



Explaining Undocumented Migration to the U.S.¹

Douglas S. Massey
Princeton University

Jorge Durand
University of Guadalajara
Centro de Investigación y Docencia Económicas

Karen A. Pren
Princeton University

Using data from the Mexican Migration Project and the Latin American Migration Project, we find that undocumented migration from Mexico reflects U.S. labor demand and access to migrant networks and is little affected by border enforcement, which instead sharply reduces the odds of return movement. Undocumented migration from Central America follows primarily from political violence associated with the U.S. intervention of the 1980s, and return migration has always been unlikely. Mass undocumented migration from Mexico appears to have ended because of demographic changes there, but undocumented migration from Central America can be expected to grow slowly through processes of family reunification.

Although net unauthorized migration from Mexico to the U.S. has been zero or negative since 2008 (Wasem, 2011; Baker and Rytina, 2013; Warren and Warren, 2013) and border apprehensions are at their lowest level since 1970 (Massey, 2013), unauthorized migration by Central Americans continues to grow and apprehensions are rising (Passel, Cohn, and Gonzalez-Barrera, 2013). Whereas border apprehensions of Mexicans fell from 1.7 million in 2000 to 449,000 in 2012, apprehensions of Central Americans rose from 33,000 to 145,000 over the same period. Here, we draw upon data from the Mexican Migration Project (MMP) and the Latin

¹The authors acknowledge support from NIH Grants R24 HD047879 and R01 HD035643.

American Migration Project (LAMP) to study and explain these contrasting trends in undocumented migration. The paper constitutes the first comparative analysis of undocumented migration from Mexico and Central America based on comparable data.

We begin our analysis by reviewing the history of undocumented migration from both regions. After describing our methods and data, we specify and estimate equations to model decisions made by actors at four key junctures in the migration process: taking a first undocumented trip to the U.S., returning from that first trip, taking an additional undocumented trip to the U.S., and returning from that additional trip. We then draw on the estimated models to interpret recent trends in undocumented migration from Mexico and Central America. In the conclusion, we summarize our findings and draw on the final models to predict the future of undocumented migration to the U.S. We offer our findings as evidence of the benefits of a multisite, multimethod research design for studying the dynamics of migration, especially in cases where much of the movement is unauthorized. The MMP originated this approach, and the LAMP was the first spin-off project.

THE EVOLUTION OF UNDOCUMENTED MIGRATION

The origins of U.S. undocumented migration date back to 1965 when changes in U.S. immigration policy blocked avenues for legal entry from Mexico (Massey and Pren, 2012). Prior to that year, Mexicans had enjoyed access to a large temporary worker program and legal permanent immigration was not restricted numerically. In the late 1950s, around half a million Mexicans entered the country each year, roughly 90 percent as temporary workers known as Braceros and the rest as legal permanent residents (Massey and Pren, 2012). Despite the label, many permanent residents actually circulated back and forth using their “green cards” as de facto work permits (Massey *et al.*, 1987). Indeed, Warren and Kraly (1985) estimate that during the 1970s, annual out-migration by Mexican legal residents averaged about 20 percent of annual in-migration, and Jasso and Rosenzweig (1982) estimate that 56 percent of legal immigrants from Mexico who arrived in 1970 had returned by 1979.

At the end of 1964, the U.S. Congress abruptly terminated the Bracero Program, and in 1965, it imposed the first-ever numerical limitations on legal immigration from the Western Hemisphere. Mexican migration, however, did not cease. Although the deportation campaigns of the 1930s

and the lack of significant immigration from Mexico between 1929 and 1942 had ruptured the migrant networks that formed during the migration boom of the 1920s (Hoffman, 1974; Cardoso, 1980; Baldarrama, 1995), over 22 years, the Bracero Program reestablished mass migration from Mexico and regenerated networks linking residents of communities throughout Mexico to jobs and destinations in the U.S. (Massey *et al.*, 1987; Massey, Durand, and Malone, 2002). These networks provided non-migrants with access to information and assistance in crossing the border to lower the costs and risks of cross-border movement (Palloni *et al.*, 2001). Given continuing labor demand in the U.S., well-developed migrant networks, and economic needs in Mexico, the annual inflow of migrants did not cease when opportunities for legal entry were curtailed after 1965; instead, migrants simply drew on network ties to continue migrating without authorization to jobs waiting for them north of the border (Massey and Pren, 2012).

As during the Bracero years, the undocumented flows that arose after 1965 were overwhelmingly circular, with 85 percent of undocumented entries being offset by departures (Massey and Singer, 1995). As a result, the undocumented population grew slowly and had increased to just 3.2 million by 1986 (Wasem, 2011), when Congress passed the Immigration Reform and Control Act (IRCA). This legislation contained two legalization programs that temporarily reduced the undocumented population to 1.9 million persons in 1988 (Woodrow and Passel, 1990). By 1990, however, the undocumented inflow had resumed its former pace (Orrenius and Zavodny, 2003), and two years later, the population was back up to 3.4 million (Warren, 2000). In addition to legalizing former undocumented migrants, IRCA simultaneously stepped up enforcement by criminalizing the hiring of undocumented migrants and increasing the size and budget of the Border Patrol, thus beginning a two-decade process of border militarization (Massey, Durand, and Malone, 2002; Massey, 2011).

Between 1986 and 2000, the number of Border Patrol Officers nearly tripled and the agency's budget grew by a factor of seven (Massey, Durand, and Malone, 2002). As border enforcement accelerated, the rate of cross-border circulation steadily fell, especially after the launching of Operation Blockade in El Paso in 1993 and Operation Gatekeeper in San Diego in 1994 (Massey, Durand, and Malone, 2002). As the costs and risks of unauthorized border crossing multiplied, migrants quite logically minimized border crossing – not by remaining home in Mexico as U.S.

authorities had hoped but by staying longer in the U.S. once they had run the gauntlet at the border (Reyes, 2004; Riosmena, 2004; Cornelius and Lewis, 2007; Massey, Durand, and Pren, 2009; Rendall, Brownell, and Kups, 2011; Angelucci, 2012). The resulting drop in return migration has been called a “caging effect,” in which a hardened border functioned to “cage in” migrants north of the border (Rosenblum, 2012).

The combination of continued in-migration and declining out-migration sharply increased the net rate of the undocumented population growth, which surged to reach 9.4 million persons in 2001. Thereafter, the rate of growth slowed and ultimately came to a halt in 2008 when the undocumented population peaked at around 12 million persons (Wasem, 2011; Warren and Warren, 2013). Between 2008 and 2009, the number of undocumented residents fell by more than million persons, and since then, the population has hovered around 11 million. At present, around 60 percent of all undocumented residents are from Mexico and 15 percent are from Central America, with another 5 percent coming from elsewhere in Latin America and the Caribbean (Passel and Cohn, 2011). Thus, undocumented migration is mostly a regional problem of the Western Hemisphere, with Mexico and Central America constituting by far the two most important sources.

Undocumented migration from Central America began after 1979 following the U.S. government’s intervention in the Nicaraguan Contra War and its support of right-wing regimes in Guatemala, El Salvador, and Honduras. As the intervention intensified and violence grew and spread through the 1980s, undocumented migration to the U.S. rose accordingly, as unauthorized Nicaraguans, Salvadorans, Guatemalans, and Hondurans increasingly joined Mexicans north of the border (Lundquist and Massey, 2005). Although Nicaraguans, like other Central Americans, originally entered the country without authorization or overstayed tourist visas, as emigrants from a leftist regime, they were given preferential access to permanent residence.

The 1997 Nicaraguan Adjustment and Central American Relief Act (NACARA), for example, contained two sections. Section 202 applied to Nicaraguans and authorized them to apply for legal permanent residence if they had been in the U.S. since December 1, 1995, while forgiving any legal infractions related to their unauthorized entry and presence in the U.S. (Marín Abaunza, 1998). Section 203 applied to Salvadorans and Guatemalans and only authorized them to apply for a suspension of

deportation or cancelation of removal, not legal permanent residence, and Hondurans were not covered at all.

Not only were Guatemalans and Salvadorans unable to apply for legal permanent residence, even the pathway to obtain relief from removal was torturous and eligibility was limited. Guatemalans, for example, were authorized to apply for relief only if they had first entered the U.S. on or before October 1, 1990, registered for benefits with the American Baptist Churches by December 31, 1991, and not been apprehended trying to enter the country after December 19, 1990. Salvadorans could apply if they had entered the U.S. on or before September 19, 1990, registered for Baptist benefits or applied for temporary protected status by October 31, 1991, and not been apprehended trying to enter the country after December 19, 1990.

Moreover, the foregoing conditions only authorized Salvadorans and Guatemalans to *apply* for relief from threat of deportation or removal. To receive actual relief, they also had to document seven years of continuous presence in the U.S. and good moral character and in addition show that their deportation or removal would result in extreme hardship to the applicant or to a spouse, child, or parent who was a U.S. citizen or legal permanent resident. Finally to receive relief, they had to demonstrate that they deserved “a favorable exercise of discretion.” Given the stark contrast between Sections 202 and 203, Nicaraguans were easily able to transition into legal status and disappear from the undocumented population, but such a transition was out of reach for most Salvadorans and Guatemalans and, of course, all Hondurans, and migrants from these nations languished either in undocumented status or the legal limbo of temporary protected status.

It is no surprise, then, that after Mexico, the next most important source countries for unauthorized migrants are El Salvador, Guatemala, and Honduras. While the Mexican undocumented population fell from 7 million in 2008 to 6.7 million in 2012, the number of undocumented Central Americans grew from 1.3 to 1.6 million (Baker and Rytina, 2012). Government estimates suggest that as of 2010, around 55 percent of Salvadorans, 63 percent of Guatemalans, and 73 percent of Hondurans living in the U.S. in 2010 were present without authorization (Acosta and Patricia de la Cruz, 2011; Baker and Rytina, 2012). In this study, we seek to explicate the recent contrast in trends of undocumented migration from Mexico and Central America.

