Evaluation of migration between Mexico and the U.S. estimated from a border survey: the 1993-2003 EMIF

Michael S. Rendall, Emma Aguila, and Ricardo Basurto-Davila
RAND Labor and Population program

EXTENDED ABSTRACT

Introduction

A number of specialist surveys have been fielded in Mexico allowing in-depth insights about the Mexico-U.S. migration process and its relationship to Mexican social and economic conditions. Only two surveys, however, have been fielded with the frequency and regularity to allow for the analysis of change in the migration process. The most well known of these, and the source of large amounts of scholarship, is the Mexican Migration Project (MMP, Durand and Massey 2004a). The MMP is a probability survey of the main migrant-sending areas of Mexico, expanding over time in its coverage. The frequency and regularity of data collection in the MMP has allowed analyses such as changes in duration of stay in the U.S. (Reyes 2004; Riosmena 2004) that are more difficult to conduct in one-off or occasional surveys such as the National Survey of Demographic Dynamics (ENADID).

The second, and less well known, of the two surveys of migrants that have been fielded with high frequency and regularity is the Survey of Migration at the North Border of Mexico (EMIF, *[Encuesta sobre Migración en la Frontera Norte de México]*, CONAPO 2008). While the EMIF is much less exploited in the scholarly literature in the U.S., its sample design allows for a claim of fuller coverage of migrant flows both to and from the U.S. to be made for the EMIF than for the MMP. The survey design and sampling method of the EMIF is similar to that for the main survey used for estimating migration flows to and from the United Kingdom, the International Passenger Survey (IPS, Office for National Statistics 2008).[1] In both the EMIF and the IPS migrants are first distinguished from non-migrant travelers with questions that allow the elimination of other flows such as tourists and residents of the crossing border city whose trips to and from the U.S. do not involve a change of country of usual residence. Emigrants and immigrants alike are identified based on their intended period of stay abroad, which is limited to the U.S. in the case of the EMIF. A short questionnaire about the current trip and about migration history and future intentions, and about selected socio-demographic characteristics and labor-market behavior, is then administered to the migrants identified. The EMIF excludes from its sample all people born in the United States, but includes migrants born in Mexico and elsewhere, and identifies migrants by country of birth (e.g., migrants from Central American countries traversing Mexico on the way to and back from the U.S.).

---

1 ;See Rendall, Tomassini, and Elliot (2003) for an evaluation of the IPS against Census and household survey methods of collection, and Rendall, Wright, and Horsfield (2005) for additional evaluation of the IPS emigrant flows against receiving countries' administrative statistics on immigrants from the U.K..

While the EMIF has been used in studies published in Mexico (e.g., Anguiano 2003; Mendoza 2004), and has begun to enjoy some exposure in studies in the international scholarly literature (see especially the studies of Amuedo-Dorantes and colleagues for analyses of migrant remittances and of migration flow changes in response to changes in border enforcement ---- Amuedo-Dorantes and Poza 2005, 2006; Amuedo-Dorantes and Bansak 2007), its representativeness of migration flows is not well established.[2] Our main objective in this paper is accordingly to evaluate the EMIF against emigration and return migration data in national household surveys and censuses in Mexico and in the U.S. We then apply the 1993-2003 EMIF data to the estimation of first emigration to the U.S. and duration of stay.

Data sources for estimation of emigration and return migration between Mexico and the U.S.

Reviews of international migration statistics and data sources on international migration (e.g., Bilsborrow, Hugo, Oberai and Zlotnick 1997; United Nations 2002) note administrative records, such as population registers and immigration permit data, and population censuses as being the main sources of data on migration flows. Specialist household surveys are considered as a further source for immigrant and immigration analyses.

