.016*	.817	−7.254	4.496
Physical capital:				
Land	.298*	.127	.759	.666
Home	−.446*	.093	−1.368	.759
Business	−.245*	.102	.400	.457
Community infrastructure:				
Preparatory school	−.249*	.075	−.061	.385
Paved road	−.107	.125	−.256	.527
Bank	.527*	.143	−.148	.549
Community economic context:				
% earning twice minimum wage	2.209*	.596	−7.730*	3.241
% self-employed	−.024	.412	−13.204*	2.490
% females in manufacturing	1.214*	.370	−6.337*	2.170
Community agrarian context:				
Agrarian economy	.480*	.078	2.034*	.765
Agrarian population density	−.001*	.0005	−.268	.155
Proportion of land that is arable	−.322*	.119	.214	.573
Ejido established	.321*	.221	−2.880*	.892
Macroeconomic context:				
Expected wage ratio	.003*	.001	−.005	.008
Peso devaluation	−.115	.067	−.028	.376
Mexican inflation rate	−.702*	.298	2.744	1.472
U.S. employment growth	4.734*	1.938	11.637	10.220
Growth in foreign investment	−.228*	.067	.108	.351
Mexican real interest rate	2.264*	.531	−.842	2.490
U.S. policy context:				
Availability of visas	−2.828*	.511	−.568	1.965
Probability of apprehension	2.891*	.783	3.119	3.302
Employer sanctions enacted	.304*	.149	.135	.836
Amnesty recipients in household	2.561*	.353	4.656*	.874
Expected value of U.S. services:				
Welfare	−.019*	.006	.026	.017
Medical care	.019	.024	−.020	.066
Education	.002*	.0002	−.003	.015
Constant	−5.172*	.785	1.239	3.152
Log likelihood	6,648.100*			
χ^2	2,181.600*			
No. of person-years	55,762			

NOTE.—Event-history data gathered among male household heads from 25 Mexican communities.
* $P < .05$.

The effects of physical capital generally are not consistent with expectations derived from neoclassical economics. Assets such as land, homes, and businesses theoretically provide a means of financing a trip to the United States, and according to the neoclassical model should yield a higher likelihood of migration, other things equal. Given two men with the same expected gain from working in the United States, the one with more capital assets should have a higher likelihood of going because he is in a better position to finance the trip and absorb the costs of moving and looking for work.

As table 4 reveals, however, the possession of homes and businesses tends to lower the odds of international movement, a pattern more consistent with the new economics of migration, which argues that people do not move to earn higher net incomes, but to secure capital to finance specific purchases. People who already own homes and businesses have less need of capital and therefore display lower likelihoods of undocumented out-migration. Only the possession of land seems to act in accordance with neoclassical theory by exhibiting a positive effect on the odds of undocumented movement. Land ownership, however, could also indicate a need for capital to engage in agricultural production, an interpretation that is consistent with the new economics of migration.

The decision to migrate without documents is apparently conditioned by two aspects of community infrastructure. Since the economic returns to education historically have been quite large within Mexico, a preparatory school provides an alternative mobility ladder that constitutes a realistic option to out-migration, lowering the odds of undocumented movement. The presence of a bank, in contrast, raises the odds of illegal migration by providing a convenient and secure place to accumulate, invest, and exchange dollars earned abroad. In our fieldwork, we found that banks in migrant-sending communities, especially those in rural areas, are generally awash with dollars deposited by returning migrants: one town of 3,500 people received $1.4 million in remittances and savings during 1988 (Massey and Parrado 1994).

The effects of community economic indicators on the likelihood of illegal out-migration are also more consistent with expectations derived from the new economics of migration and world systems theory than with those derived from neoclassical economics. Living in a community with high levels of industrial development and wages does not reduce the likelihood of undocumented migration to the United States; on the contrary, high levels of development and wages *raise* it. The larger the proportion of workers earning twice the minimum wage and the higher the proportion of females working in manufacturing, the greater the odds of undocumented out-migration. Rather than offering employment alternatives to forestall out-migration, economic growth and development appear to create conditions that increase the need for foreign wage labor.

As expected, agrarian economies are generally more likely to send migrants to the United States than industrial/service economies. But within agrarian communities, the odds of undocumented migration are lowered by a higher quality land base: the higher the fraction of land that is cultivable, the lower the probability of out-migration. The odds of out-migration are increased by the presence of an *ejido,* however, and by lower agricultural densities. As explained earlier, *ejidos* create a need for capital by providing farm families with access to land but not the capital needed to begin or expand agricultural production. A low ratio of population to cultivable land, moreover, indicates an agricultural economy with room for expansion and, hence, a greater demand for capital to finance land acquisition and production.

In keeping with the fundamental hypothesis of neoclassical economics, the likelihood of undocumented migration is positively related to the U.S.-Mexico wage ratio: the higher the real value of expected wages in the United States relative to Mexico, the greater the odds of international out-migration. Contrary to the beliefs of most U.S. citizens and politicians, however, the wage ratio is not the leading predictor of Mexico-U.S. migration. The coefficient is rather small and does not compare favorably to other effects estimated in the model (a conclusion we document below).

Also contrary to what many in the United States believe, high rates of price inflation and peso devaluation in Mexico tend to reduce, not increase, the likelihood of taking an initial undocumented trip to the United States (although the effect of devaluation is only significant at the .09 level). By increasing the costs of entry for those possessing pesos, inflation and devaluation lower the odds that people without prior migration experience will attempt to enter the United States without documents because surreptitious border crossing requires paying a sizable fee in dollars to a smuggler, or "coyote."

Macroeconomic indicators also provide some support for a key prediction of segmented labor market theory—that undocumented migration is fomented by U.S. labor demand. As table 4 indicates, an increase in the rate of U.S. employment growth tends to be followed by an increase in the likelihood of illegal migration, suggesting that Mexicans do, in fact, respond to labor market opportunities when they decide to begin migrating to the United States.

The main prediction of the new economics of labor migration also receives strong support from macroeconomic indicators. According to the new economics, the higher the real interest rate at any point in time, the less access people have to credit and capital and the more they select labor migration as a means of acquiring the funds they need to finance consumer purchases and productive activities. The coefficient associated with the real interest rate is positive and highly significant, indicating that the ris-

ing real cost of capital sharply increases the odds of undocumented movement.

Only one theoretical model does not receive much direct support from the macroeconomic indicators: world systems theory. Its leading hypothesis is that out-migration stems from capital penetration, but our results indicate that the rate of growth in direct foreign investment does not increase the odds of undocumented migration, rather, it reduces it. If we could have measured capital penetration at the community level, results might have been different, but at the national level, at least, direct foreign investment appears to lower the likelihood of international movement, possibly by creating jobs that provide domestic alternatives to emigration.

Finally, we consider whether recent U.S. policy initiatives have influenced the likelihood of undocumented movement. The strong negative effect of visa availability suggests that, to a significant degree, the secular increase in undocumented migration from Mexico reflects U.S. actions to restrict the supply of visas during a period when demand was rising. The coefficient clearly shows that a larger supply of visas reduces the odds of undocumented movement and directs a larger share of the migratory flow into legal channels.

At the same time, recent policies intended to deter undocumented migration appear to have failed; indeed, they may have backfired. According to our estimates, the imposition of employer sanctions and the concentration of enforcement resources along the border *increased* the odds of taking a first illegal trip to the United States. Prospective migrants appear to interpret a crackdown as evidence of even more stringent policies to follow and seek to gain entry while they still can. Likewise, employer sanctions may encourage migrants already in the United States to hang onto jobs they have for fear of not getting others later on, thereby creating greater pressure for the migration of undocumented family members.

Recent policy initiatives have backfired in another way. When Congress implemented employer sanctions at the end of 1986, it also enacted a large-scale amnesty program, and the subsequent legalization of millions of former undocumented migrants appears to have encouraged additional illegal migration by relatives who remained at home. As table 4 indicates, being from a household where someone legalized under IRCA greatly increases the odds of taking a first illegal trip to the United States.

Finally, coefficients shown in the bottom rows of the table do not provide much encouragement for the backers of California's Proposition 187, who are attempting to discourage migration by withholding state-funded social welfare programs from undocumented residents. If the assumptions underlying this referendum are correct, then we would expect to observe a positive relationship between service benefits and the odds of undocumented migration. The effect of welfare benefits, however, is negative,

and the effect of medical benefits is statistically insignificant. The only effect consistent with the assumptions underlying Proposition 187 is the expected value of U.S. schools, but its effect is rather weak. Given one insignificant and two significant but offsetting effects, the implementation of California's Proposition 187 can be expected to have little overall influence on the arrival of new undocumented migrants.