DATA AND METHODS

Our data come from the Mexican Migration Project (MMP) and the Latin American Migration Project (LAMP). Since 1987, the MMP has annually conducted representative surveys in communities throughout Mexico. At the time of this research, 134 communities in 20 Mexican states had been surveyed, yielding information on 22,479 households. Communities were selected to build socioeconomic, geographic, and demographic diversity into the sample over time and to include a range of urbanism, from small rural villages to neighborhoods in large urban areas. The LAMP was launched in 1998 to replicate the success of the MMP in other countries of Latin America. To date, it has undertaken surveys in eleven nations, including seven communities in Costa Rica (2000–2002), four in El Salvador (2007), three in Guatemala (2004), and nine in Nicaragua (2000–2002), together yielding information on 3,986 households from Central America.

In both projects, during their time in the field, interviewers gathered contact information on friends and family members settled in the U.S. and then used these as starting points to build network samples of migrants in U.S. destination communities, thus capturing the experience of settled households whose members no longer return home with any regularity. Interviews were guided by a semi-structured instrument that blended ethnographic and survey methods to compile comprehensive information about the household head, the spouse, all children of the head, and any additional household members. Interviews were conducted with the household head and the spouse, who provided information on other members of the family, including all children of the household head and any other person present in the household at the time of the interview. Grown children of the head who had left the household were flagged with a dummy variable to indicate that they were no longer members. Migrants in the U.S. were considered to be household members if they were expected to rejoin the family upon returning home.

The interviewers compiled basic social, economic, and demographic information about the household and its members, including data on first and most recent trips to the U.S. and legal status during the year in which the trip was made. Undocumented migrants include those who reported crossing the border without authorization and those who entered with a tourist visa but then violated its terms by working or over-staying. In

addition, each household head and spouse provided a complete history of migration, and household heads additionally answered a detailed series of questions about their history of border crossing and experiences on the most recent U.S. trip.

Here, we draw upon the life histories provided by household heads to compute probabilities of first undocumented migration. Specifically, we follow each household head year-by-year from the point of entry into the labor force to the date of the first trip or the survey. An undocumented trip is defined as a journey to the border in which entry to the U.S. was attempted or achieved. The probability of taking a first undocumented trip is computed as the number of observed first trips in year t divided by the number of people at risk of taking a first trip in that year. To compute the probability of taking an additional trip, we follow each migrant from the point of their return from one trip up to the time of their next trip or the survey date and divide the number of additional trips observed in year t by the number of migrants at risk of making an additional trip in that year. We measure the probability of return migration from all trips simply by dividing the number of migrants who returned within 12 months of entry by the total number of successful entries 12 months earlier.

We model undocumented migration as both a social and an economic process. Economically, people choose to migrate to the U.S. for diverse motives: some to maximize earnings; others to finance purchases in the absence of well-functioning markets for credit, capital, and mortgages; others to diversify sources of household income in the absence of insurance markets or government substitutes; and still others to finance retirement in the absence of access to an old-age pension system (Massey *et al.*, 1998; Sana and Massey, 2000). Socially, people also migrate to achieve family reunification, but they also draw upon and manipulate social ties to mobilize social capital, seeking access to information about U.S. markets for labor, housing, and other resources as well as assistance with the process of undocumented entry (Massey and Phillips, 1999; Palloni *et al.*, 2001). Naturally, motives for migration may change over the course of a migratory career (Piore, 1979) and different motives may dominate among migrants leaving at different points in historical time (Garip, 2012).

The independent variables we use to predict decisions about migration and return are listed in and defined in Table 1. To the extent that migration is an economic enterprise, the likelihood of departure is

TABLE 1
DEFINITION OF INDEPENDENT VARIABLES (YEAR T)

Variable	Operational Definition
Demographic Background	
Age	Age at last birthday
Female	Female dummy
Married	Respondent in formal or informal union
No. of minors in household	No. of own children under age 18
Human Capital	
Labor force experience	No. of years since first job
Education	No. of years of school completed
Cumulative U.S. experience	Total months of U.S. experience on prior trips
Number of prior U.S. trips	Number of prior U.S. trips
Documented on last trip	Migrated with documents on last U.S. trip
Origin Occupation	
Agricultural job	Agricultural occupation in home country
Unskilled job	Unskilled non-agricultural occupation in home country
Skilled job	Skilled non-agricultural occupation in home country
Social Capital	
Parent a U.S. migrant	Subject's parents was a U.S. migrant
No. of U.S. migrant siblings	No. of siblings with U.S. experience
Prop. U.S. migrants in community	Proportion over age 15 with U.S. migration experience
Spouse a U.S. migrant	Spouse has begun migrating to the United States
No. of U.S. migrant children	No. of children who have begun migrating
No. of U.S. born children	No. of children born in United States
Physical Capital	
Land	Household owns farmland
Home	Household owns home
Business	Household owns a business
U.S. Social Context	
Enforcement Index	Factor Scale
Rate of Employment Growth	Rate of U.S. Employment Growth
Legal Entries per Capita	Number of Legal Entries for Work or Residence Divided by National Populaton
Mexican Context	
Rate of Population Growth	Yearly rate of population growth
Rate of GDP Growth	Yearly rate of GDP growth
Homicide Rate	Yearly homicide rate
Central American Context	
Level of Civil Violence	Index from Proquest Historical Newspaper Series
Rate of GDP Growth	Yearly rate of GDP growth
Rate of Population Growth	Yearly rate of population growth

expected to vary in conjunction with personal characteristics that affect earning capacity. Models of migration thus typically include demographic indicators such as age, gender, marital status, and household composition as well as human capital indicators such as labor force experience, education, and occupational skill. Ownership of physical capital such as land, a home, or a business is also relevant in migrant decision-making, for these

assets may serve either as a source of money to finance a trip or as a motivation for capital accumulation and investment. Indicators of social capital generally assess ties to people with prior U.S. migratory experience, such as parents, spouses, siblings, and children, but we also include more general indicators such as the prevalence of U.S. migrants in the community.

Whatever individual and household characteristics a person displays, the likelihood of undocumented migration also depends crucially on contextual circumstances at both origin and destination. Among the most salient is labor demand in the U.S., which we measure as the annual percentage change in the number of people gainfully employed in the civilian labor force (obtained from the U.S. Bureau of Labor Statistics at <http://www.bls.gov/>). Whatever the demand for migrant labor might be, however, the supply is filtered by U.S. immigration and border policies. For instance, the probability of undocumented migration is likely to be determined, at least partially, by access to legal visas, which we measure as the annual number of legal entries for work or residence from a particular country (obtained from the U.S. Office of Immigration Statistics at <http://www.dhs.gov/immigration-statistics>) divided by that country's population (from the U.S. at <http://data.un.org/>).

As noted earlier, since 1986, the U.S. has mounted a concerted effort to apprehend unauthorized migrants at the border, and to measure this enforcement effort, we undertook a principal components analysis of annual deportations, the number of Border Patrol agents, the Border Patrol budget, and the number of linewatch hours spent by agents looking for unauthorized border crosses (compiled from various sources at the U.S. Department of Homeland Security and the archives of the Immigration and Naturalization Service). We then used the factor loadings to create a weighted average of the four separate components.

On the sending side, we focus on three conditions in each origin nation. Population pressure is measured by the annual rate of population growth (from the United Nations Population Division at <http://data.un.org/Default.aspx>), and economic opportunity is assessed using the annual percentage change in GDP expressed in constant 2005 dollars (from the U.S. Department of Agriculture's Economic Research Service (<http://www.ers.usda.gov/data-products/international-macro-economic-data-set.aspx>)). Finally, we consider civil violence as a potential driver of migration from both Mexico and Central America, although

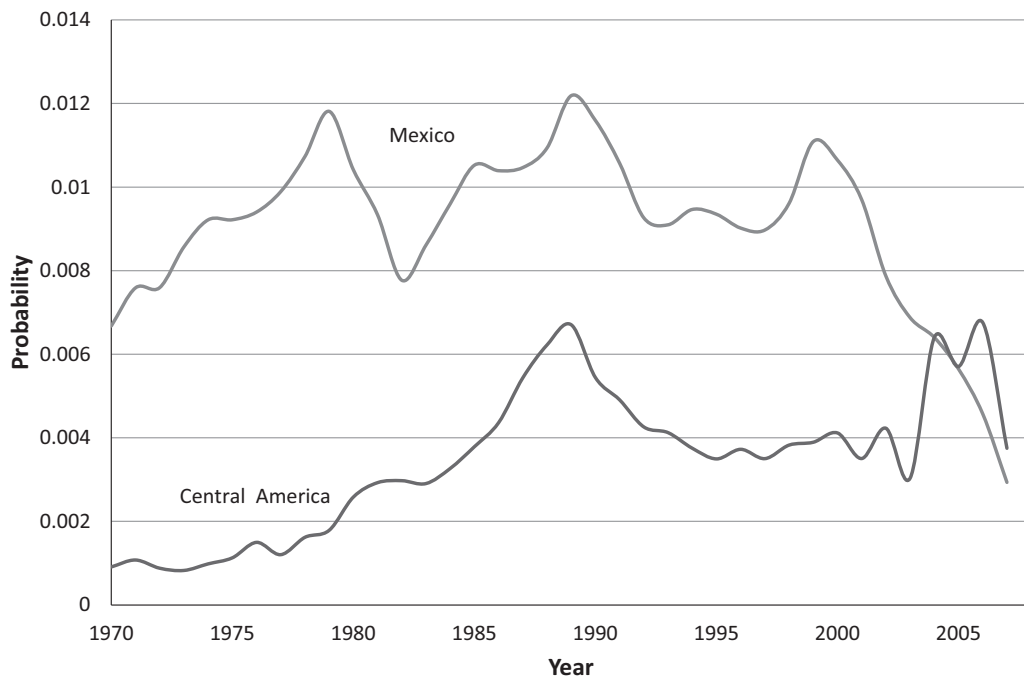
owing to data constraints we use different measures to capture trends in the two regions.

In Mexico, we measure shifting levels of violence by simply including the homicide rate per 100,000 persons (*see* <<http://www.mexicomaxico.org/Voto/Homicidios100M.htm>>).

When President Felipe Calderón came into office in December of 2006 in a disputed election, he sought to assert his authority by launching a direct assault on Mexico's well-armed drug cartels, mobilizing the military to carry out operations against drug kingpins, raid their hideouts, and occupy their staging areas. Rather than slowing down the trafficking of drugs, however, the assault spurred an upsurge in civil violence as the cartels fought back against the police and the military. With bystanders increasingly caught in the cross fire, the end result was a rapid increase in the murder rate.