With respect to administrative data on migration flows, immigration permit data are of limited use in the Mexico-U.S. context due to the large number of undocumented migrants (e.g., Warren 2003). Net and gross migration estimates, however, have been generated from both U.S. and Mexican censuses and microcensuses. Net migration of the Mexican-born population can be estimated by two consecutive censuses, as shown by Hill and Wong (2005) alternately using the U.S. and Mexican Censuses of 1990 and 2000. Rendall and Torr (2008) similarly use both the Mexican and U.S. census data from 1990 and 2000, but instead use the "country of residence 5 years ago" questions in each country's Census to estimate gross migration rates between the U.S. and Mexico for children born in the U.S. to Mexican-born mothers. In the U.S.-Mexico migration context, however, estimation of migration in a shorter than a five-year interval is clearly desirable given the high frequency of short-term and circular migration between Mexico and the U.S. (e.g., Bean et al 2001).

The Mexican Census PUMS do not contain information about shorter migration intervals that are comparable to the U.S. "year of arrival" question (Minnesota Population Center 2006). While the U.S. Census has a "year of arrival" question that identifies migration in a shorter interval, there is debate about the validity and reliability of responses to this question. Redstone and Massey (2004) evaluate responses to the "year of arrival" variable in the 2000 U.S. Censuses against migration histories provided in the National Immigrant Survey-Pilot, and find that moves to and from Mexico frequently occur before a migrant considers he or she first arrived to "settle" or "stay" in the US. Ellis and

---

2 Amuedo-Dorantes and colleagues cite only a 1998 study by the Mexican Department of Labor and Social Welfare of the first, 1993-94 Wave of the EMIF.

Wright (1998)'s found that of Mexican-born respondents in the 1990 U.S. Census who reported an arrival within five years of the Census, over a quarter also reported being present in the U.S. in 1985 (in response to the "place of residence five years ago" question), and 16 percent reported arriving between 1987 and 1990. More promising for capturing immigration flows to the U.S. may be the American Community Survey (U.S. Census Bureau 2007). A disadvantage of any U.S. data source, however, is its likely undercoverage of unauthorized migrants (Lindstrom and Massey 1994). While, in the best case, the 2000 U.S. Census is assumed by Warren (2003) to have only 10% undercoverage of the *stock* of unauthorized migrants, it is likely that the most recent migrants (for example, those that have arrived in the past year) will have the greatest levels of undercoverage (see, for example, Marti and Rodriguez 2007 for an analysis of undercoverage of immigrant flows versus immigrant migrant stocks in a large-scale European household survey).

In countries with high rates of emigration as is the case of Mexico, reports by remaining household members may be used to count emigration events. Wong Luna, Resano Peréz, and Martínez Matiñon (2006) use the 2000 Census and the 1995 Microcensus [*Conteo de Population y Vivendes*] to describing changes in emigration and return migration. An additional source with national coverage in Mexico is the occasional, large-scale demographic survey, the National Survey of Population Dynamics (ENADID), also analyzed by Wong et al (2006). It was conducted in 1992, 1997, and 2006 and includes reports of emigration from and return migration to Mexico in the five years before the survey. It dates the timing of the last emigration or return migration event occurring to a current or former household member in this five-year window, and provides a count of the number of emigrations inside the five-year period for each migrant. The major limitations of the ENADID are its having been fielded as an occasional rather than regular survey, and its capturing the migration only of individuals who have ongoing attachment to current Mexican households. As Wong et al (2006, p.14) note, this does not represent the full population especially of female Mexican emigrants to the U.S. Missed are the emigration of individuals in single-person households, emigration of complete households, and emigration that occurs to individuals in households that dissolved between the migration event and the survey. Hill and Wong (2005) compare ENADID results with residual net migration estimates from the 1990 and 2000 censuses alternately of Mexico or the US. They find ratios of male to female emigrants in ENADID that are more than double those of their residual estimates and conclude that the ENADID underestimates female emigration due to the greater likelihood of women's settling in the U.S. with their family, and therefore being lost to the ENADID's Mexican household sampling frame.