The right-hand columns of table 4 analyze *legal* first migration. Taking a first trip as a documented migrant is quite unusual and is accomplished in one of two ways: having skills or abilities in high demand in the United States or being related to someone who already has legal papers. Since nearly all the migrants in our sample lack the skills or education to qualify them for the first route, the most frequent means of legal entry is the latter. In fact, the typical first-time legal migrant is the son of a father who legalized earlier.

Relatively few variables are significant in predicting first trips with documents, owing to the small number of people in this category (just 5%). The significant effects generally fall into three categories. First, documented out-migration is strongly influenced by social capital. Consistent with the means by which most Mexicans obtain documents, the odds of taking a first trip with documents are markedly higher for those who have parents or siblings who are U.S. migrants or who come from a household where someone received amnesty. Second, in contrast to the case of undocumented migration, community economic circumstances are *negatively* related to the odds of documented movement. A high wage rate, a high rate of self-employment, and a high proportion of women in manufacturing all lower the odds of legal migration. Finally, the likelihood of documented migration is increased by coming from an agrarian community, although it is decreased if that community also has an *ejido*.

These findings suggest that documented migration occurs on a first trip mainly when household heads sponsor the legal immigration of their sons (and to a lesser extent their brothers) and that such sponsorship is especially likely in rural communities but not in those with an *ejido* or with a strong local economy. Given access to communal farmland and a strong economy, household heads appear less amenable to soliciting documents for their sons and brothers, possibly because they see a brighter future for them in Mexico.

Results to this point suggest that all the theories of international migration are technically "correct" in the narrow sense that many of their hypotheses are consistent with the data. In accordance with neoclassical model, the likelihood of illegal migration is positively related to the U.S.-Mexico wage differential. Being related to a migrant sharply boosts the odds of taking a first U.S. trip, which is consistent with social capital theory. In keeping with the new economics of migration, high real interest

rates increase the probability of undocumented movement. Following segmented labor market theory, undocumented migration is linked to the growth of U.S. employment. And, consistent with world systems theory (as well as the new economics of migration), the odds of undocumented migration are greatest in dynamic, developing communities, not stagnant areas with low wages and marginal levels of industrialization.

More interesting than the technical correctness of each theory, however, is the issue of which one is most powerful in explaining undocumented migration to the United States. The relative strength of the effects is difficult to judge from logit coefficients alone, as each variable has a different scale of measurement. We therefore used the logit model of table 4 to generate predicted probabilities of first undocumented migration, which are presented in the two left-hand columns of table 5. Owing to the small number of legal migrants, we do not generate predicted probabilities for them.

In generating these figures, we hold age and labor force experience constant at 18 and 3 years, respectively, to consider the situation of a young man coming of age in the communities under study. In each line of the table, we generate predicted probabilities under two assumptions: one when the variable in question is at its fifth percentile, representing an effective minimum, and the other when the variable takes its ninety-fifth percentile, representing an effective maximum. We assume mean values for all other variables. Each line in the table therefore shows the range of probabilities that result when the variable in question goes from its fifth percentile (minimum) to its ninety-fifth percentile (maximum) while holding all other variables constant at their means. Ranges that are more than 50% of the mean probability are marked with an asterisk to indicate unusually strong effects.

The average yearly probability of taking a first undocumented trip is .04, meaning that in any given year the average 18-year-old man in our sample has a 4% chance of taking a first trip to the United States without documents. If 1,000 young men were to go through life subject to this risk of migration, 388 would migrate by age 30. This probability, however, shifts up and down in response to several important variables.

The most powerful effects are generally observed in response to variation in the quantity of social capital at a man's disposal. Having parents with prior U.S. experience boosts the probability of undocumented migration from .037 to .057, and varying the number of U.S. migrant siblings from the fifth percentile (zero migrant siblings) to the ninety-fifth percentile (two migrant siblings) more than doubles the probability of first undocumented movement from .035 to .073. Likewise, coming from a community where just 3% of the adults have been to the United States (the fifth percentile) yields a predicted migration probability of .027, but com-

TABLE 5

Efffct of Independent Variables on Undocumented Migration

Independent Variable	Probability of First Migration		Probability of Repeat Migration		Probability of Return to Mexico during First Year of Migration	
	Minimum	Maximum	Minimum	Maximum	Minimum	Maximum
Demographic background:						
Married	.050	.036	.477	.425	.280	.328
No. of minors in household	.039	.043	.378	.517	.317	.300
General human capital:						
Education	.043	.036	.465	.377	.379	.249
Migration-specific human capital:						
Cumulative U.S. experience			.321*	.746*	.524*	.035*
No. of prior U.S. trips			.312*	.841*	.181*	.880*
Unskilled urban job			.414	.514	.361	.236
Skilled urban job			.428	.450	.335	.267
General social capital:						
Parent a U.S. migrant	.037*	.057*	.416	.471	.299	.329
No. of U.S. migrant siblings	.035*	.073*	.431	.438	.326	.285
% U.S. migrants in community	.027*	.062*	.366	.538	.299	.331
Migration-specific social capital:						
Wife a U.S. migrant			.381*	.702*	.345	.268
No. of U.S. migrant children			.423	.498	.348*	.143*
U.S.-born children			.410	.548	.310	.321
Physical capital:						
Land	.039	.052	.437	.405	.298*	.519*
Home	.045	.030	.468	.388	.302	.355
Business	.041	.032	.460	.316	.316	.276

Community infrastructure:						
Preparatory school	.044	.035	.421	.459	.298	.335
Paved road	.044	.040	.474	.430	.325	.312
Bank	.025	.042	.450	.431	.234	.316
Community economic context:						
% earning twice minimum wage	.028*	.058*	.408	.456	.426*	.235*
% self-employed	.040	.040	.427	.441	.257*	.424*
% females in manufacturing	.036*	.060*	.438	.412	.359*	.144*
Community agrarian context:						
Agrarian economy	.028*	.049*	.402	.451	.340	.297
Agrarian population density	.040	.039	.434	.432	.312	.313
Proportion of land that is arable	.047	.036	.445	.422	.304	.321
Ejido established	.029	.040	.430	.433	.384	.311
Macroeconomic context:						
Expected wage ratio	.039	.044	.429	.443	.313	.311
Peso devaluation	.042	.035	.435	.420	.315	.300
Mexican inflation rate	.047	.029	.495	.325	.250*	.425*
U.S. employment growth	.035	.044	.401	.454	.294	.327
Growth in foreign investment	.049	.032	.475	.389	.342	.281
Mexican real interest rate	.028*	.056*	.368	.493	.261	.368
U.S. policy context:						
Availability of visas	.048*	.022*	.472	.280	.330	.252
Probability of apprehension	.030	.049	.480	.390	.314	.311
Employer sanctions enacted	.039	.052	.446	.359	.308	.359
Amnesty recipients in household	.040*	.350*	.416*	.806*	.311	.331
Expected value of U.S. services:						
Welfare	.055*	.020*	.753*	.022*	.405	.190
Medical care	.037	.045	.271*	.786*	.341	.266
Education	.032	.051	.460	.353	.341	.253
Mean	.040		.433		.312	

NOTE.—Probability of first migration at age 18, probability of repeat migration at age 25, and probability that a 25-year-old will return to Mexico during the first year of migration.

* Ranges greater than 50% of mean probability.

ing from one where 21% have been north of the border (the ninety-fifth percentile) increases it to .062. Finally, being in a household where someone received amnesty under IRCA raises the yearly probability of undocumented migration from .040 all the way to .350.

As social capital accumulates in various forms, therefore, the odds of undocumented migration become rather high. For someone with a migrant parent, with two migrant brothers, and living in a community where 21% of adults have been to the United States, the probability of taking an undocumented trip at age 18 is .16 (other factors held constant at their means); and, if someone in that young man's household were to receive amnesty under IRCA, his likelihood of undocumented migration would go up to .71.

A second set of effects stand out in the table: those pertaining to economic conditions in the community. As the proportion earning twice the minimum wage moves from the fifth percentile (5%) to the ninety-fifth percentile (39%), the probability of undocumented migration grows from .028 to .058, and, as the share of females in manufacturing moves from its effective minimum (10%) to its effective maximum (55%), the likelihood goes from .036 to .060. Holding constant these economic conditions, men from communities whose economies are predominantly agrarian have a higher probability of illegal out-migration (.049) compared with men who come from communities with industrial/service economies (.028).

In general, therefore, the highest probabilities of out-migration are observed in rural communities undergoing rapid economic growth and development. In an agrarian community where 51% of workers are employed in agriculture but where 39% earn twice the minimum wage and the proportion of women working in manufacturing is 55%, the probability of illegal out-migration is .11. The economic transformation of the countryside creates rather than prevents international migrants.

Several communities in our sample fit this description. One community, for example, is a small agrarian town in the highlands of Jalisco with good highway access to the metropolitan areas of Guadalajara and León. In this small community of just over 3,000 people, local entrepreneurs have established several factories to produce cheese and Christmas ornaments, with the latter employing an exclusively female workforce (Arias and Durand 1988). Wages are kept high through competition with the booming industrial city of San Francisco del Rincón, which is within daily commuting distance (Arias 1992).