As already noted, Central America has its own history of civil violence tied to politics and ideology, with a rising tide of genocidal massacres, guerilla insurgencies, paramilitary executions, and open warfare observed during the U.S. intervention of the 1980s. Although homicide records are incomplete and exact statistics on the number of deaths do not exist, the United Nations Office on Drugs and Crime (2007) estimates that total deaths from political violence during the 1980s exceeded 335,000. Lacking access to reliable death statistics, we followed the example of Lundquist and Massey (2005) to capture trends in violence using the Proquest Historical Newspaper Database to conduct a search for newspaper articles that contained the words "war," "killing," or "death" plus the name of the country in question. This operation generated an annual frequency count for each country that we use to indicate the rise and fall of political violence in the region.

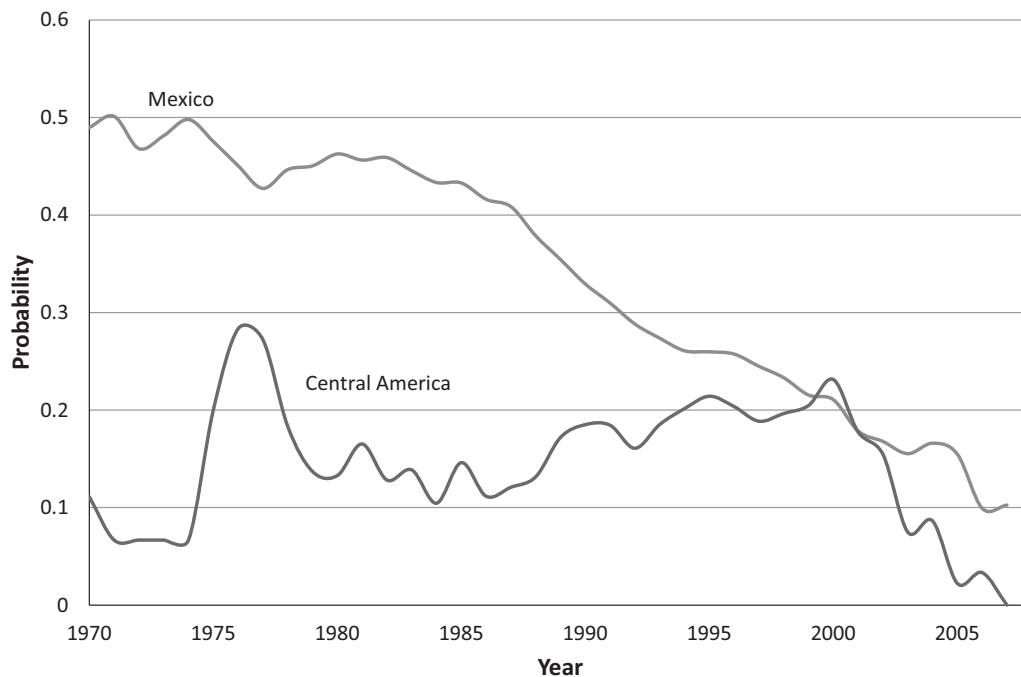
Figure I shows the Mexican homicide rate and the Central American frequency counts, with each series divided by its maximum value to put them on a comparable scale. As can be seen, civil violence in Mexico was quite high historically but then fell steadily through the 1990s and early 2000s before surging upward after President Calderón launched his attack on the drug cartels in 2006. In contrast, our indicator of political violence in Central America was quite low through the 1970s but surged upward between 1979 and 1989 before dropping again to the low levels observed before the Contra Wars of the 1980s. Thus, both series correspond to a priori notions about trends in violence within the regions.

Figure I. Probability of Taking a First Undocumented Trip to the U.S.

TRENDS IN UNAUTHORIZED DEPARTURE AND RETURN

Figure II shows the annual probability of initiating undocumented migration from Mexico and Central America from 1970 through 2007. As can be seen, the likelihood of taking a first undocumented trip was rising rapidly when we pick up the trend in 1970, but as discussed earlier, the increase peaked in 1979 by which time the historical legal inflow of the 1950s had been reestablished under undocumented auspices (Massey and Pren, 2012). Thereafter, the likelihood of taking a first undocumented trip fell during Mexico's oil boom of 1980–1982 but rose again during Mexico's economic crisis in the 1980s before declining a bit during the early 1990s U.S. recession. It then climbed upward once again during the U.S. boom of the “roaring nineties” to reach another localized peak in 1999, after which the likelihood fell steadily to reach the lowest level seen in decades by the end of the 2000s. These trends are consistent with trends derived from official statistics by Massey and Pren (2012) and aggregate estimates of undocumented population growth done by the Pew Hispanic Center (Passel and Cohn, 2011), the U.S. Department of Homeland Security (Baker and Rygina, 2012), and Warren and Warren (2013).

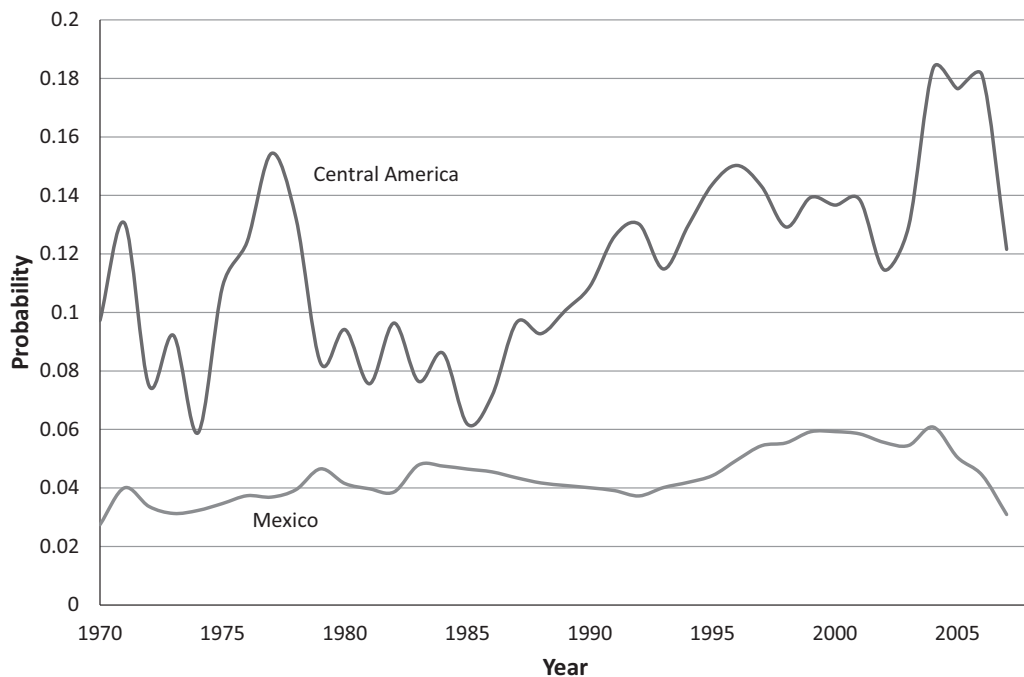
Figure II. Probability of Returning from a First Undocumented U.S. Trip within 12 months



The initiation of undocumented migration from Central America follows a very different trajectory, with the probability of taking a first undocumented trip being quite low for most of the 1970s before rising rapidly in the late 1970s when the Sandinista's came to power in Nicaragua and then accelerating again with the U.S. Contra intervention of the 1980s. The probability peaks in 1989, shortly after the signing of the Central American Peace Accords and falls during the subsequent winding down of political violence in the region. Although the probability dropped through the 1990s and early 2000s, however, it never returned to the status quo ante.

This absence of a return to baseline is what we would expect given that mass emigration during the 1980s inevitably generated social networks connecting migrants in the U.S. to friends and relatives who remained at home. It is difficult to interpret the meaning of fluctuations at the end of the time series given the small number of cases and the fact that all these cases come from El Salvador. In general, we conclude that the odds of initiating undocumented migration to the U.S. rose during the period of violence in the 1980s and then fell as the region calmed down in the 1990s but never returned to the low levels observed in the early 1970s.

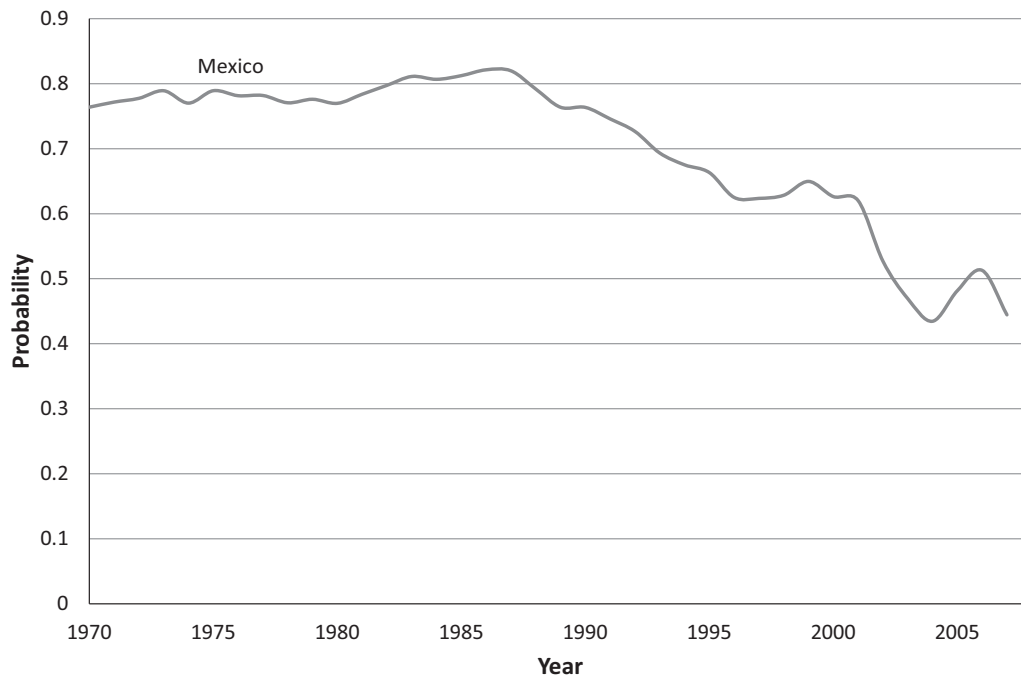
Figure III. Probability of Taking an Additional Undocumented Trip to the U.S.