General-purpose household surveys are often considered to have serious deficiencies for capturing migration, although this view is not universally held. On the negative side, Bilsborrow et al (1997, p.239) argue that "[t]he desirability of concentrating on *recent* migrants when analysing the causes or consequences of international migration implies that general purpose surveys are usually not useful because of the small numbers of recent migrants covered." Added to this statistical efficiency problem are the problems of capturing immigrants who may be difficult to capture due to language difficulties and

3

legal-statuses reasons for not responding to household surveys that have been suggested as possible reasons for capture of migrants in household surveys (Martí and Ródenas 2007). These latter arguments do not apply, however, to returning migrants. Rendall, Tomassini, and Elliot (2003) find evidence for good capture of returning migrants in some of the same European Labour Force Surveys that Martí and Ródenas (2007) find to be inadequate for capturing overall immigrant inflows. We use this observation in support of our use of a similar large-scale household survey in Mexico to capture return migrants in the Mexican Employment Survey (ENE), and thereby to evaluate return migration flows in the EMIF (discussed below). In a variant on the indirect estimation of emigration from consecutive censuses, Van Hook, Passel, and Zhang (2006) use the observation of the Mexican-born population in successive quarters of the U.S. Current Population Survey to estimate emigration of the foreign-born population, including specifically the Mexican-born population.

Much of the analysis of Mexico-U.S. migration has been conducted using data from specialist surveys that are either limited to, or oversample, the main migrant-sending areas of Mexico. Two recent examples of household surveys that, while being national in scope, oversample the high migrant-sending regions, are the Mexican Health and Aging Study (MHAS) and the Mexican Family Life Survey (MxFLS). In the domain of surveys that limit their sampling to major migrant sending areas, and that therefore do not cover the national population in Mexico, the Mexican Migration Project (MMP, Durand and Massey 2004a) stands out as being by far the most important to the scholarly literature in the U.S. It has been a key source of data for estimation, theoretical development and testing of explanations for Mexican-US migration over the recent decades (e.g., Lindstrom 1996; Cerrutti and Massey 2001). Major contributions of the MMP for migration flow estimation have been to show the high frequency of temporary and repeat migration among both authorized and unauthorized Mexican migrants, and to estimate and distinguish the flows of authorized and unauthorized migrants (Riosmena 2004; Reyes 2004).

The MMP data, however, need to be used with caution for migrant flow estimation due to their being only partly based on probability sampling. They are neither a probability sample of the national population of Mexico nor of Mexicans in the US. In Mexico, the MMP uses random sampling methods to select households within non-randomly selected Mexican communities. Durand and Massey (2004a) report the MMP's representativeness has been found to be very good when compared to a probability sample of returning migrants in Mexico's National Survey of Population Dynamics (ENADID). In one way this is less reassuring than it might otherwise be, since the ENADID also samples migrants from a universe consisting only of those who have returned to Mexico, or whose migration between the U.S. and Mexico if they are not currently living in Mexico is reported by family members remaining in Mexico. Its sample definition is similar to that of the MMP, but on a national scale. However, both surveys deviate from a sample definition that covers all migrants. Using the MMP, Kana'iaupuni (2000) reports that married or cohabiting women were far more likely to migrate after their partner than either before, or in the same year as, their partner. This

gives reason for having greater confidence in the ENADID, and so also the MMP, for estimating men's than women's emigration and return migration.