The third powerful factor predicting undocumented migration to the United States is access to capital and credit in Mexico, as indicated by the real interest rate. At the fifth percentile, the real interest rate is −13%,

indicating that money can be paid back cheaply in inflated pesos worth less than those originally borrowed. Under these circumstances, the cost of capital is low, yielding a relatively low predicted probability of undocumented migration, just .028. At the ninety-fifth percentile; however, the real interest rate is 19%, indicating a high real cost to borrowing that yields a high predicted probability of .056.

In addition to the presence of an amnesty recipient in the household, two other policy-related variables have relatively strong effects on the likelihood of undocumented migration. According to table 5, the relative availability of U.S. visas effectively channels Mexican migrants in and out of documented status. As the index of visa availability moves from its fifth to its ninety-fifth percentile and the supply of entry visas shifts from 2% to 30% of potential demand, the annual probability of undocumented migration drops from .048 to .022.

In addition, as the expected value of U.S. welfare increases from $3 to $59, a range that reflects variation in the odds of usage rather than shifts in the value of payments (AFDC and food stamps have declined in real terms since the early 1970s), the probability of migration drops from .055 to .022. Contrary to the assumptions of those supporting Proposition 187, therefore, Mexicans who stand to reap the highest gains from the U.S. welfare system are the least likely to migrate illegally. The same factors that make them more likely to use U.S. welfare (in particular, rising education) simultaneously function to keep them in Mexico.

In summary, the forces initiating undocumented migration between Mexico and the United States are not those that most policymakers and citizens think of when they consider the issue. Illegal migration does not appear to be driven much by the lure of high wages or generous welfare benefits north of the border, by the forces of inflation and devaluation in Mexico, or by poverty and a lack of development in sending communities. While these factors play a role in promoting international migration, they are not among the most powerful determinants, and, in the case of economic development, the effect is opposite that popularly believed (in keeping with Massey [1988]).

Our analysis suggests that migration is initiated when rural Mexican communities undergo dynamic development and industrialization, which raises wages and draws women into manufacturing. These transformations usher in a period of uncertainty and change in local economic life that creates a need for capital and risk management on the part of ordinary households, which, given the high real interest rates and market failures that prevail in Mexico, is satisfied through international migration. Transnational movement is enabled and facilitated by social connections to people who have already made the trek northward. Whether the migra-

tion is observed as legal or illegal depends largely on the supply of visas made available by the United States and by the number and range of kinship ties that Mexicans have to legal resident aliens and U.S. citizens.

THE CONTINUATION OF MIGRATION

In theory, the same factors responsible for initiating international migration could also explain its perpetuation over time, but, once someone has crossed the border and lived and worked in the United States, new and potentially more powerful forms of human and social capital come into play. In addition to personal traits and social ties that anyone in Mexico might possess, the process of migration itself creates new and more specific forms of human and social capital accessible only to those who have made the journey northward.

The middle column of table 3 suggests the advantages enjoyed by experienced migrants compared to those who have not yet made a trip northward. It shows means and standard deviations computed across person-years spent in Mexico before the next U.S. trip. During the average person-year, respondents contemplating an additional U.S. trip had some 43 months of experience in the United States accumulated over the course of four prior trips. Some 19% had attained a skilled U.S. job by the time of their last visit, and another 22% held an unskilled job (with 59% remaining in agriculture).

In addition to this migration-specific human capital, migrants also reported considerable migration-specific social capital. On average, 16% of the respondents had spouses who had begun to migrate, 8% stated that a child had been born in the United States and that other children (on average, 0.5) had begun migrating to the United States. Experienced migrants also had access to a larger quantity of general social capital than nonmigrants: 30% reported having a migrant parent and the average number of migrant siblings was 1.37 (compared to figures of just 18% and 0.35 for nonmigrants contemplating their first trip).

As a result of this greater quantity of human and social capital, the potential rewards of U.S. migration grew. The ratio of expected wages stood at 21 for experienced migrants compared to just 14 for novices considering their first trip. Likewise the expected benefit of welfare rose from $21 to $26, while the expected value of education grew from $131 to $384; the expected value of medical care stayed roughly the same at $4.05 (it was $3.56 before the first trip).

According to the theory of social capital, migration-specific human and social capital combine to perpetuate international migration. Table 6 examines this hypothesis by performing a multinomial logit analysis of the odds of taking an additional U.S. trip, documented or undocumented,

TABLE 6

MULTINOMIAL LOGISTIC REGRESSION OF SELECTED VARIABLES ON THE ODDS OF
TAKING AN ADDITIONAL TRIP TO THE UNITED STATES IN YEAR $t + 1$

SITUATION OF SUBJECT IN YEAR t	WITHOUT DOCUMENTS		WITH DOCUMENTS	
	B	SE	B	SE
Demographic background:				
Age	−.156*	.021	−.005	.034
Age^2	.001*	.0003	−.001	.001
Married	−.207*	.057	.004	.107
No. of minors in household	.071*	.012	.041*	.020
General human capital:				
Labor force experience	−.076*	.008	−.041*	.014
Education	−.033*	.007	.029*	.011
Migration-specific human capital:				
Cumulative U.S. experience	.012*	.001	.012*	.001
No. of prior U.S. trips	.176*	.008	.226*	.008
Last U.S. job unskilled urban	.404*	.052	.919*	.093
Last U.S. job skilled urban	.093*	.005	.354*	.087
General social capital:				
Parent a U.S. migrant	.224*	.043	.452*	.076
No. of U.S. migrant siblings	.006	.013	.090*	.020
% of U.S. migrants in community	2.992*	.558	6.430*	.956
Migration-specific social capital:				
Wife a U.S. migrant	1.340*	.118	2.482*	.163
No. of U.S. migrant children	.075*	.031	.304*	.040
U.S.-born children	1.114*	.138	1.376*	.164
Physical capital:				
Land	−.134	.071	.382*	.095
Home	−.327*	.048	−.324*	.079
Business	−.611*	.064	−.500*	.100
Community infrastructure:				
Preparatory school	.158*	.060	−.236*	.102
Paved road	−.177	.101	−.537*	.173
Bank	−.078	.097	−.021	.156
Community economic context:				
% earning twice minimum wage	.618	.389	−5.066*	.677
% self-employed	.143	.305	−6.107*	.582
% females in manufacturing	−.211	.253	−.732	.440
Community agrarian context:				
Agrarian economy	.200*	.061	.346*	.107
Agrarian population density	−.001	.001	−.001	.002
Proportion of land that is arable	−.113	.099	.968*	.169
Ejido established	.088	.133	−1.317*	.180

TABLE 6 (*Continued*)

SITUATION OF SUBJECT IN YEAR t	WITHOUT DOCUMENTS		WITH DOCUMENTS	
	B	SE	B	SE
Macroeconomic context:				
Expected wage ratio	.001	.001	−.012*	.002
Peso devaluation	−.023	.040	−.009	.008
Mexican inflation rate	−.883*	.191	−.004	.331
U.S. employment growth	4.344*	1.462	4.440	2.691
Growth in foreign investment	−.167*	.048	−.157*	.078
Mexican real interest rate	1.593*	.375	2.142*	.656
U.S. policy context:				
Availability of visas	−2.900*	.409	1.617*	.639
Probability of apprehension	−2.182*	.527	1.923*	.824
Employer sanctions enacted	−.364*	.096	.235	.160
Amnesty recipients in household	1.767*	.143	3.748*	.160
Expected value of U.S. services:				
Welfare	−.060*	.003	.043*	.020
Medical care	.186*	.011	−.190*	.012
Education	−.0003*	.0001	−.002*	.0001
Constant	3.892*	.558	−1.309	.000
Log likelihood	11,829.000*			
χ^2	18,059.000*			
No. of person-years	27,813			

NOTE.—Event-history data gathered among male household heads from 25 Mexican communities.
* $P < .05$.

given that at least one had already occurred. After each trip to the United States, male household heads were followed year by year up to the point at which they took their next U.S. trip, turned 65, or reached the survey date. All time spent in the United States was excluded from the analysis, as were years before 1965, yielding 27,813 person-years lived by 2,091 men. The year the additional trip was taken was coded as "1" if the trip was undocumented and "2" if documented, and all years spent in Mexico preceding the trip were coded as "0."

In general, our expectations about the importance of migration-specific human and social capital are borne out by the analysis: all indicators under these rubrics have strong and highly significant effects on the odds of taking an additional U.S. trip. Under the category of migration-specific human capital, the odds of repeat migration progressively rise as the amount of prior U.S. experience grows and as the number of U.S. trips increases. The effect of both variables is roughly the same for legal and undocumented migrants. Clearly, then, the more one migrates, the more one is likely to continue migrating, suggesting the self-perpetuating nature of the process.