Undocumented population growth depends not only on the propensity of migrants to enter the U.S. but also on their tendency to return. As noted earlier, Mexican migration to the U.S. historically was highly circular, and we see clear evidence of this fact in Figure III, which shows the probability of returning home within 12 months of entering on a first undocumented trip. In the early 1970s, the likelihood of returning within a year was about 0.50, and it remained above 0.40 through 1985 when it began to decline very rapidly to reach a figure of just 0.10 in 2007. As already noted, it was the rapid decline in return migration rather than any surge in new undocumented migration that produced the explosion in the number of undocumented migrants living north of the border.

Once again, the time trend for Central American migration is entirely different. During the 1970s, when the likelihood of taking a first undocumented trip was low, the probability of returning quickly from a first trip was high, suggesting the beginnings of a circulatory migration system. After peaking in 1976, however, the likelihood of return migration fell sharply and remained low from 1979 through 1989, the years of greatest political violence. Although the probability of return increased somewhat in the wake of the Peace Accords, after 2000, it declined rapidly to reach zero by 2007, when gang violence rose to replace the

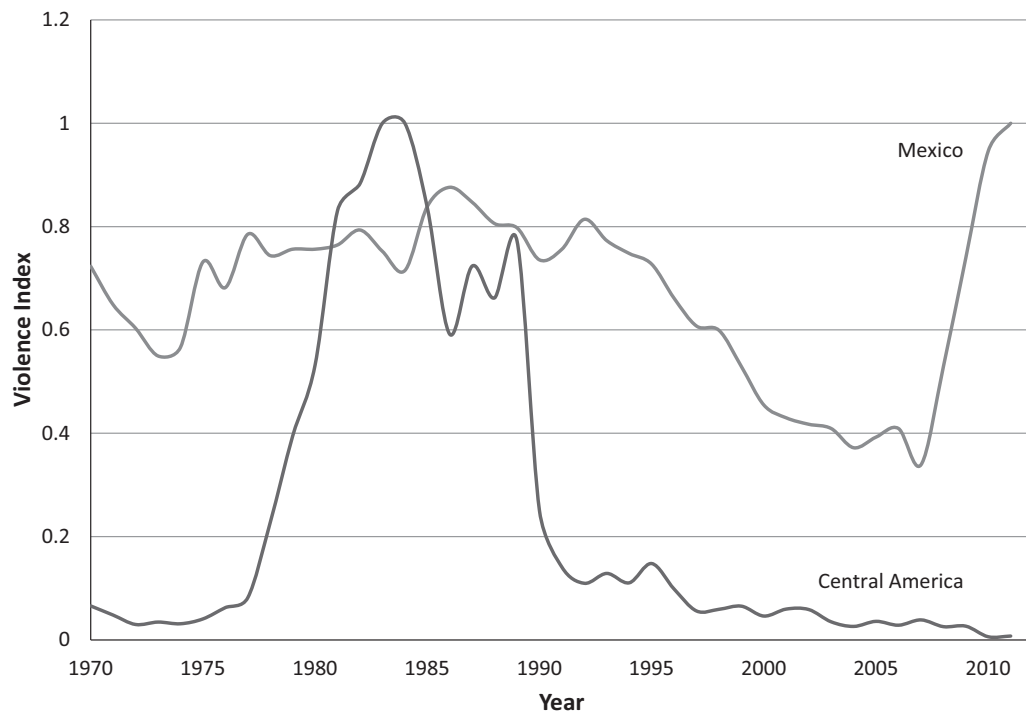
Figure IV. Probability of Returning from an Additional Undocumented U.S. Trip within 12 months



political violence of earlier times. Undocumented migration from Central America never really had a chance to develop into a circulatory system, and during the peak years of departure in the 1980s, the likelihood of returning within 12 months was quite low, as one would expect for a war-torn and violent region.

Figure IV draws on life histories provided by household heads to compute the probability of taking an additional undocumented trip given at least one prior trip to the U.S. In general, the probability of taking an additional trip is much higher than the probability of taking a first trip. This outcome is expected because social connections and personal experiences accumulated by migrants on prior trips greatly facilitate the taking subsequent trips, and with each trip taken, the probability of taking another one steadily rises (Massey 1986). In Mexico, for example, the annual probability of taking a first trip never exceeded 0.012, but the annual probability of taking an additional trip ranges from 0.03 to 0.06.

Whereas the likelihood of first undocumented migration was much higher among Mexicans than Central Americans, this order was reversed for the probability of migrating again. Although the sample size is much smaller and the time series more variable than in Mexico, we see that

Figure V. Trends in Civil Violence within Mexico and Central America

within Central America, a relatively high likelihood of taking an additional undocumented trip prevailed during the 1970s, followed by a reduction during the violent years of 1980s, and thereafter a steady increase to reach a peak of around 0.18 during 2004–2006. Thus, despite the massive increase in border enforcement during the 1990s and early 2000s, the likelihood of taking an additional undocumented steadily rose in both Mexico and Central America.

Figure V completes our analysis by showing the probability of returning from an additional undocumented trip within 12 months of entry. The number of additional trips taken by Central Americans was too small to sustain reliable analysis across years (averaging just 3.8 trips per year), so we focused exclusively on Mexico. As with the first undocumented trip, the likelihood of returning from an additional trip remains high through the mid-1980s and then experiences a sustained decline. As repeat migrants are people who have established a pattern of circulation, the probability of returning home was extremely high historically, fluctuating around 0.80 through the 1980s. In the face of massive border enforcement, however, even experienced border crossers progressively gave up return trips, and in 2003, the probability of return dipped below 0.50

for the first time. With repeat migrants displaying a probability of return below 50 percent and new migrants around 10 percent, the circularity of undocumented migration between Mexico and the U.S. was substantially curtailed.

MODELING MIGRANT DECISION-MAKING

To estimate the model predicting first undocumented trips, we selected all person-years lived in 1970 or later and followed each household head from the age of labor force entry up to the date of the survey or the first unauthorized trip. All independent variables are time varying except gender, education, and community size. Gender is fixed, of course, and in practical terms, education does not change after people enter the labor force. Community size is measured in the survey year, and although populations do change over time, there is little movement between broad categories of urbanism. Table 2 shows means and standard deviations across person-years to reveal that, compared to migrants from Mexico, those from Central America are older (aged 31.5 versus 25.5 in the average person-year), more likely to be female (17% versus 5%), and more often married (75% versus 52%). Central American migrants also have more labor force experience (17.6 versus 11.9 years), display higher levels of education (10.4 versus 6.1 years), are much less likely to hold agricultural occupations (6% versus 40%), and much more likely to be skilled workers (40% versus 9%). Consistent with this contrast, Central Americans are also more likely to be business owners (24% versus 6%) and home owners (46% versus 28%) than Mexicans.

These contrasts are consistent with the hypothesis that Mexicans generally begin migrating as workers seeking low-wage jobs in the U.S., whereas Central Americans initially depart as refugees seeking to escape the political violence and economic turmoil that followed the American intervention of the 1980s. Unsurprisingly, stocks of migration-related human and social capital are larger in Mexico than in Central America given its longer history of migration to the U.S. Whereas the average Mexican migrant evinced 45 months of U.S. experience accumulated across an average of 4.7 trips, the average Central American migrant had accumulated just 26 months over 1.2 trips. Likewise, whereas 19 percent of Mexicans reported having a migrant parent, the figure was just 10 percent for Central Americans, and while the average prevalence of U.S. migrants in the sending community was 19 percent for Mexicans, it was

TABLE 2
MEANS AND STANDARD DEVIATIONS OF INDEPENDENT VARIABLES

	Mexico		Central America	
	Mean	SD	Mean	SD
Demographic Background				
Age	25.5	9.6	31.5	9.8
Female	0.0466	0.2110	0.1743	0.3811
Married	0.5182	0.4997	0.7522	0.4336
No. of minors in household	1.4	2.0	1.6	1.8
Human Capital				
Labor force experience	11.9	9.8	17.6	9.7
Education	6.1	3.7	10.4	4.2
Cumulative U.S. experience	44.84	46.84	26.40	26.1
Number of prior U.S. trips	4.7	5.5	1.2	0.51
Documented on last trip	0.5138	0.4998	0.8696	0.3443
Origin Occupation				
Agricultural job	0.3971	0.4893	0.0642	0.2462
Unskilled job	0.3916	0.4881	0.3577	0.4815
Skilled job	0.0874	0.2825	0.4036	0.4928
Social Capital				
Parent a U.S. migrant	0.1859	0.3890	0.1009	0.3026
No. of U.S. migrant siblings	0.6	1.2	0.8	1.3
Prop. U.S. migrants in community	18.9	12.9	7.2	5.5
Spouse a U.S. migrant	0.0384	0.1923	0.0813	0.275
No. of U.S. migrant children	0.06	0.40	0.02	0.13
No. of U.S. born children	0.00	0.06	0.00	0.00
Physical Capital				
Land	0.0792	0.2700	0.0550	0.2291
Home	0.2775	0.4478	0.4587	0.5005
Business	0.0602	0.2379	0.2385	0.4281
U.S. Context				
Enforcement Index	1125.58	1036.44	1273.48	971.26
Rate of Employment Growth	1.97	1.42	1.99	1.02
Residence/Work Visas per Capita	1.92	2.10	1.51	1.12
Origin Nation Context				
Rate of Population Growth	2.43	1.22	3.36	0.55
Rate of GDP Growth	1.91	3.59	-3.23	6.05
Violence Indicator	17.28	2.58	418.33	321.09
Total number of person-years	102,563		35,062	

just 7 percent for Central Americans. Central Americans, however, were more likely to have a migrant spouse, suggesting that they more often depart as couples; in contrast to Mexican migrants were are more typically solo males leaving spouses and children behind as they commute for work in the U.S. (Cerrutti and Massey, 2001).