The MMP is also more suited to the analysis of the return migration of those with strong household attachments in Mexico than it is for the estimation of overall return migration flows or rates. Because it is largely a Mexican sending community sample, the MMP has stronger statistical properties for the estimation of Mexican emigration to the U.S. than for the estimation of Mexican-born US-resident rates of return migration to Mexico. The U.S. samples of the MMP includes "non-returners," but the samples are found using snowball sampling methods. The resulting sample sizes are small, and the statistical properties of these samples are not well established. Evidence for potentially large biases may be seen when examining the estimates of Massey and Zenteno (1999) and the samples those estimates were derived from. They estimated male and female emigration and return migration rates by age and gender for age groups up to 65 to 69 years old, using both Mexican and U.S. subsamples from the MMP. While their estimated emigration rates to the U.S. display the standard shape with age, peaking at age 20-24 for both men and women and falling thereafter, return migration rates to Mexico display a highly unusual shape, increasing monotonically with age to levels as high as 40 return migrants per hundred annually for Mexican-born men's and women in their 60s. There is good reason to be highly skeptical of the unusual pattern and magnitudes of these return migration rates, both from the perspective of being unbiased with respect to coverage of all migrants and from the perspective of having sufficient sample sizes to be used to generate statistically reliable estimates of return migration rates by age and gender. Such rates applied year after year to a cohort would imply almost no aging in the U.S. among Mexican-born immigrants. The U.S. sample data they use in the estimation of return migration rates were from a snowball sample of 415 households (p.5331). Adding together the Mexican and U.S. samples, the authors describe their return migration equation as having been estimated from a total of 2,961 migrants from Mexico, of whom 96 percent were male (p.5332). Even if such a large gender imbalance were credible (that is, if it does not instead reflect a bias against finding women due to their longer stays in the U.S.), the female sample sizes will be too small for other than very broad age breakdowns.

EMIF Data Evaluation

The data we evaluate are from the 1993-2003 years of the Survey of Migration in the North Border of Mexico (EMIF, CONAPO 2007) [*Encuesta sobre Migración en la Frontera Norte de México*]. The data we use to evaluate the EMIF are, in Mexico, (1) the 1997 National Survey of Demographic Dynamics (ENADID, INEGI 2003) [*Encuesta Nacional de la Dinamica Demografica*]; (2) the 1999-2003 National Survey of Employment [*Encuesta Nacional de Empleo]*; and in the U.S., the 2000 Census Public Use Microdata (PUMS, Ruggles et al 2004).

The EMIF has been collected annually at semi-regular intervals since 1993. Nine waves are available for our study. The first wave of this survey took place between March 28th 1993 and March 27th 1994, the second from December 14th 1994 to December 13th

5

1995, the third from July 11th 1996 to July 10th 1997, the fourth from July 11th 1998 to July 10th 1999, the fifth form July 11 1999 to April 10th 2000, the sixth from April 11th, 2000 to April 10th 2001, the seventh from April 11th 2001 to April 10th 2002, the eight from July 11th, 2002 to July 10th, 2003, and the ninth is from July 11th, 2003 to June 30th, 2004. Data collection in the EMIF is ongoing according to this more or less annual periodicity.

The methodology of the EMIF has been developed to collect probability samples with which to estimate the periodical, seasonal, or cyclic journeys of migrants both to and from the United States. Individuals are sampled in bus and railroad stations, the Mexican border, customs, airports, and key passing vehicle zones in Mexico. The probability sampling method used by the EMIF is similar to that used in the United Kingdom's International Passenger Survey (IPS, Office for National Statistics 2008). In both the EMIF and the IPS migrants are distinguished from non-migrant travelers with questions that allow the elimination of other flows such as tourists and residents of the crossing border city whose trips to and from the U.S. do not involve a change of country of usual residence. The EMIF excludes people born in the United States, and identifies migrants born in countries other than Mexico (e.g., Central American countries traversing Mexico on the way to and back from the U.S.).

As with all methods for capturing international migration (see again Bilsborrow et al 1997 for a review), the EMIF has both advantages and disadvantages. The EMIF's unique advantages are that it is an annual, specialist migration survey using probability sampling methods to cover emigration and return migration flows at the major land crossing points and airports other than in the border cities.