The relative likelihood of repeat migration is also boosted substantially by occupational achievement in the United States. The shift out of agriculture into an urban occupation significantly increases the odds of undertaking another U.S. trip, and the shift from an unskilled to a skilled job raises these odds even more. The effect of occupational achievement interacts significantly with legal status, however: job skill has a stronger effect in promoting additional trips among those with legal documents. A lack of documents inevitably places a ceiling on job mobility that appears to diminish the effect of prior occupational achievement on the likelihood of repeat migration.

As expected, the likelihood of taking another U.S. trip is strongly enhanced by the acquisition of migration-specific social capital. Having a wife and children who have been to the United States and having children born in the United States substantially raise the likelihood of taking an additional U.S. trip. Once again the effects are strongest for documented migrants, suggesting that a long-term commitment to the United States is both more attractive and more viable for those with documents.

Once indicators of migration-specific human and social capital are taken into account, variables that were crucial in determining the odds of taking a first trip become much less important in predicting the odds of making subsequent visits. Whereas general social capital was the most powerful force predicting first undocumented trips, its role in predicting subsequent visits is marginal. The coefficient for having a migrant parent drops by half (from .461 to .224, a significant shift; $P < .05$), and the coefficient for the prevalence of migrants falls by 40% (from 5.016 to 2.992; $P < .05$). Finally, the coefficient for the number of U.S. migrant siblings falls into insignificance (.006, compared to a robust .388 in the model for first trips).

We observe similar declines in the importance of community economic indicators, which were the second most important set of variables in determining the odds of first undocumented trips. Neither the proportion earning twice the minimum wage nor the proportion of females in manufacturing has any significant effect in predicting the odds of taking an additional undocumented trip, and the effects of these variables are significantly reduced in predicting additional documented trips as well. Likewise, the effect of an agrarian economy is lower in predicting additional trips than first trips, a pattern that holds for documented as well as undocumented migrants.

Among variables that were important in predicting the odds of a first trip, only the real interest rate and the existence of amnesty recipients seem to retain their explanatory power in predicting later visits. In keeping with expectations derived from the new economics of labor migration, a high real interest rate substantially increases the odds of making an

additional U.S. trip, legal or illegal; consistent with the theory of social capital, granting amnesty to one family member greatly raises the odds of additional migration by other family members, both documented and undocumented.

The negative selectivity of undocumented migration with respect to general human capital shows up very clearly in predicting additional trips. As labor force experience and education increase, the odds of taking another undocumented trip fall sharply, reflecting the fact that human capital is more likely to be rewarded within Mexico than in the United States among those without legal documents (see Massey and García España 1987; Taylor 1986, 1987).

A pattern of demographic selectivity also emerges quite clearly among undocumented migrants. The likelihood of taking an additional U.S. trip declines at a decelerating rate with age, falls with marriage, and rises as the number of minors increases. Thus, the making of repeated undocumented trips is associated with changes in the family life cycle, rising for young, unmarried men, falling with marriage, and then increasing again as children and a rising dependency burden increase the household's consumption needs (see Massey et al. 1987).

In keeping with expectations derived from the new economics of labor migration, the ownership of land, home, and businesses—prime targets of migrant investment—sharply lower the odds of taking another undocumented trip (although the coefficient for land just misses significance at $P = .058$). If one already possesses these assets, then the need for capital is lower and the motivation for additional migration is correspondingly reduced. The possession of a home and business also sharply lowers the odds of repeat migration by documented migrants.

Once again we find modest support for segmented labor market theory. As expected, higher labor demand in the United States is associated with a higher likelihood of repeat migration. Growth in aggregate U.S. employment significantly boosts the odds of taking an additional trip, documented or undocumented (although the effect for legal migrants is only significant at $P = .098$). Once again, however, there is little support for the leading hypothesis of world systems theory: growth in direct foreign investment is associated with *lower* probabilities of repeat migration among both legal and illegal migrants.

Finally, our analysis of repeat migration reveals little support for the principal hypothesis of neoclassical economics. The ratio of expected wages in the United States and Mexico has no effect on the odds of additional migration among undocumented migrants, and among legal migrants the effect is *negative*. Likewise, expected values of social services tend to have contradictory and offsetting effects. Among undocumented migrants, a rising expected medical benefit increases the likelihood of ad-

ditional migration, but greater expected welfare and educational benefits lower it. Among documented migrants, an increase in expected welfare benefits is associated with a higher likelihood of repeat migration, but greater medical and educational benefits yield lower odds of taking an additional U.S. trip.

There is some evidence that recent U.S. immigration policies have influenced the propensity for repeat migration. As with first trips, the availability of visas plays a very significant role in determining the odds of taking an additional trip: as visas become more available, the odds of undocumented migration fall while the odds of documented migration rise. As mentioned before, the U.S. policy of restricting the number of visas works mainly to channel the ongoing flow of Mexican migrants from documented to undocumented status; it does not stop the flow itself.

Whereas border enforcement and employer sanctions backfired in determining the odds of first migration (increasing the propensity to migrate illegally), the same policies appear to be more successful in reducing the odds of taking additional undocumented trips. As the probability of border apprehension rises, the likelihood of additional undocumented migration falls. Likewise, the implementation of employer sanctions reduces the likelihood of repeated undocumented movement.

Whether these effects translate into meaningful reductions in the probability of undocumented migration is considered in table 5, which presents predicted probabilities of taking an additional trip to the United States without documents. (To conserve space, we do not present predicted probabilities of documented migration.) These figures were computed using the same approach that we used to generate predicted probabilities of first migration, except that we now assume a more experienced person who is 25 years of age with 10 years of experience in the labor market.

Given the greater store of human and social capital accruing to experienced migrants, we generally expect the probability of taking an additional U.S. trip to be higher than the probability of taking a first trip, and this supposition is amply borne out by the predicted probabilities. Whereas the mean probability of going to the United States without documents was .04 initially, it is 10 times greater at .433 for additional trips. Given this risk of repeat migration, 1,000 men returning to Mexico from the United States would have a 94% chance of going again within five years.

As before, the probability of out-migration shifts upward and downward in response to several key variables. The most powerful effects on the likelihood of repeat migration are associated with two indicators of migration-specific human capital: months of prior U.S. experience and number of U.S. trips. As the former moves from its fifth to its ninety-fifth percentile (from two months to 159 months of U.S. experience), the probability of taking an additional illegal trip more than doubles, going

from .321 to .746. Likewise, as the latter goes from its fifth to its ninety-fifth percentile (from one to 15 U.S. trips), the probability of repeat undocumented migration rises from .312 to .841, other factors held constant at their means.

Although indicators of general social capital still have a positive influence on the odds of U.S. migration, their effect is not very strong. Only the presence of a legalized family member retains its high explanatory power. Coming from a household where someone received amnesty under IRCA nearly doubles the probability of repeat migration from .416 to .806. In general, however, migration-specific social capital is far more important in predicting the odds of repeat migration than general social capital, and the migration of the spouse is particularly important: having a migrant wife increases the odds of taking another undocumented trip from .381 to .702. Having U.S.-born children likewise raises the probability from .366 to .538.

In two cases, expected values of social services have rather large effects on probabilities of repeated undocumented migration, but they work in opposite directions. Whereas shifting the value of welfare from its fifth to ninety-fifth percentile (from $3.11 to $85.54) lowers the probability of taking another undocumented trip from .753 to .022, making the corresponding shift in the value of medical care (from $0.20 to $12.49) raises the likelihood from .271 to .786. Thus, the knowledge that they may benefit from medical services while in the United States may play some role in promoting the decision of undocumented Mexican migrants to take another trip, especially since spouses and children are more likely to accompany them. Given the offsetting effects of expected welfare and medical benefits on the odds of repeat illegal migration, however, the net effect of Proposition 187 on the flow of migrants is likely to be nil.

A few predicted probabilities that do not satisfy the criteria for acquiring an asterisk in table 5 deserve comment. First, the effect of the real interest rate, although not as powerful as in the model predicting first trips, still has a modest effect in raising the probability of repeat migration. As the real interest rate moves from its fifth to its ninety-fifth percentile, the probability of taking an additional undocumented trip rises from .368 to .493. Second, the availability of visas continues to exert a rather strong effect on the odds of additional undocumented migration. As the availability index moves from its fifth to its ninety-fifth percentile (.02 to .30), the probability of undocumented migration drops from .472 to .280.

Finally, although recent policy initiatives would seem to move the probabilities of repeat undocumented migration in the direction expected by the U.S. Congress, the effects are modest, roughly on the same order as the effect of real interest rates. According to our estimates, increasing the probability of apprehension from .26 to .42 (moving it from the fifth to

the ninety-fifth percentile) lowers the likelihood of repeat migration from .48 to .39, which is still quite high, and implementing employer sanctions reduces the probability of taking an additional undocumented trip from .446 to .359.