First Undocumented Departure

Table 3 presents models estimated to predict the likelihood of leaving on a first undocumented trip from Mexico and Central America to the U.S.

TABLE 3
DISCRETE TIME EVENT HISTORY ANALYSIS PREDICTING LIKELIHOOD OF TAKING A FIRST U.S. TRIP

Independent Variables (year=t)	Mexico: Took First Undocumented Trip (year=t 1)		Central America: Took First Undocumented Trip (year=t 1)	
	β	SE	β	SE
Demographic Background				
Age	0.1078***	0.0143	0.1340	0.0901
Age-squared	-0.0023***	0.0002	-0.0016*	0.0009
Female	-0.4889***	0.1370	0.4425	0.6076
Married	-0.2353**	0.0839	0.4529	0.3415
No. of minors in household	-0.0570**	0.0187	-0.1684*	0.8970
Human Capital				
Labor force experience	-0.0057	0.0058	-0.0406	0.0715
Education	-0.0269**	0.0088	0.0626**	0.0268
Origin Occupation				
Agricultural	—	—	—	—
Unskilled	0.5417***	0.0689	0.5886*	0.3481
Skilled	0.1053	0.1247	0.7798**	0.3531
Social Capital				
Parent a U.S. migrant	0.3377***	0.0709	0.8374*	0.4456
No. of U.S. migrant siblings	0.0846***	0.0248	0.4370***	0.0803
Prop. U.S. migrants in community	0.0188***	0.0028	0.0251	0.0226
Spouse a U.S. migrant	-0.4511**	0.1673	0.9805*	0.5254
No. of U.S. migrant children	0.1477**	0.0562	-0.9192	0.6234
No. of U.S. born children	-1.4572***	0.3523	—	—
Physical Capital				
Land	0.1534	0.1269	-0.2084	0.4731
Home	-0.3589***	0.0812	0.3060	0.2529
Business	-0.2980**	0.1095	0.4688*	0.2687
U.S. Context				
Enforcement Index	0.0000	0.0004	-0.0004	0.0001
Rate of Employment Growth	0.1148***	0.0234	0.1559	0.1184
Residence/Work Visas per Capita	-0.0240	0.0330	0.0804	0.1434
Origin Country Context				
Rate of Population Growth	0.0130	0.0699	-0.1882	0.3086
Rate of GDP Growth	0.0107	0.0097	0.0071	0.0210
Civil Violence	0.0081	0.0352	0.0027***	0.0005
Country of Origin				
Nicaragua	—	—	—	—
Costa Rica	—	—	0.5759*	0.3223
El Salvador	—	—	0.0477	0.4286
Guatemala	—	—	0.0276	0.3946
Intercept	-5.7142***	0.8435	-10.4526***	1.7502
Likelihood Ratio	1103.9308***		161.4564***	
Wald	672.5451***		156.3301***	
Total number of person-years		102,563		35,062

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.001$.

In these models, we follow household heads from the point of entry into the labor force up to the date of the first trip or year of survey and use logistic regression to predict migration in year $t + 1$ from independent

variables defined in year t , thus yielding a lagged discrete time event history model. We prefer discrete time models to hazard models because they do not require assumptions about functional form and instead let the data define the shape of the likelihood functions over time and in response to independent variables. It has long been the preferred strategy for modeling life history data from the MMP (*see* Massey *et al.*, 1987; Massey and Espinosa, 1997; Massey and Riosmena, 2010).

In Mexico, the likelihood of initiating undocumented migration displays the expected curvilinear relationship with age, rising through the young adult years before declining with advancing age. The odds of undocumented migration are lower for women and married respondents and fall as the number of minors in the household increases. In terms of human capital, Mexican undocumented migrants to the U.S. are negatively selected with respect to education and come disproportionately from the ranks of unskilled manual workers, which is expected given that the returns to human capital are low for persons without documents (*see* Taylor, 1987). Home and business owners are generally less likely to initiate migration, and as other studies have found, the initiation of undocumented migration is strongly predicted by access to social capital, being greater for those having a parent with U.S. experience and rising as the number of migrant siblings, migrant children, and the share of migrants in the community grow (Massey *et al.*, 1987; Massey and Espinosa, 1997; Palloni *et al.*, 2001). Undocumented out-migration is negatively predicted by having a migrant spouse, however, and falls as the number of U.S.-born children increases.

Turning to the contextual indicators, only one indicator is significant: the rate of U.S. employment growth. The very strong and highly significant coefficient suggests that the initiation of undocumented migration from Mexico is driven primarily by the pull of U.S. labor demand. Consistent with our opening narrative, the enforcement index has no effect at all on the likelihood of taking a first undocumented trip, indicating the absence of a significant deterrent effect. Although our indicator of access to legal visas carries the expected negative sign, the effect is not significant statistically. On the Mexican side, the initiation of undocumented migration does not appear to be significantly connected to demographic pressure, national economic performance, or variations in the rate of homicide. Thus, the rising tide of violence since 2006 has not played a meaningful role in *initiating* new undocumented migration to the U.S., which is instead driven primarily by U.S. labor demand.

Within Central America, in contrast, the indicator of civil violence has a very strong effect in promoting initial undocumented trips to the U.S., whereas U.S. labor demand has no effect at all. The process by which migration to the U.S. was initiated in Central America also displays other salient differences compared with Mexico. For example, the probability of initiating undocumented migration is not selective with respect to gender, marital status, or age. In addition, fewer social capital indicators are significant in predicting out-migration, and the levels of significance are generally lower. Moreover, whereas having a migrant spouse deterred the initiation of undocumented migration from Mexico, it promoted it in Central America. Finally, the likelihood of taking a first undocumented trip from Central America is *positively* related to education, occupational skill, and business ownership, not negatively related as in Mexico.

In sum, as one would expect from people fleeing political violence and economic disorder, initial departures from Central America were much less selective with respect to demographic characteristics and social capital compared with Mexican labor migrants, but more selective with respect to human and physical capital. Faced with imminent danger, everyone who can leave does so and those with access to human and physical capital draw on these assets to escape. Among contextual factors, only violence had a detectable effect on the odds of taking a first undocumented trip, suggesting that it is the push of disorder and violence in the region that promoted migration from the region not faltering economic growth or demographic pressure or the pull of jobs in the U.S. Once again, the effect of the enforcement index is virtually nil.

First Undocumented Return

Table 4 presents logistic regression models estimated to predict the likelihood of returning from the first undocumented trip within 12 months of entry. In this case, both independent and dependent variables are measured in year t . Recall from Figure III that circular migration between Mexico and the U.S. was the norm before the militarization of the border during the late 1980s and 1990s, but that return migration was *never* very common in Central America, especially during the period of greatest instability and violence. Thus, the likelihood of returning home to Central America is only weakly related to individual and contextual factors compared with Mexico. The very large negative intercept indicates that

TABLE 4
LOGISTIC REGRESSION MODELS PREDICTING THE LIKELIHOOD OF RETURNING FROM FIRST TRIP

Independent Variables (year=t)	Mexico: Return Home from first trip within 12 months (year = t 1)		Central America: Return Home from first trip within 12 months (year = t 1)	
	β	SE	β	SE
Demographic Background				
Age	0.0567**	0.0222	0.5802**	0.1022
Age-squared	-0.0015***	0.0003	-0.0053*	0.0009
Female	-0.2402	0.2065	-0.5684	0.5561
Married	0.4712***	0.1261	-0.3228	0.4609
No. of minors in household	-0.0310	0.0257	-0.1230	0.1041
Human Capital				
Labor force experience	-0.0085	0.0076	-0.2212**	0.0737
Education	-0.0650***	0.0142	0.0381	0.0340
Origin Occupation				
Agricultural job	—	—	—	—
Unskilled job	2.9202***	0.1030	—	—
Skilled job	2.3772***	0.3336	—	—
Social Capital				
Parent a U.S. migrant	0.1045	0.1090	1.1218	0.5057
No. of U.S. migrant siblings	-0.1643***	0.0383	-0.1022	0.1136
Prop. U.S. migrants in community	0.0205***	0.0043	0.0560	0.0243
Spouse a U.S. migrant	-2.1752***	0.2416	—	—
No. of U.S. migrant children	0.1211*	0.0708	—	—
No. of U.S. born children	—	—	—	—
Physical Capital				
Land	-0.2608	0.1995	0.7703	0.7504
Home	-0.2608**	0.1119	1.2789*	0.3163
Business	0.2712*	0.1449	0.1873	0.3209
U.S. Social Context				
Enforcement Index	-0.0015**	0.0007	0.0001	0.0015
Rate of Employment Growth	0.0200	0.0352	0.0737	0.1408
Residence/Work Visas per Capita	-0.0304	0.0519	0.0046	0.1449
Mexican Context				
Rate of Population Growth	-0.2452**	0.1163	-0.0001	0.0006
Rate of GDP Growth	0.0603***	0.0144	-0.0208	0.0242
Homicide Rate	0.0341	0.0566	0.3799	0.3532
Country of Origin				
Nicaragua	—	—	—	—
Costa Rica	—	—	1.4899	0.3879
El Salvador	—	—	-2.0598*	0.4941
Guatemala	—	—	0.9329	0.3975
Intercept	-4.9530***	1.3691	-20.5262***	4.6138
Likelihood Ratio	1062.8990***		34.2562*	
Wald	1141.3442***		27.7807	
Total number of person-years		102,514		56,695

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.001$.

the underlying probability of returning to Central America is much, much lower than the likelihood of returning to Mexico, especially in El Salvador where gang violence has risen to replace the political violence of the

1980s. The odds of returning to Central America are boosted by home ownership and rising age and they fall with rising labor force experience, but they are totally unconnected to contextual circumstances at either origin or destination.