Especially valuable for estimating migration from a life-course perspective is a question asked of individuals both intending to emigrate to the U.S. and of individuals returning from the U.S. ---- "in what year did you first enter the U.S. to work or look for work?" The answer to this question potentially allows for nationally-representative estimates of likelihood of emigrating to the U.S. among Mexican birth cohorts. We use the "intending-emigrant" and "returning emigrant" samples of the EMIF to generate alternate estimates of this likelihood. We additionally use the "returning emigrant" samples of the EMIF to generate estimates of the duration of this first spell in the U.S., including those first spells that are ongoing (i.e., the emigrant is still in the U.S.).

EMIF emigration compared to emigration in the Mexican National Survey of Demographic Dynamics (ENADID) and the 2000 U.S. Census

Our evaluation of the EMIF data begins with a comparison of the 1993-97 EMIF data using a Mexican household survey (the 1997 ENADID) in which households report the emigration of household members of the last five years. We use reports of 1993-97 emigration from Mexico and return migration to Mexico of the Mexican-born sample of the 1997 ENADID to evaluate the reliability and validity of EMIF men's emigration flows and the EMIF men and women's return migration flows. The 2000 U.S. Census

PUMS (Ruggles et al 2004) question on year of arrival is used as an alternative source of Mexico-U.S. migrant flow data to compare to the 1999-2000 EMIF.

Emigration events are reported in the ENADID irrespective of whether those household members are currently in Mexico or in the U.S. Number of emigration events (trips to go and work or study in the U.S.) of the individual in the last five years is reported together with date of the *last* emigration event. If (but only if) the individual is currently living in Mexico, date of the last return migration event is also reported. The ENADID is therefore most useful for reporting recent emigration events, as only for those events is the date of emigration available.

The ENADID does not identify whether a migration event is the first in a lifetime. Therefore we use it to evaluate the birth-cohort-specific rate of emigration (including both first and subsequent emigrations) estimated from the EMIF. We also use the ENADID to compare the total emigration events in the 1992-1997 period with that in the 1993-97 EMIF. This is relatively easy to estimate directly on a birth-cohort basis in the ENADID, as the Mexican household sample includes both those in Mexico who have lived in the U.S. in the last five years and those in the U.S. who are still attached to a Mexican household. It can be estimated by a combination of reports and simulation of the process of emigration and return migration over a five year period in the EMIF, using the 1993-97 samples to estimate this model.

EMIF return migration compared to return migration in the Mexican Survey of Employment (ENE/ENEU and ENOE)

We next compare EMIF return migrant flows in the years 1998 to 2003 to those estimated from estimates of people (re)joining Employment Survey households after living in the U.S. The Employment Surveys of Mexico were, until the introduction of the ENOE in 2005 (INEGI 2005), conducted separately in the main urban areas (ENEU, INEGI 2000b) and in the rest of the country (ENE, INEGI 2000a). Beginning in 1998, the two surveys were designed so that their aggregation could produce nationally-representative population estimates (INEGI 2000b).

There are two key questions that provide data on return migrants from the US: "residence status" (Condición de residencia) and "migrant origin" (Migración). One of the codes for residence status is "new migrant resident" (Residente nuevo inmigrante). "New" is in relation to the previous wave of the survey. Each residence receives five interviews. In the second through fifth interviews, any new member of the residence is coded as either a "new migrant resident" or a "new non-migrant resident" according to whether the move was from outside the area (e.g., city or metropolitan area), including moves from outside the country. To reduce the likelihood that such moves are missed in the survey, interviewers are instructed to code "new migrant resident" in the first wave that the individual is picked up by the survey in the case that the individual had been omitted in error after having arrived as a new resident in the previous wave (INEGI 2000c).