Taken together, currently popular U.S. policy actions seem likely to backfire. Suppose, for example, that we assume the most stringent package of immigration policies imaginable by setting the index of visa availability to its observed minimum (.017), increasing the apprehension probability to its observed maximum (.435), reducing the expected value of all services to zero, and retaining employer sanctions. Given the fact that reducing the supply of visas and reducing the expected values of welfare and education are predicted to *increase* the likelihood of taking another undocumented trip, this set of policies is predicted to increase the probability of repeat migration from .433 to .578.

Suppose instead that we hold visa availability and the expected values of welfare and education constant at their means while increasing the apprehension probability to its observed maximum and implementing employer sanctions. This scenario does, in fact, reduce the predicted probability of taking an additional undocumented trip from .433 to .177. But this figure represents an *annual* probability that is still quite high: out of a cohort of 1,000 young men subject to an 18% annual chance of repeat migration, 623 would take another undocumented journey to the United States within five years.

Whatever the modest effects of border enforcement and employer sanctions are, moreover, they are likely to be offset by the more powerful effects of human and social capital accumulation arising out of the migration process itself. Suppose that, in addition to raising the apprehension probability to its maximum and implementing employer sanctions, we allow indicators of migration-specific human and social capital to assume their ninety-fifth percentile values (not even their absolute maxima). Under these assumptions, the annual probability of taking an additional undocumented trip rises to .989, irrespective of the stringent immigration policies we have assumed.

THE PROCESS OF RETURN MIGRATION

A full understanding of Mexico-U.S. migration not only requires analyzing the process of entry, we also must consider the process of return. Jasso and Rosenzweig (1982) estimate that as many as 56% of the 1971 cohort of legal Mexican immigrants may have left the United States by 1979; and numerous field studies indicate that large numbers of legal immigrants continue to maintain homes, families, and businesses in Mexico while moving back and forth seasonally (see Reichert and Massey 1979; Mines

1981; Dinerman 1982; López 1986; Massey et al. 1987; Goldring 1992; Durand and Massey 1992). As for undocumented migrants, Massey and Singer (1995) estimate that 86% of all illegal Mexican entries over the past 25 years have been offset by departures.

Thus, implied in every decision to enter the United States is a corresponding decision about whether to stay or return, and this decision can be as important as those about taking first or later trips in determining the course of international migration. In order to derive a complete understanding of the process of Mexico-U.S. migration, therefore, we conducted an event-history analysis of the decision to return. Migrants in the United States from 1965 through 1989 were followed year by year from the point of entry until their return to Mexico or the survey date, whichever came first. During each year the migrant did not go home to Mexico, we coded the outcome as "0" and we assigned a value of "1" during the year in which a return trip occurred.

Means and standard deviations for independent variables were computed across person-years spent in the United States and are presented in the right-hand columns of table 3. Compared to respondents observed in Mexico, those captured in the United States have much larger quantities of human and social capital connecting them to that country. These people had accumulated more than 50 months (4.2 years) of U.S. experience and taken 3.5 prior trips. During their current trip, they had accumulated another 63 months (5.2 years) in the United States.

Nearly half (48%) of the respondents had a migrant parent, 56% had migrant spouses, and 41% reported U.S.-born children. The average number of migrant siblings was two, and the average number of migrant children was 0.7. Three-quarters of the respondents had shifted from agriculture into an urban U.S. occupation, and 45% held a skilled U.S. job. As a result of this enhanced human and social capital, the ratio of expected wages had grown to 22.9, and the expected service benefits had increased to $61 for welfare, $10 for medical care, and $1,290 for education.

We use separate dichotomous logit models to predict the return migration of men with and without legal documents. We follow migrants year by year from the moment they enter the United States until they return to Mexico or the survey date. Given individual, household, community, and macroeconomic characteristics in year t, we predict the odds of leaving the United States that same year, and the resulting coefficients are shown in table 7. In total, 1,609 undocumented and 611 documented migrants contributed 8,394 and 4,733 person-years of observation, respectively.

The estimated models clearly show that the accumulation of migration-specific human and social capital deters return migration to Mexico. As the number of months of U.S. experience grows and the duration of the

TABLE 7

Logistic Regression of Selected Variables on the Odds of Returning to Mexico from the United States in Year t

Situation of Subject in Year t	Without Documents		With Documents	
	B	SE	B	SE
Demographic background:				
Age	.002	.047	−.002	.097
Age^2	−.0002	.0006	.001	.001
Married	.224*	.108	−.658*	.239
No. of minors in household	−.010	.027	.049	.055
General human capital:				
Labor force experience	−.007	.015	.042	.033
Education	−.048*	.013	−.087*	.029
Migration-specific human capital:				
Cumulative U.S. experience	−.025*	.002	−.035*	.002
Duration of trip in months	−.221*	.008	−.079*	.006
No. of prior U.S. trips	.270*	.022	.276*	.020
Holds unskilled urban job	−.607*	.096	−.124	.211
Holds skilled urban job	−.323*	.102	.289	.203
General social capital:				
Parent a U.S. migrant	.140	.087	.121	.170
No. of U.S. migrant siblings	−.039	.027	.065	.041
% of U.S. migrants in community	.653	1.115	−2.503	2.169
Migration-specific social capital:				
Wife a U.S. migrant	−.360	.198	−2.174*	.369
No. of U.S. migrant children	−.387*	.077	−.844*	.081
U.S.-born children	.050	.242	−1.326*	.367
Physical capital:				
Land	.931*	.168	.994*	.221
Home	.241*	.109	.216	.182
Business	−.193	.148	−.046	.226
Community infrastructure:				
Preparatory school	.172	.119	.875*	.223
Paved road	−.063	.174	1.332*	.469
Bank	.414*	.207	−.387	.413
Community economic context:				
% earning twice minimum wage	−2.782*	.761	−3.883*	1.548
% self-employed	1.939*	.596	−1.012	1.397
% females in manufacturing	−2.424*	.525	−6.072*	1.235
Community agrarian context:				
Agrarian economy	−.200	.120	−.127	.235
Agrarian population density	.001	.001	.014	.005
Proportion of land that is arable	.097	.202	−.624	.364
Ejido established	−.326	.288	−1.158*	.507

TABLE 7 (*Continued*)

SITUATION OF SUBJECT IN YEAR *t*	WITHOUT DOCUMENTS		WITH DOCUMENTS	
	B	SE	B	SE
Macroeconomic context:				
Expected wage ratio	−.0003	.001	.0003	.002
Peso devaluation	−.027	.083	−.245	.151
Mexican inflation rate	1.098*	.396	3.032*	.724
U.S. employment growth	2.936	2.797	−5.879	5.616
Growth in foreign investment	−.136	.100	.530*	.168
Mexican real interest rate	1.560*	.760	−.326	1.443
U.S. policy context:				
Availability of visas	−1.990*	.848	−2.549	1.517
Probability of apprehension	−.090	1.126	−4.761*	1.937
Employer sanctions enacted	.232	.228	−1.133*	.332
Amnesty recipients in household	.092	.295	−.198	.281
Expected value of U.S. services:				
Welfare	−.010	.008	−.028*	.008
Medical care	−.014	.030	.297*	.045
Education	.0002	.0002	.0009*	.0002
Constant	3.565*	1.191	5.620	.225
Log likelihood	2,147.800*		743.340*	
χ^2	6,169.900*		2,963.300*	
No. of person-years	8,394		4,733	

NOTE.—Event-history data gathered among male household heads from 25 Mexican communities.
* $P < .05$.

trip lengthens, the likelihood of returning to Mexico falls rather steeply, irrespective of whether the trip is documented or undocumented (although the effect of trip duration is especially strong for undocumented migrants). In addition, the attainment of an urban job lowers the odds of return among those without documents, especially if the job is skilled.

The accumulation of prior U.S. trips, however, increases the odds of going home on any given trip. Building up a large number of prior trips indicates the adoption of a strategy of recurrent migration, which involves making regular trips back and forth from the United States for seasonal employment while maintaining families, households, and numerous social and economic interests in Mexico (Reichert and Massey 1979; Mines 1981; López 1986; Massey et al. 1987).

While general social capital has no significant effect on the odds of return migration, migration-specific social capital has a very profound influence but with interesting differences between legal and illegal migrants. Among those without documents, only the presence of migrant children acts to deter return migration; among those with documents, however,

having a migrant wife and U.S.-born children, as well as migrant children, strongly and sharply lowers the odds of return migration. The settlement process, therefore, is mediated by the receipt of documents; once legalization occurs, wives and children act more strongly to deter return migration to Mexico.