In contrast, return migration from Mexico is strongly predicted by contextual circumstances on both sides of the border. Although border enforcement had no significant effect in deterring the initiation of undocumented migration, it strongly and significantly reduces the likelihood that migrants on their first undocumented trip will go back to Mexico. Return migration is strongly promoted by GDP growth in Mexico but discouraged by rapid population growth. In other words, Mexicans tend to return home when the economy is growing rapidly but the labor force is not. The likelihood of return migration is curvilinear with respect to age and is greater for those who are married, hold non-agrarian jobs, have migrant children, originate in communities with a high prevalence of migrants, and own businesses. Return migration is less likely for well-educated people who have migrant siblings and spouses, and somewhat surprisingly, homeowners. The plethora of significant effects nonetheless suggests the existence of a systematic process of return migration in Mexico that has never really existed for Central America, although the rapid rise in the U.S. enforcement effort has significantly diminished the odds of returning to Mexico in recent years.

Additional Undocumented Departures

Table 5 shows event history models estimated to predict the likelihood of taking an additional trip to the U.S. without documents. Although homicide had no apparent effect on the initiation of undocumented migration from Mexico, it does have a strong effect in *perpetuating* migration once it has begun. Each point increase in the homicide rate increases the odds of taking an additional undocumented trip by around 14 percent, a highly significant effect. Within Mexico, the likelihood of taking an additional trip also rises significantly as population growth increases but declines as the rate of GDP growth increases. Although initial departure was not tied to economic or demographic conditions in Mexico, repeat migration is significantly connected to these factors. As one would expect, experienced migrants decide to leave again during periods when demographic growth is rapid and economic expansion is slow.

Despite the greater role of contextual circumstances in Mexico, the likelihood of additional migration continues to be connected to labor

TABLE 5
DISCRETE TIME EVENT HISTORY ANALYSIS PREDICTING LIKELIHOOD OF ADDITIONAL UNDOCUMENTED
MIGRATION

	Mexico: Additional Undocumented Trip (year=t 1)		Central America: Additional Undocumented Trip (year=t 1)	
	β	SE	β	SE
Demographic Background				
Age	0.1747***	0.0137	0.3418	0.3326
Age-squared	-0.0028***	0.0001	-0.0055	0.0035
Female	-1.1394***	0.1507	1.2712	1.1077
Married	0.0506	0.0730	1.4467	1.1652
No. of minors in household	-0.0169	0.0122	-0.1099	0.2062
Human Capital				
Labor force experience	0.0042	0.0052	0.0807	0.2095
Education	-0.0068	0.0076	0.0927	0.0664
Cumulative U.S. experience (months)	0.0005	0.0007	-0.0308**	0.0123
No of previous U.S. trips	0.0937***	0.0073	2.7408***	0.4686
Documented on last trip	-3.2323***	0.0501	0.8487	1.0097
Origin Occupation				
Agricultural	—	—	—	—
Unskilled	-0.9665	0.0656	0.0050	0.7690
Skilled	-1.1848***	0.1320	-0.1480	0.7322
Social Capital				
Parent a U.S. migrant	0.1597**	0.0556	2.9817***	0.8373
No. of U.S. migrant siblings	0.0668***	0.0166	-0.1332	0.2314
Prop. U.S. migrants in community	0.0201***	0.0021	0.0925**	0.0421
Spouse a U.S. migrant	-0.4796***	0.0904	-1.9394**	1.0267
No. of U.S. migrant children	-0.0227	0.0284	0.2380	0.5298
No. of U.S. born children	-0.5505***	0.0983	—	—
Physical Capital				
Land	-0.3168***	0.0890	0.2250	0.8596
Home	-0.0163	0.0558	-1.5051**	0.6341
Business	-0.1059	0.0779	0.5627	0.5994
U.S. Social Context				
Enforcement Index	-0.0008**	0.0003	-0.0003	0.0004
Rate of Employment Growth	0.0818***	0.0186	0.3585	0.3384
Residence/Work Visas per Capita	-0.0113	0.0270	0.3482	0.2486
Mexican Context				
Rate of Population Growth	0.1793***	0.0566	-0.0013	0.0015
Rate of GDP Growth	-0.0149**	0.0072	0.0735	0.0799
Homicide Rate	0.1329***	0.0284	0.3388	0.7025
Country of Origin				
Nicaragua	—	—	—	—
Costa Rica	—	—	0.7089	0.8129
El Salvador	—	—	—	—
Guatemala	—	—	—	—
Intercept	-9.2806***	0.6913	-19.2098***	5.8258
Likelihood Ratio	9092.0706***	—	133.4553***	—
Wald	7363.8751***	—	121.0645***	—
Total number of person-years	99,260		35,062	

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.001$.

demand, and border enforcement comes to have significant negative effect, although it is relatively small in substantive terms. The probability of taking an additional trip continues to be lower for women and displays a curvilinear relationship with respect to age. The likelihood of migrating again also rises steadily with the number of prior trips and is greater for those having migrant parents and migrant siblings but lower for those with migrant spouses and U.S.-born children. The odds of additional migration rise as the share of migrants in the community grows but they are lower for skilled and unskilled workers compared with those employed in agriculture, except those who are land owners.

The right-hand columns repeat the analysis for Central Americans substituting in the proxy measure of political violence for the homicide rate used in Mexico. Despite its predominant role in initiating undocumented migration, violence in the region plays no role in its perpetuation over time. As with first trips, once undocumented migration from Central America has been initiated, the likelihood of taking an additional trip is relatively unsystematic, with the exception of social capital. Once again, repeat migrants are not selected demographically, but unlike new undocumented migrants, they are also not selected with respect to education, skill, or business ownership. The main predictors are having a migrant parent, having a large number of prior trips, and coming from a community with a high percentage of migrants. The main deterrents are home ownership and having a U.S. migrant spouse. As on the first trip, there is no evidence that Central Americans responded in any significant way either to rising U.S. border enforcement or fluctuating U.S. labor demand in deciding whether to migrate again. This decision is determined mainly by the presence or absence of family connections to other U.S. migrants.

Additional Undocumented Returns

Finally, Table 6 shows the results of a logistic regression model estimated to predict the likelihood of returning to Mexico from an additional undocumented trip. The numbers of additional migrants and returns were too small to sustain reliable estimation in the case of Central America. Once again, the enforcement index has a negative effect on the likelihood of return migration to Mexico, underscoring again the perverse effect of U.S. immigration and border policies in discouraging return migration rather than deterring undocumented entry. Unlike returns from first trips, however, those from additional trips are not connected to economic or

TABLE 6
LOGISTIC REGRESSION PREDICTING LIKELIHOOD OF RETURN FROM ADDITIONAL U.S. TRIP

Independent Variables (year=t)	Mexico: Additional Return Home within 12 months of a trip (year=t 1)	
	β	SE
Demographic Background		
Age	0.1208***	0.0245
Age-squared	-0.0022***	0.0003
Female	-1.5209***	0.3272
Married	0.4851***	0.1370
No. of minors in household	-0.0139	0.0193
Human Capital		
Labor force experience	0.0256**	0.0103
Education	-0.0819***	0.0141
Cumulative U.S. experience (months)	-0.0177***	0.0018
No. of previous U.S. trips	0.1787***	0.0141
Origin Occupation		
Agricultural job	—	—
Unskilled job	2.9988***	0.0979
Skilled job	2.1963***	0.4291
Social Capital		
Parent a U.S. migrant	0.1780*	0.0956
No. of U.S. migrant siblings	0.0347	0.0289
Prop. U.S. migrants in community	0.0334***	0.0036
Spouse a U.S. migrant	-1.0715***	0.1874
No. of U.S. migrant children	0.0690	0.0450
No. of U.S. born children	-1.5061***	0.3719
Physical Capital		
Land	0.1325	0.1302
Home	0.1035	0.0922
Business	-0.0686	0.1246
U.S. Social Context		
Enforcement Index	-0.0019**	0.0007
Rate of Employment Growth	0.0388	0.0325
Residence/Work Visas per Capita	-0.0261	0.0474
Mexican Context		
Rate of Population Growth	-0.0533	0.1013
Rate of GDP Growth	0.0134	0.0124
Homicide Rate	0.1501**	0.0503
Intercept	-9.2598***	1.2221
Likelihood Ratio	1673.9221***	
Wald	1774.1944***	
Total number of person-years		98,616

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.001$.

demographic conditions in Mexico, although they are positively predicted by the homicide rate. Perhaps, those migrants who have established a pattern of circular migration are more likely to return home to look after family members and protect property during periods of greater political violence.

Rather than contextual factors, the decision to return to Mexico from additional U.S. trips seems to be governed primarily by individual and family circumstances. Returning home from an additional undocumented trip is once again curvilinear with respect to age and greater for married individuals, but in contrast to first trips, females are significantly less likely than males to return from additional trips. The likelihood of return falls with rising education and experience in the U.S., but is positively predicted by labor force experience and the number of prior trips. Those with non-agricultural backgrounds in Mexico are also more likely to return, as are those with a migrant parent and coming from a community with a high prevalence of U.S. migrants. As one would expect, having a migrant spouse and U.S.-born children sharply reduces the likelihood of returning from an additional trip. Once family reunification has been achieved and births begin to occur north of the border, a return to Mexico becomes quite unlikely, despite a lack of legal status in the U.S.

CONCLUSION

The foregoing analysis suggests that the initiation of undocumented migration to the U.S. from Mexico was driven largely by U.S. labor demand and by the existence of well-developed migrant networks that provided migrants with access to U.S. labor markets despite a rising enforcement effort. The taking of additional trips is likewise tied to U.S. labor demand and access to migrant networks, as well as the number of U.S. trips a migrant has accumulated over his or her career. Unlike first undocumented trips, however, additional trips are also tied strongly to circumstances in Mexico, declining in response to Mexican economic growth and increasing during periods of rising population pressure and increasing violence.