Estimation of emigration and return migration in the life course

The main topics of our substantive study using the EMIF are on first emigration to the U.S. among Mexican birth cohorts and on duration of stay in the U.S. These are estimated alternately from samples of intending emigrants and from samples of returning emigrants. For both samples, the EMIF asks about whether this emigration will be (intenders) or was (returners) the first emigration *for work*. For the intending-migrant sample, first (intended) emigration is measured directly. For the returning sample, we accumulate unique reports of year of first emigration to the U.S. from the question on time spent in the U.S. in this last trip. This allows us to avoid double-counting migrants who may have entered the U.S. and returned to Mexico many times.

Denominators for both first emigration and return migration come from independent population estimates combined with accumulated "losses" to the denominator (for people at risk of first emigration) and "gains" to the denominator (for people at risk of return migration) from the EMIF itself. For example, a second use of the 1997 ENADID is in the estimation of the stock of emigrants who are in the U.S., and the stock who have returned to Mexico, after a given duration since the last emigration event. The U.S. and Mexican Censuses of 2000 may be used to estimate the total birth cohort size for male and female Mexican birth cohorts, while the "country five years ago" question allows for age-specific estimates of Mexican-born children already in the U.S. (and therefore not exposed to a first migration "for work"). We estimate Mexico-U.S. emigration probabilities and U.S.-Mexico return probabilities, and apply them within a cohort migration model, alternately using a one-month and a one-year migration interval.

References

Amuedo-Dorantes C., and S. Poza (2005) On the use of different Money transmission methods by Mexican immigrants *International Migration Review* 39(3):554-576.

Amuedo-Dorantes C., and S. Poza (2006) Remittances as insurance: Evidence from Mexican immigrants *Journal of Population Economics* 19:227-254.

Amuedo-Dorantes, C., and C. Bansak (2007) "The effectiveness of border enforcement in deterring and postponing repetitive illegal crossings attempts." Manuscript.

Anguiano, M. E. (2003) Emigrantes Indocumentados y Deportados Residentes en el Estado de México *Papeles de Población* 36:133-160.

Bilsborrow, R.E., G. Hugo, A.S. Oberai, and H. Zlotnick (1997) *International Migration Statistics: Guidelines for Improving Data Collection Systems* ILO, Geneva.

Bean, F.D., R. Corona, R. Tuirán, and K.A. Woodrow-Lafield (2001) Circular, Invisible, and Ambiguous Migrants: Components of Difference in Estimates of the Number of Unauthorized Mexican Migrants in the United States *Demography* 38(3):411-422.

Cerrutti, M., and D.S. Massey (2001) On the auspices of female migration from Mexico to the US *Demography* 38(2):187-200.

CONAPO (2008) *EMIF, Aspectos Metodológicos* www.conapo.gob.mx Accessed 9/22/08.

Durand, J. and D.S. Massey (2004a) "Appendix: The Mexican Migration Project" pp.321-336 in J. Durand and D.S. Massey (eds) *Crossing the Border: Research from the Mexican Migration Project* New York: Russell Sage Foundation.

Durand, J. and D.S. Massey (2004b) "What we have learned from the Mexican Migration Project" pp.1-14 in J. Durand and D.S. Massey (eds) *Crossing the Border: Research from the Mexican Migration Project* New York: Russell Sage Foundation.

Ellis, M., and R. Wright (1998) When immigrants are not migrants: Counting arrivals of the foreign-born using the U.S. Census *International Migration Review* 32(1):127-144.

Hill, K., and R. Wong (2005) Mexico-U.S. migration: Views from both sides of the border *Population and Development Review* 31(1):1-18.

INEGI (2000a) *Aspectos Metodológicos de la Encuesta Nacional de la Encuesta Nacional de Empleo Urbano (ENE)* [Coding Instructions for the National Survey of Urban Employment] www.inegi.gob.mx.

INEGI (2000b) *Manual del Critico-Codificador de la Encuesta Nacional de Empleo Urbano 2000 (ENEU)* [Coding Instructions for the National Survey of Urban Employment] www.inegi.gob.mx.