Marriage also has different effects on the odds of return among illegal and legal migrants. Being married increases significantly the probability that undocumented migrants will return to Mexico, but, among those with documents, marriage sharply reduces the odds of going home. Ethnographic studies suggest that Mexican men are generally reluctant to bring their wives to the United States (Reichert 1979; Massey et al. 1987; Hondagneu-Sotelo 1994; Kanaiaupuni 1995; Goldring 1995; Hagan 1995; Espinosa 1996). Accordingly, wives and small children are generally the last family members to migrate (see Massey et al. 1994).

Although Mexican men often rationalize their reluctance to bring wives as an unwillingness to expose them to the rigors of clandestine border crossing and undocumented life, they also fear a loss of patriarchal control (Hondagneu-Sotelo 1994). Once a man acquires documentation, however, this rationalization disappears, and wives are more successful in pushing their husbands to settle north of the border and to petition for documents for themselves and their children (Hondagneu-Sotelo 1994; Hagan 1994).

Since education opens doors to economic advancement in the United States, it is not surprising that the odds of return migration fall as education rises. It is also not surprising that the negative effect of schooling is stronger for documented than undocumented migrants, since the former have full liberty to capitalize on their skills in the U.S. labor market, whereas the latter encounter strong barriers to economic mobility owing to their illegal status. As a result, undocumented migrants with education have less incentive to remain in the United States and more inducements to return to Mexico.

The odds of return migration are substantially increased by the possession of land in Mexico and to a lesser extent by home ownership. The prospect of return is also enhanced by several aspects of community infrastructure. The presence of a bank in the community, for example, raises the odds of return migration for undocumented migrants, probably by providing a secure place to repatriate savings. Among documented migrants, the existence of schools and highways also raises the odds of going home.

Whereas dynamic local economies strongly promoted initial out-migration, they sharply lower the odds of return migration. Contrary to expectations derived from neoclassical economics, migrants are *less likely* to return to communities with high wage rates and high proportions of females employed in manufacturing. Lindstrom (1996) found the same pattern in his hazard analysis of return migration to a rural town in Zacatecas. He

concluded that a strong local economy gave migrants an incentive for productive investment at home and, hence, a greater need for capital, causing them to lengthen their trips in order to accumulate more cash before returning. Migrants from economically stagnant areas used U.S. migration as a source of income rather than capital and thus had less need to remain in the United States to accumulate savings, so they tended to return more quickly and to migrate more frequently.

Lindstrom's interpretation is consistent with behavior postulated under the new economics of migration, providing additional support for that theory. His interpretation is lent credence by the fact that the proportion of workers who are self-employed in a migrant's home community has a strong *positive* effect on the likelihood of return migration. People tend to return to communities where self-employment is common and entrepreneurial activity well established.

Agrarian conditions apparently have little bearing on the odds of return migration. Migrants are just as likely to return to agricultural as to industrial/service economies, and both land densities and the relative amount of cultivable land have insignificant effects on the odds of going home. The existence of an *ejido* in the migrant's home community appears to deter the likelihood of return migration somewhat but only for those with documents.

The prospects of return migration are quite strongly linked to macroeconomic conditions, however, although once again not in ways envisioned by most policymakers and citizens. In particular, the binational wage rate has no significant effect on whether a Mexican migrant stays or goes, and devaluations likewise do not appear to influence settlement decisions. The relative likelihood of return migration is most strongly and positively connected to rates of inflation and real interest in Mexico. A high rate of inflation means that people possessing dollars can purchase goods and services cheaply in Mexico, providing them with a strong incentive to return; and high real interest rates mean that migrants with savings can earn a good return on their capital if they go home, providing yet another impetus for returning.

In our fieldwork, we have encountered many examples of settled U.S. migrants cashing in their U.S. assets and returning to Mexico to take advantage of unusual opportunities offered by a sudden burst of hyperinflation and elevated interest rates. Indeed, the family profiled in Massey et al. (1987, pp. 280–83) as the archetype of a settled U.S. migrant household returned to Mexico just after the book's publication, during the round of hyperinflation in 1987–88. They sold their house and business assets in Los Angeles and went home during a time when inflation and interest rates were quite high. With the large quantity of pesos they obtained for their dollars,

they established a factory in their hometown, built themselves a palatial home, and lived well off of their factory income and investments.

Finally, our analysis provides little encouragement for those seeking to stimulate return migration through restrictive immigration policies. Among undocumented migrants, the odds of return are not affected by fluctuations in the probability of border apprehension, the implementation of employer sanctions, or the expected value of social services. The only policy variable to influence the behavior of undocumented immigrants significantly is the availability of visas: as legal visas become more available, undocumented migrants grow less likely to return, probably in expectation of being able to legalize their status. Thus, the legalization of 2.3 million Mexicans under IRCA acted to deter the return migration of undocumented migrants living in the United States, even those who did not qualify directly for the amnesty.

Paradoxically, repressive immigration policies seem to have stronger effects on the behavior of documented migrants. As the probability of border apprehension increases and employer sanctions are enacted, the odds of return migration for legal immigrants fall. It may be that the imposition of restrictive policies motivates those with documents to remain in the United States and petition for the legal entry of their undocumented family members, since they fear it will be harder for their dependents to gain entry through the usual clandestine channels.

We used the logit model of table 7 to generate predicted probabilities of return migration for undocumented migrants, prepared using the same approach as before. We consider the case of a 25-year-old man with 10 years of labor market experience and estimate his probability of returning to Mexico during the first year of a U.S. trip. As before, we vary each explanatory factor from its fifth to its ninety-fifth percentile while holding other variables constant at the mean. The resulting predicted probabilities are shown in the right-hand columns of table 5, and ranges greater than 50% of the mean probability of return migration are indicated with an asterisk.

In general, undocumented migrants are relatively likely to return during the first year. The mean probability is .312, which implies that roughly a third of all undocumented migrants leave within 12 months of arriving. Out of an entering cohort of 1,000 arriving migrants, 845 would be expected to return to Mexico within five years subject to this yearly risk. As before, however, the probability of return migration shifts sharply upward and downward in response to certain variables.

Decisions about return migration appear to be dominated by five basic factors, the first of which is the quantity of migration-specific human capital, in particular the amount of time accumulated north of the border on prior trips. Undocumented migrants are unlikely to return to Mexico if

they have built up a large quantity of time in the United States, unless they have already established a clear pattern of back-and-forth movement (indicated by a large number of prior trips). Other things equal, as months of U.S. experience go from the fifth to the ninety-fifth percentile (from zero to 139 months), the probability of return migration drops from .524 all the way down to .025.

A second factor influencing the odds of return migration is the amount of migration-specific social capital a person has accumulated. In general, migrants are less likely to return to Mexico if other members of their families have also begun migrating. Among undocumented migrants, children appear to be key. As the number of migrant children goes from zero (the fifth percentile) to four (the ninety-fifth percentile) the predicted probability of return migration during the first year drops from .348 to .143.

The third factor influencing the decision about whether to stay or return is physical capital, in particular land ownership. Migrants who own land in Mexico are much more likely to go home than those who do not. The possession of farmland increases the probability of returning during the first year from .298 to .519.

The fourth consideration influencing the decision to return is the economic condition of the home community. In general, migrants tend to stay away longer from places with high wages and high proportions of females employed in manufacturing in order to accumulate more savings for investment. Increasing the proportion earning twice the minimum wage from its fifth to ninety-fifth percentile (from 5% to 37%) lowers the probability of return from .426 to .235, while shifting the share of women in manufacturing from 8% to 58% (its fifth and ninety-fifth percentile cutpoints) reduces the likelihood from .359 to .144. If the community offers an unusually hospitable climate for self-employment, however, return migration becomes more likely, with the probability of return going from .257 to .424 as the percentage self-employment goes from 21% to 60% (the fifth and ninety-fifth percentiles).

Finally, the last relevant variables are macroeconomic, notably the Mexican inflation rate and to a lesser extent the real interest rate. As inflation increases from its fifth percentile value (4% per year) to its ninety-fifth percentile value (84% per year), the probability of return migration goes from .250 to .424. Likewise, shifting the real interest rate between these two percentile points (from −14% to 19%) raises the likelihood of return from .261 to .368.

THEORIES OF MIGRATION RECONSIDERED

In this analysis, we have estimated a series of discrete-time event-history models to determine which factors influence the likelihood of taking a first

U.S. trip, which determine the odds of taking an additional U.S. trip and which affect decisions about whether to stay in the United States or return to Mexico. We considered both documented and undocumented migrants and examined variables defined at the individual, household, community, and macroeconomic levels. We are now in a position to take stock of how the various theories stand up against a close and systematic empirical scrutiny.

Neoclassical Economics

Although hypotheses consistent with neoclassical economics were frequently confirmed, its leading explanatory variable—the differential in expected wages between Mexico and the United States—does not appear to be a major factor explaining the course of Mexican migration over the past 25 years. Among undocumented migrants, the expected wage ratio is weakly associated with the odds of taking a first undocumented trip, is not related to the odds of taking additional trips, and is unrelated to the likelihood of going home. Among documented migrants, the expected wage ratio is not related to decisions made at any phase of the migration process—initiation, continuation, or return.