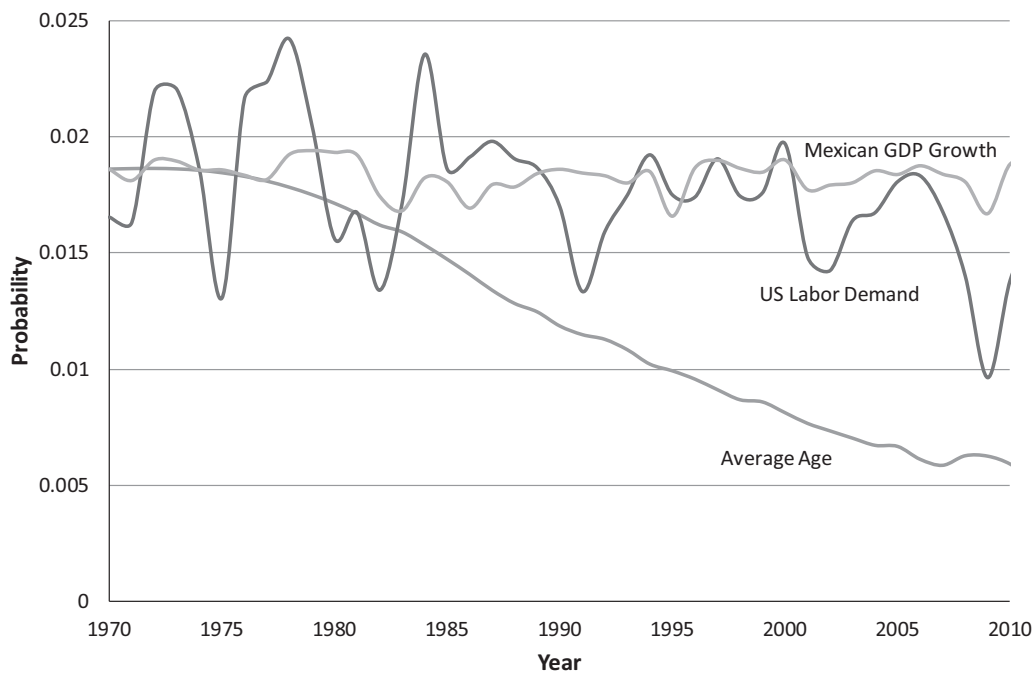
Perhaps most importantly, we found that the exponential increase in U.S. enforcement had no effect at all the odds of taking a first undocumented trip and only a modest effect in deterring additional undocumented departures, but that enforcement has strong and significant effects in deterring migrants from returning to Mexico once entry has been achieved, thereby accounting for the rapid growth of the undocumented Mexican population during the 1990s and early 2000s. Nonetheless, aggregate estimates suggest that undocumented Mexican migration has, in fact, declined since 2008 and now fluctuates around a net of zero. In keep with these aggregate estimates, first departure probabilities computed from

the MMP's individual life history data indicate a steady decline in undocumented migration since 2000 and a drop toward zero after 2008. If border enforcement did not cause the decline in undocumented departures from Mexico, what did?

To answer that question, we turn to our model and use it to generate predicted probabilities of migration from three variables, in turn, while holding all other variables' constant at their mean values. The three variables are annual employment growth in the U.S. (indicating labor demand north of the border), annual GDP growth in Mexico (indicating economic opportunity south of the border), and the average age of household heads in our sample who are at risk of taking a first undocumented trip – that is, those that in the labor force but have not yet been to the U.S. (indicating the demographic potential for emigration). The results of the exercise are shown in Figure VI.

As can be seen, economic conditions on both sides of the border predict continued migration through 2010 and likely into the future. Even though a drop in the probability of first undocumented migration after 2008 is clearly predicted by the drop in U.S. labor demand during

Figure VI. Probability of Taking a First Undocumented Trip Predicted by Trends in U.S. Labor Demand, Mexican GDP Growth, and Average Age of Never-Migrants



the Great Recession, after 2009, the likelihood of undocumented migration was predicted to go back up, which did not happen. Moreover, although fluctuations in the Mexican economy push the predicted probability of undocumented migration up and down over time, there is no clear trend in either direction. In general, then, economic conditions on both sides of the border have consistently fluctuated to increase or decrease the odds of initiating undocumented migration over the past four decades, but at no point did the economic incentives for unauthorized departure disappear.

Instead, the marked decline in the probability of first undocumented migration appears to be attributable entirely to the rising average age among household heads at risk of taking a first undocumented trip. According to MMP data, the average age of persons who had entered the labor force but who had not yet migrated to the U.S. rose from 22.5 in 1970 to 45.9 in 2010. This dramatic increase in average age stems from two complementary demographic dynamics: the sharp drop in Mexican childbearing from a total fertility rate of 7.3 children per woman in 1960 to a value of 2.3 today and the steady selection of young men out of the population at risk of taking a first trip by migration itself. As Hanson and McIntosh (2009) note, the seeds for diminished rates of undocumented migration were sown by changes in fertility that began four decades ago. As cohorts entering the labor force ages shrank after the mid-1990s and younger persons entering the labor force were steadily siphoned off into the U.S., the average age of the pool remaining behind steadily and rapidly rose.

In the end, our results suggest that recent declines in the likelihood of undocumented migration had little or nothing to do with border enforcement, but were mainly attributable to Mexico's changing demography. The U.S. thus spent \$35 billion in constant dollars on border enforcement between 1970 and 2010 in a vain effort to bring about a decline in undocumented migration that was already built into Mexico's demography. A simple waste of taxpayers' money would have been bad enough, but our analysis also implies that the billions spent on border enforcement actually served to *increase*, not decrease, the size of the undocumented population by driving down rates of return migration. Thus, money spent on border enforcement was not only wasted, it was counterproductive.

Given demographic trends in Mexico, the boom in Mexican undocumented migration is likely over. Mexico has turned the corner and

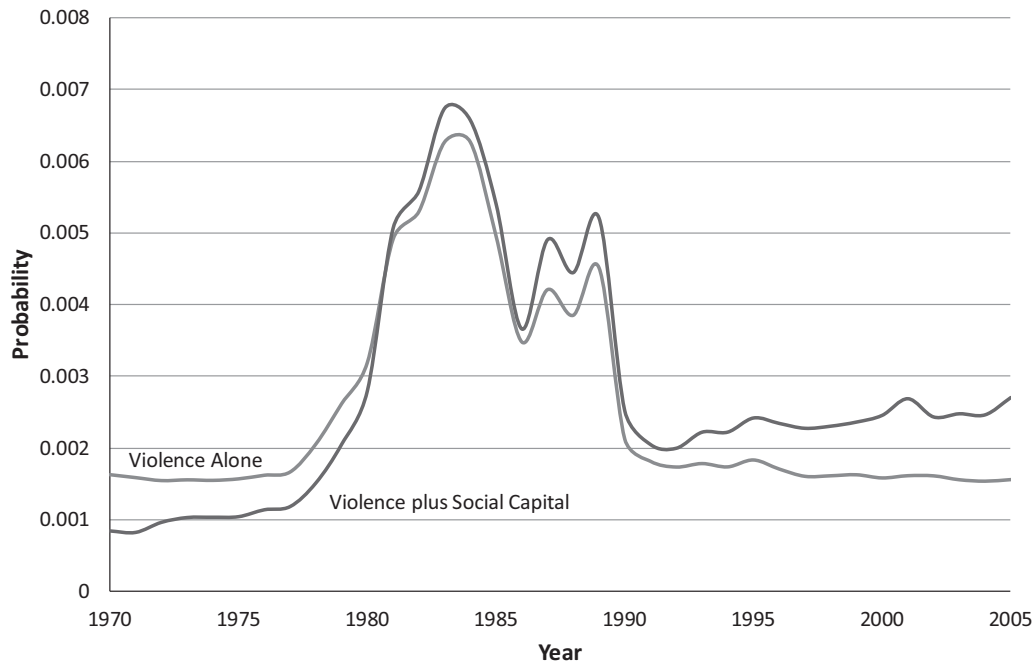
become an aging population (Wong, Espinoza, and Palloni, 2007; Zúñiga and García, 2008). Although undocumented Mexicans may have stopped arriving, however, Mexico still accounts for the large majority of undocumented migrants present in the U.S., and coming to terms with the six million undocumented Mexicans who currently live north of the border is among the most pressing policy issues facing the nation today. As we have noted, however, the next most important source region for undocumented migrants is Central America, and its unauthorized population continues to grow.

Our analysis of undocumented migration from that region suggests that it was driven almost entirely by the upsurge in violence that followed U.S. political and military interventions in Central America during the 1980s, yielding outflows that were unselected demographically but positively selected on the basis of human capital, occupational skill, business ownership, and social capital. Return migration to Central America is and has always been relatively low because conditions in the region have remained unstable, both politically and economically. Although the political violence that originally drove Central Americans northward wound down during the 1990s, it has been replaced by gang violence, which ironically is yet another side effect of U.S. policies, for the Central American gangs now terrorizing El Salvador and Honduras originated as exports from the U.S. Lacking legal status and seeing no way forward in the U.S., many undocumented Central Americans found solace and support in gangs. The most infamous, Mara Salvatrucha, was founded by Salvadorans in the Pico-Union neighborhood of Los Angeles in the mid-1980s. When undocumented gang members were later apprehended and deported, gang violence was exported back to El Salvador and transnational gang networks were created.

Given ongoing gang violence, continued economic turmoil, and the existence manifold ties linking Central Americans in the U.S. to relatives at home, undocumented migration from the region continued to rise at a slow but steady rate. To the extent that undocumented migration occurs today, it is largely determined by the social capital created earlier during prior periods of mass emigration. Under these circumstances, we can expect migration from Central America not only to continue but to continue to be dominated by the sons, daughters, spouses, and other relatives of those left during the violence of the 1980s.

To underscore this reality, we turn once again to our estimated model of first undocumented migration to the U.S. Figure VII shows

Figure VII. Probability of Taking a First Undocumented Trip Predicted from Trends in Violence and Violence Plus Rise in Access to Social Capital



what happens when we generate predicted probabilities of first undocumented departure from Central America under two scenarios: first by inserting our estimate of political violence into the equation and holding other variables constant at the mean, and second by adding in observed values for three social capital indicators (having a migrant parent, having a migrant spouse, and the percentage of people in the community with migrant experience) and generating new predicted probabilities while holding other variables' constant at the mean.

As can be seen, first undocumented departure probabilities predicted from violence alone trace out the rise in unauthorized migration during the late 1970s, its growth and peak in the 1980s, and its subsequent moderation in the 1990s. If political violence were the only factor driving people to initiate undocumented migration, then the probability of first departure would have fallen back to pre-Sandinista levels observed in the 1970s. Unfortunately, one cannot return to the status quo ante after a period of mass out-migration because the people who depart during the period of mass departure are inevitably connected to relatives left back home. As a result, in addition to whatever economic motivations they might have, those left behind acquire a new motivation for migration—family reunification—and the ties they have to migrants in

the U.S. simultaneously provide a source of social capital for them to undertake the trip.