INEGI (2000c) *Manual del Entrevistador de la Encuesta Nacional de Empleo Urbano (ENEU)* [Manual for Interviewers for the National Survey of Urban Employment] www.inegi.gob.mx.

INEGI (2003) *Sintesis Metodológicos de la Encuesta Nacional de la Dinamica Demografica* www.inegi.gob.mx

INEGI (2005) *Encuesta Nacional de Ocupacion y Empleo (ENOE)* [National Survey of Occupation and Employment] www.inegi.gob.mx.

Kana'iaupuni, S.M. (2000) Reframing the migration question: An analysis of men, women, and gender in Mexico *Social Forces* 78(4):1311-1348.

Lindstrom, D.P. (1996) Economic opportunity in Mexico and return migration from the United States *Demography* 33(3):357-374.

Lindstrom, D.P., and D.S. Massey (1994) Selective emigration, cohort quality, and models of immigrant assimilation *Social Science Research* 23:315-349.

Martí, M., and C. Ródenas (2007) Migration estimation based on the Labour Force Survey: An EU-15 perspective *International Migration Review* 41(1):101-126.

Massey, D.S., and R.M. Zenteno (1999) The dynamics of mass migration *Proceedings of the National Academy of Sciences* 96:5328-5335.

Mendoza, C. (2004) Circuitos y espacios transnacionales en la migración entre México y Estados Unidos: aportes de una encuesta de flujos. *Migraciones Internacionales* Colegio de la Frontera, 2-003: 83-109.

Minnesota Population Center. (2006). *Integrated Public Use Microdata Series-International: Version 2.0.* Minneapolis: University of Minnesota. http://international.ipums.org.

Office for National Statistics (2008) *The International Passenger Survey* www.statistics.gov.uk.

Redstone, I., and D.S. Massey (2004) Coming to stay: An analysis of the U.S. Census question on immigrants' year of arrival *Demography* 41(4):721-738.

Rendall, M.S., C. Tomassini, and D. Elliot (2003) Estimation of annual immigration from the Labour Force Surveys of the United Kingdom and continental Europe *Statistical Journal of the UNECE* 20(3-4):219-234.

Rendall, M.S., E. Wright, and G. Horsfield (2005) "Immigration to and Emigration from the United Kingdom Estimated from the European Union Labour Force Surveys." Paper presented at the British Society for Population Studies.

Rendall, M.S., and B.M. Torr (2008) Emigration and schooling among second-generation Mexican-American children *International Migration Review* 42(3):729-738.

Reyes, B.I. (2004) Changes in trip duration for Mexican immigrants to the United States *Population Research and Policy Review* 23(3):235-257.

Riosmena, F. (2004) "Return versus settlement among undocumented Mexican migrants, 1980 to 1996," pp.265-280 in *Crossing the Border: Research from the Mexican Migration Project* J. Durand and D.S. Massey (eds), New York: Russell Sage Foundation.

Ruggles, S., Sobek, M., Alexander, T., Fitch, C. A., Goeken, R., Kelly Hall, P., King, M. & Ronnander, C. (2004) *Integrated Public Use Microdata Series, Version 3.0.* Minneapolis, MN: Minnesota Population Center. http://usa.ipums.org/usa.

Warren, R. (2003) Estimates of the unauthorized immigrant population residing in the United States: 1990 to 2000. Washington: INS.

Wong Luna, R., E. Resano Peréz, and L. Martínez Matiñon (2006) *Una constante cambiate: La migración de la población mexicana hacia Estados Unidos de Norteamerica* Zapopan, Jalisco: Universidad de Guadalajara.

United Nations (2002) "Measuring International Migration: Many Questions, Few Answers", in *International Migration Report 2002* New York: United Nations.

U.S. Census Bureau (2007) *The American Community Survey* www.census.gov/acs.

Van Hook, J., J.S. Passel, and W. Zhang (2006) New approaches and estimates of foreign born emigration *Demography* 43(2):361-382.