The effect of inflation and devaluation, which are often thought to increase the propensity for Mexicans to migrate by increasing the relative value of U.S. earnings, actually work to decrease the probability of both first and subsequent trips by undocumented migrants because they drive up the cost of surreptitious border crossing, a cost that must be paid in dollars. As legal migrants do not have to pay these costs, their decisions are unaffected by either inflation or devaluation.

The effects of recent U.S. policy initiatives also do not provide much support for neoclassical precepts. Attempts to raise the costs and lower the benefits of migration by increasing the probability of apprehension and by enacting employer sanctions generally have not lowered the likelihood of taking a first trip without documents, nor have they influenced the odds that undocumented migrants in the United States return home to Mexico. We do observe modest effects on the odds of repeat migration, but they are not strong in comparison with other effects in the model.

Expected values of U.S. social services do not appear to influence the migration process in any consistent way either. If Mexicans were migrating in anticipation of receiving social service benefits in the United States, then we would expect to observe a positive relationship between the size of the expected benefit and the odds of initial and repeat migration and a negative relationship between the size of the benefit and the likelihood of returning home to Mexico.

Of the three social services we consider—welfare, medical care, and

education—we observe one positive, one negative, and one insignificant effect on the odds of initial undocumented migration; we find one positive and two negative effects on the odds of repeat undocumented migration; and we observe no significant effects on the likelihood of returning home to Mexico. Among those with legal papers, benefit levels do not influence the odds of taking a first trip at all, and, in predicting additional legal trips, we find one positive and two negative effects. Finally, for return migration among legal immigrants, we find one negative and two positive effects. Given the potential for error in our estimation of expected benefits, it is difficult to find much support for the cost-benefit model of neoclassical economics in these contradictory results, which essentially balance out to overall effects near zero.

The only neoclassical hypotheses consistently sustained in our analysis are those that concern the effects of human capital. We found that undocumented migrants are negatively selected with respect to education on both first and later trips and that documented migrants are unselected with respect to education on first trips but positively selected on later trips. We also found that, irrespective of legal status, migrants are progressively less likely to return home the more education they have but that the effect of schooling is stronger for documented than for undocumented migrants.

These findings are consistent with a central thesis of neoclassical economics: that migrants move to places where their skills and abilities are most highly rewarded (see Sjaastad 1962). Owing to differences of language and culture, education acquired in Mexico is more likely to be rewarded in that country than in the United States (yielding the negative selectivity), and, given the constraints on economic mobility imposed by a lack of documents, the rewards of schooling are likely to be greater for documented than undocumented migrants (yielding differing patterns of selectivity by legal status).

We also found strong effects for indicators of migration-specific human capital consistent with neoclassical theory. As migrants accumulate experience and acquire job skills in the United States, the odds of taking another U.S. trip increase while odds of returning home decline, a pattern that holds for documented as well as undocumented migrants. Once a man migrates, he is likely to continue migrating, and the more he migrates the higher his odds of going again and the lower his ultimate odds of returning home.

According to neoclassical economics, however, human capital variables should influence migration and settlement decisions through their effect on expected wage rates. Because we have already incorporated this effect into our analysis by including the expected wage ratio as a regressor in all models, even our finding of strong relationships between human capital and migratory behavior does not provide unequivocal support for the neo-

classical model: the effects of general and migration-specific human capital may reflect social rather than economic dimensions of these variables.

The New Economics of Migration

In general, precepts arising from the new economics of labor migration receive very strong support from our analyses. Consistent with the view that Mexicans migrate to gain access to scarce capital rather than to reap higher lifetime incomes, migration decisions at all stages of the process are more strongly linked to fluctuations in Mexican interest rates than to variations in the ratio of expected wages. Higher real interest rates make capital less accessible and force households onto the transnational labor market to acquire funds that they cannot obtain at home owing to failures in capital and credit markets. Interest rates, not wages, appear to be the key macroeconomic factor determining the course of Mexico-U.S. migration. As they go up, circulation within the migration system accelerates: more Mexicans leave for the United States to gain capital, and more migrants return to Mexico to invest what they have saved.

The effect of property ownership on migration also supports predictions derived from the new economics of migration. A primary motivation for international migration is the acquisition of a home, and studies from around the world show that more remittances and savings are channeled into housing than to any other end (Taylor et al. 1996a, 1996b). In this sense, the possession of a home constitutes a major disincentive for international movement, as one of the principal needs for capital has already been satisfied. We found that home ownership sharply lowers the odds of both initial and repeat migration among documented and undocumented migrants, and we generally found similar, though weaker, effects of business ownership, another important target for migrant investment. Home ownership also tended to increase the probability of return migration, although the effect was not strong. In predicting return migration, land ownership was a particularly powerful variable.

Segmented Labor Market Theory

We found modest support for the view that Mexican migration is driven by labor demand in the United States. As the rate of U.S. job creation rises, so does the probability of first and subsequent undocumented trips, but the rate of employment growth is unrelated to the likelihood of documented migration or to the probability that either documented or undocumented migrants return home. Moreover, job growth has a relatively small effect on predicted probabilities of undocumented migration. While

987

technically correct, therefore, segmented labor market theory does not appear to account for much of the variance in undocumented movement.

Our indicator of labor demand is not very good, however, and a more theoretically appropriate measure might have produced more supportive results. Ideally our models would have included a measure of employment demand within those segments of the economy where Mexicans are disproportionately employed, not simply an indicator of overall job growth. Unfortunately, such data are not available on a year-to-year basis by state and thus could not be incorporated into our model.

Social Capital Theory

Migration is very strongly encouraged by having social connections to U.S. migrants. During the initial stage of migration, ties to parents, siblings, and community members with U.S. experience are most important in raising the odds of taking a first U.S. trip, with or without documents. Although indicators of general social capital continue to be significant in predicting later trips, a more powerful role is played by migration-specific social capital—ties developed in the course of migration itself. The migration of wives and children and the birth of children in the United States strongly raise the odds of taking additional U.S. trips, documented or undocumented, and strongly lower the odds of returning to Mexico, especially among those with documents.

World Systems Theory

We did not find much support for the leading hypothesis of world systems theory: that migration between Mexico and the United States stems from an ongoing process of capital penetration. Direct foreign investment had relatively small effects on predicted probabilities of initial, repeat, and return migration, and, to the extent that there was an effect, a high rate of growth in direct foreign investment produced a *lower* likelihood of initial undocumented migration and *reduced* probabilities of repeat migration among both legal and undocumented migrants. It also tended to raise the likelihood of return migration for those with documents.

We might have found more supportive results if we had been able to trace out the local effects of capital penetration. Indeed, when we examined the effect of economic development at the community level, we found patterns consistent with world systems theory, which sees development as a radical transformation that displaces people from traditional ways of life and creates a mobilized population prone to migrate. Thus, we found that economic development—as indicated by high wage rates and high proportions of women working in manufacturing—was central to

initiating the process of undocumented out-migration. As these factors increased, the odds of first undocumented migration rose sharply. As already noted, however, the same findings are consistent with the new economics of migration, so ultimately our analysis provides equivocal support for world systems theory.

What Is Driving Mexico-U.S. Migration?

After systematically considering the effects of 41 variables and exploring the validity of five theories of international migration, we conclude that three fundamental forces are at work in promoting Mexican migration to the United States. The first is *social capital formation,* which occurs because people who are related to U.S. migrants are themselves more likely to migrate. As a result, each act of migration creates additional social capital capable of instigating and sustaining more migration. After more than 50 years of continuous development, this process of social capital formation is well advanced and largely self-sustaining. National surveys indicate that about half of adult Mexicans are related to someone living in the United States (Camp 1993), so that social capital—generally the most powerful factor predicting the odds of initial, repeat, and return migration—is very widely diffused throughout the Mexican population.

The second fundamental force is *human capital formation.* For undocumented migrants, the most important element of human capital is migration experience itself: crossing the border, living in the United States, working in the U.S. labor market, and negotiating U.S. housing markets. The more U.S. experience a migrant accumulates, the higher his likelihood of both documented and undocumented migration. Once a man migrates, the odds are quite high that he will migrate again, and, with each additional month of U.S. experience, the odds of taking another trip rise while the odds of returning to Mexico fall.

This process of self-reinforcing human capital formation intersects with and reinforces the process of social capital formation since added experience makes a person more valuable as a resource for gaining entry to the United States and finding a job. The more experience a person has, the more likely his friends and relatives are to begin migrating and to continue migrating themselves. National surveys reveal that one-third of all Mexicans have been to the United States at some point in their lives (Camp 1993). Once again, after 50 years of constant movement back and forth, the human capital necessary to support mass migration is also widely diffused throughout Mexico.