When we add in the effects of the three social capital indicators to the prediction model, we see that the probability of taking a first undocumented trip does not, in fact, return to the baseline probability observed before 1980. Looking at the Violence plus Social Capital curve, we see that in 1977, the probability of first undocumented out-migration stood at 0.0012, but that after the political violence ended in 1992, it only fell back to 0.002, and from there, it continued to rise in subsequent years, approaching 0.003 by 2005. Even though the political violence had ended, undocumented migration continued to rise as people capitalized on ties to U.S. family members and began to take undocumented trips themselves, contributing to a self-sustaining process of social capital accumulation that has steadily increased the number of Central American migrants ever since. This increase is only obvious now because Mexican undocumented migration has all but ceased.

Our analysis thus sheds considerable light on the current historical moment and what we can expect for the future. Mexican border apprehensions are plummeting because Mexico's fertility transition has produced an aging society with ever smaller cohorts of people at risk of leaving for the U.S., but Central American apprehensions are rising as the sons and daughters, nieces, and nephews of undocumented migrants who left during the 1980s seek either to reunite with family members in the U.S. or to escape gang violence and economic turmoil at home. As fertility transitions, once completed, historically do not reverse, we predict the continued decline of undocumented migration from Mexico. However, because motivations for family reunification only increase with time spent apart and social capital itself accumulates over time to make additional departures more likely, we predict continued unauthorized migration by young Central Americans and no easy resolution of the current border crisis as long as the family members with whom they seek to reunite themselves remain undocumented.

In the end, our results once again underscore the importance of multisite, multimethod studies that use qualitative data collection methods to compile reliable quantitative information about hard-to-study behaviors such as undocumented migration. We know of no standard source of census or survey data that would have supported the analyses we conducted here. Our results also suggest the importance of diachronic measurement, which we achieved by compiling repeated cross-sectional samples over

time, and at each point in time gathering detailed retrospective life histories to support the estimation of dynamic, longitudinal models of migratory behavior. As these sorts of data sets accumulate for different countries at different times, investigators will acquire a new ability to understand how context affects migration decisions and outcomes around the world.

REFERENCES

- Acosta, Y. D., and G. Patricia de la Cruz
 2011 "The Foreign Born From Latin America and the Caribbean: 2010." *American Community Survey Brief* 10–15, U.S. Bureau of the Census, Washington, DC.
- Angelucci, M.
 2012 "U.S. Border Enforcement and the Net Flow of Mexican Illegal Migration." *Economic Development and Cultural Change* 60(2):311–357.
- Baker, B. C., and N. Rytina
 2012 *Estimates of the Unauthorized Immigrant Population Residing in the United States: January 2012*. Washington DC: Office of Immigration Statistics.
- Balderrama, F. E.
 1995 *Decade of Betrayal: Mexican Repatriation in the 1930s*. Albuquerque: University of New Mexico Press.
- Cardoso, L.
 1980 *Mexican Emigration to the United States 1897–1931*. Tucson: University of Arizona Press.
- Cerrutti, M., and D. S. Massey
 2001 "On the Auspices of Female Migration Between Mexico and the United States." *Demography* 38:187–200.
- Cornelius, W. A., and J. M. Lewis Ed.
 2007 *Impacts of Border Enforcement on Mexican Migration: The View From Sending Communities*. Boulder CO: Lynne Rienner Publishers.
- Garip, F.
 2012 "Discovering Diverse Mechanisms of Migration: The Mexico–US Stream 1970–2000." *Population and Development Review* 38(3):393–433.
- Hoffman, A.
 1974 *Unwanted Mexican Americans in the Great Depression: Repatriation Pressures, 1929–1939* Yucson.
- Jasso, G., and M. R. Rosenzweig
 1982 "Estimating the Emigration Rates of Legal Immigrants Using Administrative and Survey Data: The 1971 Cohort of Immigrants to the United States." *Demography* 19(3):279–290.
- Lundquist, J. H., and D. S. Massey
 2005 "Politics or Economics? International Migration During the Nicaraguan Contra War." *Journal of Latin American Studies* 37:29–53.
- Marín Abaunza, L.
 1998 *La Ley Díaz-Balart Nacara*. Miami FL: Astran Massey.
- Massey, D. S.
 1986 "The Social Organization of Mexican Migration to the United States." *Annals of the American Academy of Political and Social Science* 487:102–113.

- Massey, D. S. and K. E. Espinosa
 1997 "What's Driving Mexico-U.S. Migration? A Theoretical, Empirical and Policy Analysis." *American Journal of Sociology* 102:393–999.
-
- 2011 "Epilogue: The Past and Future of Mexico-U.S. Migration." In *Beyond la Frontera: The History of Mexico-U.S. Migration*. Ed. M. Overmyer-Velázquez. New York NY: Oxford University Press. Pp. 241–265.
-
- 2013 "America's Immigration Policy Fiasco: Learning From Past Mistakes." *Daedalus* 142 (3):1–11.
- , J. Durand, and N. J. Malone
 2002 *Beyond Smoke and Mirrors: Mexican Immigration in an Age of Economic Integration*. New York: Russell Sage Foundation.
- , ———, and K. A. Pren
 2009 "Nuevos Escenarios de la Migración México-Estados Unidos: Las Consecuencias de la Guerra Antiinmigrante." *Papeles de Población* 61:101–128.
- , and J. A. Phillips
 1999 "Engines of Immigration: Stocks of Human and Social Capital in Mexico." *Social Science Quarterly* 81(1):33–48.
- , and K. A. Pren
 2012 "Unintended Consequences of US Immigration Policy: Explaining the Post-1965 Surge From Latin America." *Population and Development Review* 38(1):1–29.
- , and F. Riosmena
 2010 "Undocumented Migration From Latin America in an Era of Rising U.S. Enforcement." *Annals of the American Academy of Political and Social Science* 630:137–161.
- , and A. Singer
 1995 "New Estimates of Undocumented Mexican Migration and the Probability of Apprehension." *Demography* 32(3):203–213.
- , R. Alarcón, J. Durand and H. González
 1987 *Return to Aztlan: The Social Process of International Migration From Western Mexico*. Berkeley and Los Angeles: University of California Press.
- *et al.*
 1998 *Worlds in Motion: International Migration at the End of the Millennium*. Oxford: Oxford University Press.
- Orrenius, P. M., and M. Zavodny
 2003 "Do Amnesty Programs Reduce Undocumented Immigration? Evidence From IRCA." *Demography* 40(3):437–450.
- Palloni, A., D. S. Massey, M. Ceballos, K. Espinosa and M. Spittel
 2001 "Social Capital and International Migration: A test Using Information on Family Networks." *American Journal of Sociology* 106:1262–1299.
- Passel, J. V., and D. V. Cohn
 2011 *Unauthorized Immigrant Population: National and State Trends, 2010*. Washington DC: Pew Hispanic Center.
- Passel, J. S., D'Vera Cohen and A. Gonzalez-Baker
 2012 *Net Migration Falls to Zero and Perhaps Less*. Washington, DC: Pew Research Hispanic Trends Project.
- Piore, M. J.
 1979 *Birds of Passage: Migrant Labor in Industrial Societies*. New York NY: Cambridge University Press.

- Rendall, M., P. Brownell, and S. Kups
2011 "Declining Return Migration From the United States to Mexico in the Late-2000s Recession: A Research Note." *Demography* 48(3):1040–1068.
- Reyes, B.
2004 "U.S. Immigration Policy and the Duration of Undocumented Trips." In *Crossing the Border Research From the Mexican Migration Project*. Ed. J. Durand, and D. S. Massey. New York NY: Russell Sage Foundation, Pp. 299–321.
- Riosmena, F.
2004 "Return Versus Settlement Among Undocumented Mexican Migrants, 1980 to 1996." In *Crossing the Border: Research From the Mexican Migration Project*. Ed. J. Durand, and D. S. Massey. New York NY: Russell Sage Foundation, Pp. 265–280.
- Rosenblum, M. R.
2012 *Border Security: Immigration Enforcement Between Ports of Entry*. Washington DC: Congressional Research Service.
- Sana, M., and D. S. Massey
2000 "Seeking Social Security: An Alternative Motivation for Mexico-U.S. Migration." *International Migration* 38(1):3–24.
- Taylor, J. E.
1987 "Undocumented Mexico-U.S. Migration and the Returns to Households in Rural Mexico." *American Journal of Agricultural Economics* 69:626–638.
- United Nations Office on Drugs and Crime
2007 *Crime and Development in Central America: Caught in the Crossfire*. New York NY: United Nations.
- Warren, R.
2000 *Annual Estimates of the Unauthorized Immigrant Population Residing in the United States and Components of Change: 1987 to 1997*. Washington DC: Office of Policy and Planning, U.S. Immigration and Naturalization Service.
- , and E. P. Kraly
1985 "The Elusive Exodus: Emigration From the United States." Population Trends and Public Policy Occasional Paper No. 8. Washington DC: Population Reference Bureau.
- , and J. R. Warren
2013 "Unauthorized Immigration to the United States: Annual Estimates and Components of Change, 1990–2010." *International Migration Review* 47(3):296–329.
- Wasem, R. E.
2011 *Unauthorized Aliens Residing in the United States: Estimates Since 1986*. Washington DC: Congressional Research Service.
- Wong, R., M. Espinoza, and A. Palloni
2007 "Adultos Mayores Mexicanos en Contexto Socioeconómico Amplio: Salud y Envejecimiento." *Salud Pública de México* 49(S4):S436–S447.
- Woodrow, K., and J. S. Passel
1990 "Post-IRCA Undocumented Immigration to the United States: An Analysis Based on the June 1988 CPS." In *Undocumented Migration to the United States: IRCA and the Experience of the 1980s*. Ed. F. D. Bean, B. Edmonston, and J. S. Passel. Washington DC: Urban Institute Press, Pp. 33–76.
- Zúñiga, E., and J. E. García
2008 "El Envejecimiento Demográfico en México. Principales Tendencias y Características." In *Situación Demográfica de México*. Ed. México, DF: Consejo Nacional de Población. Pp. 93–100.