The final process underlying Mexico-U.S. migration is *market consolidation.* Over the past two decades, the economies of Mexico and the United States have become increasingly connected to each other and to

the global capitalist economy. Within rural Mexico, competitive markets have penetrated ever further into subsistence sectors and brought about the displacement of manual workers, the concentration of land, and the mechanization of production. Within urban Mexico, the ending of import substitution industrialization has brought about wrenching economic transformations that have displaced workers from parastate enterprises and public bureaucracies.

Growing economic insecurity coupled with a strong desire to participate in this new political economy have led Mexican households to search for ways to self insure against threats to family income and to gain access to scarce capital. Given ready access to human and social capital connecting them to the United States, household heads and other family members migrate internationally as part of a conscious strategy of risk diversification and capital accumulation. Thus, economic development goes hand in hand with international migration.

U.S. POLICIES RECONSIDERED

This theoretical understanding permits a clearer evaluation of policy options for the United States. Although the mechanisms hypothesized under neoclassical economics do not seem to play a very large role in promoting Mexico-U.S. migration, U.S. policy has been based almost exclusively on a cost-benefit approach. In recent years, for example, the U.S. Congress has reduced the number of visas available to Mexicans, devoted more resources to border enforcement, and enacted employer sanctions; it is now debating whether or not to bar legal immigrants from receiving certain social services, and California's Proposition 187 seeks to deny undocumented migrants public services in that state.

Our analysis suggests that these actions will not be very effective in reducing undocumented migration from Mexico to the United States. First, reducing the supply of legal visas simply channels a larger share of the migrant stream into undocumented status without really affecting the volume of the flow. Second, increasing apprehension probabilities and implementing employer sanctions raise the odds of initial undocumented migration and have no effect on the odds that undocumented migrants already in the United States will return to Mexico. Third, although raising apprehension probabilities and implementing employer sanctions have modest effects in lowering the odds of taking additional illegal trips, these are counterbalanced by positive effects on first trips to yield a net effect close to zero, consistent with Espenshade's (1994) analysis of aggregate apprehension statistics. Finally, whether positive or negative, the effects of border apprehensions and employer sanctions on predicted probabilities of initial, repeat, and return migration are rather small and are conse-

quently overwhelmed by the more powerful forces of social capital formation, human capital formation, and market consolidation.

Cutting off undocumented migrants from the receipt of social services will probably have contradictory and largely offsetting effects on the odds of initial and repeat migration and no effects whatsoever on the likelihood of return migration. The most likely effect of Proposition 187's implementation in California will not be a reduction in the size of the undocumented population in that state, but the creation of an undocumented population that is markedly poorer, less healthy, less educated, and more tenuously connected to the rest of society.

At the same time that the United States has implemented repressive policies to discourage immigration from Mexico, it has pursued other policies that have had unintended, but ultimately more powerful, effects that encourage the transnational flow. The U.S. policy of allocating visas on the basis of family ties, for example, reinforces the process of social capital accumulation that is one of the principal engines of Mexican immigration. Of the 656,000 legal immigrants admitted to the United States in 1990 (excluding those receiving amnesty), 77% were admitted because they were related to someone already admitted to the country (U.S. INS 1994).

The process of social capital formation was given additional impetus by the legalization program implemented under the Immigration Reform and Control Act. The legalization of 2.3 million former undocumented Mexican migrants promotes chain migration in two ways: first, it gives immediate family members in Mexico a new claim on legal entry (6% of all immigrants in 1993 were dependents of former undocumented migrants who had undergone legalization); second, legalization allows amnesty recipients to sponsor the undocumented migration of their friends and relatives. According to our analysis, being from a household where someone received amnesty very greatly increases the odds of first and subsequent migration by undocumented family members.

U.S. economic policies toward Mexico also have worked to exacerbate one of the most important factors promoting migration to the United States: high interest rates. As a condition of receiving additional funds and loan guarantees from the United States to deal with its successive economic crises over the past decade, Mexico has repeatedly been forced to raise interest rates to exceedingly high levels. Our analysis clearly shows that high interest rates are a powerful force promoting both documented and undocumented migration.

Finally, economic changes occurring in Mexico under the auspices of the North American Free Trade Agreement (NAFTA) can be expected to promote undocumented migration as well. The provisions of NAFTA reinforce the ongoing process of market consolidation in Mexico and help to bring about the social and economic transformations that generate mi-

grants. The integration of the North American market will also create new links of transportation, telecommunication, and interpersonal acquaintance, connections that are necessary for the efficient movement of goods, information, and capital but which also encourage and promote the movement of people—students, business executives, tourists, and, ultimately, undocumented workers.

In the final analysis, then, U.S. policies with respect to Mexican immigration are counterproductive. The repressive measures currently favored by voters and public officials, when combined with policy actions that unintentionally reinforce and nurture the forces driving Mexico-U.S. migration yield the worst of all possible worlds. The flow of migrants is not stopped, and all parties pay a high price for these continuing, misdirected efforts. The migrants pay the highest price, of course, because they bear the brunt of the repressive measures. The United States also pays a high price, however, through the creation of a new population of marginalized residents disconnected from the rest of society—unhealthy, poorly educated, with little stake in the future of the country, its government, or its way of life.

APPENDIX

TABLE A1

SELECTIVITY-CORRECTED REGRESSIONS USED TO PREDICT EXPECTED HOURLY WAGES IN MEXICO AND THE UNITED STATES

VARIABLE	MIGRANT WITHIN MEXICO		LOG OF MEXICAN HOURLY WAGE		MIGRANT WITHIN U.S.		LOG OF U.S. HOURLY WAGE	
	B	SE	B	SE	B	SE	B	SE
Demographic background:								
Married	−.135*	.014	.165	.213	−.063*	.018	−.105*	.072
No. of minors in household	−.007*	.002	.056	.057	.029*	.004	−.034*	.013
General human capital:								
Labor force experience	−.002*	.001	−.030*	.012	−.050*	.001	.011*	.003
Education	.040*	.001	.089*	.023	−.019*	.002	.021*	.006
Migration-specific human capital:								
Cumulative U.S. experience	−.005*	.001	.004	.006	.015*	.001	.0006*	.0003
No. of prior U.S. trips	−.050*	.004	.073	.122	.120*	.003	−.0006	.005
Documented	−.395*	.039	.211	.624	.529*	.028	.011	.063
General social capital:								
Wife a U.S. migrant	−.262*	.025	−1.433*	.289	.971*	.022	.152*	.071
No. of U.S. migrant children	.048*	.008	−.258	.257	−.012	.009	−.019	.017
U.S.-born children	−.385*	.047	.257	.910	.255*	.033	.140	.752
Period:								
1970–74			−1.049*	.395			.104	.214
1975–79			−.286	.413			−.017	.202
1980–84			−.346	.401			−.306	.200
1985–89			−1.471*	.413			−.112	.194
Selectivity:								
λ			.509*	.165			−.032	.034
Constant	−.735*	.014	.141	.406	−.911*	.018	1.697*	.209
Log likelihood	40,686.000*				20,985.000*			
χ^2	4,560.100*				34,978.000*			
Adjusted R^2			.237				.126	
Person-years	89,737		16,596		89,737		13,775	

NOTE.—Hourly wages in both Mexico and the United States are expressed in 1990 U.S. dollars.

TABLE A2

BIVARIATE PROBIT ESTIMATES OF EQUATIONS USED TO PREDICT THE PROBABILITY OF USING SOCIAL SERVICES IN THE UNITED STATES

VARIABLE	USED AFDC OR FOOD STAMPS		USED UNREIMBURSED MEDICAL SERVICES		USED U.S. PUBLIC SCHOOLS	
	B	SE	B	SE	B	SE
Demographic background:						
Age	-.108*	.006	-.103*	.006	-.045*	.004
Age²	.001*	.0001	.001*	.0001	.0001*	.00001
No. of minors in household	.039*	.006	.062*	.006	.056*	.003
General human capital:						
Education	.015*	.002	.027*	.002	-.007*	.002
Migration-specific capital:						
Cumulative U.S. experience	.001*	.0001	.002*	.0002	.004*	.001
Documented	.343*	.022	-.121*	.035	.067*	.021
General social capital:						
Wife a U.S. migrant	.480*	.023	.563*	.033	1.139*	.019
No. of U.S. migrant children	.047*	.007	.072*	.011	.208*	.005
U.S.-born children	.365*	.027	.317*	.039	.849*	.024
Period:						
1970–74					-.120*	.018
1975–79					-.272*	.019
1980–84					-.453*	.021
1985–89					-.621*	.024
Constant	-.090	.085	-.428*	.092	-.118	.062
Log likelihood	15,187.000*		10,854.000		31,996.000	
ρ	-.987		.292		.452	
Person-years	89,737		89,737		89,736	

NOTE.—Migration selection equations are not shown.
* $P < .05$.

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