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Emma Aguila and Alma Vega



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Emma Aguila

University of Southern California

Alma Vega

University of Pennsylvania

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Michigan Retirement Research Center

University of Michigan

P.O. Box 1248

Ann Arbor, MI 48104

www.mrrc.isr.umich.edu

(734) 615-0422

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Abstract

For decades, scholars have attempted to understand the effects of immigration on the U.S. Social Security system. To date, this research has been primarily limited to migrants in the U.S. and does not consider those who return to their countries of origin. Immigrants often pay OASDI taxes using illegitimate Social Security numbers and may return to their home countries without collecting U.S. Social Security benefits. In this study, we analyze the socioeconomic and labor characteristics, health, migration histories, and transitions to retirement of male Mexican return migrants who contributed to the U.S. Social Security system. Using the 2003 and 2012 Mexican Health and Aging Study (MHAS), we find that in 2012, 32% of male return migrants reported having contributed to the U.S. Social Security system but only 5% of those who contributed, received or expected to receive benefits. Those who reported having contributed were more likely to have completed college, spent more years in the U.S., and were more likely to be U.S. citizens or legal permanent resident than those who did not contribute. We also find that return migrants who spent one to nine years in the U.S. had a lower probability of transitioning to retirement between 2003 and 2012 than those had never been to the U.S. In contrast, those who spent 20 or more years in the U.S. had a higher probability of transitioning to retirement.

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1. Introduction

Scholars have long studied the effects of immigration on United States Social Security system (e.g., Bongaarts, 2004; Lee and Miller, 2000; Storesletten, 2000; Gustman and Steinmeier, 1998). To date, this research has been primarily limited to migrants within the U.S. and has not considered those who return to their countries of origin. Immigrants often pay Old-Age, Survivors, and Disability Insurance (OASDI) taxes using illegitimate Social Security numbers (Office of the Inspector General, 2002),¹ and may return to their home countries without collecting benefits. To our knowledge, there is no information on the proportion of return migrants who contributed to the U.S. Social Security system and are ineligible to collect benefits.

In this study, we examine the extent to which Mexican male return migrants contributed to the U.S. Social Security system while in the U.S. Specifically, we estimate the proportion of middle-age and older male return migrants who reported having contributed to the U.S. Social Security system, and examine their socioeconomic and labor characteristics, health, migration histories, and changes in these characteristics over time. In this way, the present study aims to inform the broader debate on the effects of immigration on the U.S. Social Security system by examining a population absent from most U.S. databases: Mexican emigrants.

As more migrants legalized under the 1986 Immigration and Reform Control Act (IRCA) reach old age, it is important to understand this dynamic and its change over time. In this study, we analyze the largest group of migrants legalized through IRCA, Mexicans (Powers and Seltzer, 1998). By privileging family ramification, the 1965 Immigration and Nationality Act increased the number of lower-income and lower-education immigrants from Latin America and Asia (Borjas 1987). These changes call for renewed attention to the effects of emigration on the U.S. Social Security system that better reflects the current demographic landscape.

This interaction holds numerous policy implications. Immigrants who contribute to the U.S. Social Security system may return to their home countries before qualifying for benefits, thus providing a boon to the program. This may come at the expense of migrants' own economic security during later life. Aguila and Zissimopoulos (2008) find that older return migrants in Mexico retire later than their nonmigrant counterparts, suggesting that truncated work histories

¹ This practice may have decreased since 2001 (Goss et al., 2013).

may force individuals to work into late life if they do not qualify for either U.S. or Mexican Social Security benefits. Conversely, they may return migrate *after* qualifying for benefits and receive benefits abroad, thereby transferring U.S. resources to Mexico.

In this study, we use panel data representative of the middle-age and older population in Mexico, the Mexican Health and Aging Study (MHAS), similar to the Health and Retirement Survey (HRS), in 2003 and 2012. The MHAS oversamples regions in Mexico with the highest quantity of migrants to the U.S., hence providing a unique opportunity to analyze a difficult to reach population.

The paper is structured as follows. In section 2, we describe the literature on this topic. In section 3, we describe the data sources, sample, dependent and independent variables, and limitations of the data. In section 4, we delineate the empirical methods used in this study and in section 5, we show descriptive statistics of socioeconomics and labor characteristics, health, and migration histories of male return migrants that reported having contributed to the U.S. Social Security system. In section 6, we estimate a probit model describing the predictors having contributed to the U.S. Social Security system among return migrants. In section 7, we describe labor transitions from employment to retirement (defined as not working but not necessarily receiving Social Security benefits) between 2003 and 2012 for all males including return migrants. Finally, section 8 provides a summary and limitations of the study.

2. Background

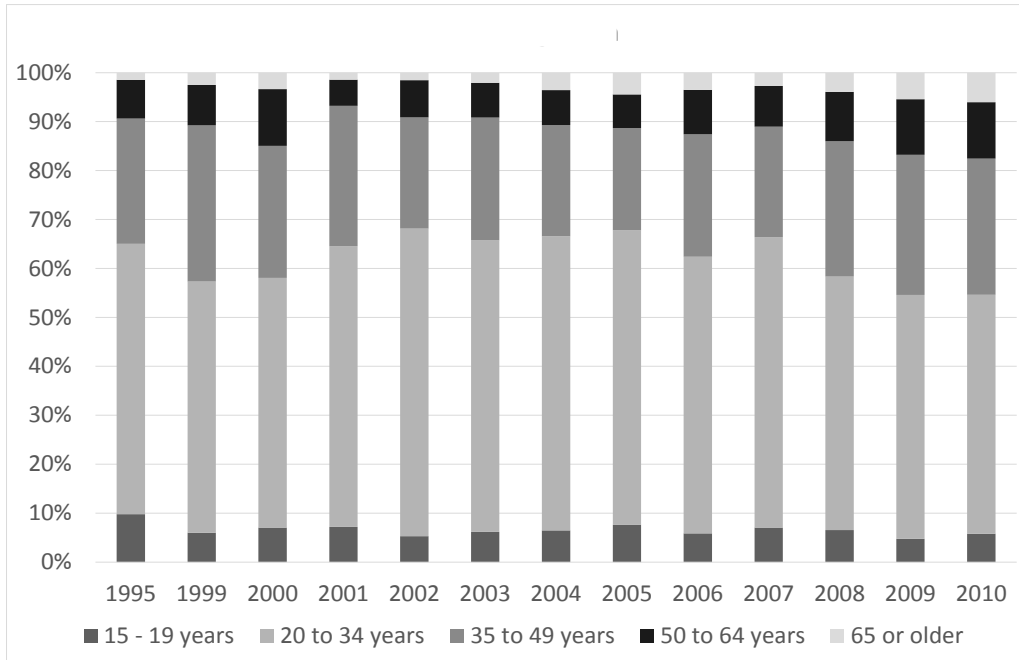
International migration will continue to exert great influence in the U.S. According to U.S. Census Bureau projections, immigrants will increase from 13.3% of the U.S. population in 2014 to 18.8% in 2060 (Colby and Ortman, 2014). Among the many ramifications of this development are its economic implications. The presence of immigrants in the U.S. affects the balance between tax revenues and public expenditures (Smith and Edmonston, 1997), the composition of the U.S. labor force (Singer, 2012) and the U.S. Social Security trust fund. Trust fund projections currently depend on the number of legal and non-legal migrants entering and exiting the country (Office of the Chief Actuary Social Security Administration, 2014). While there is a vibrant literature on the characteristics of the former group, there is far less information on the latter group. Return migrants potentially contribute to the U.S. Social Security system without collecting benefits upon exiting the country. Studies document considerable movement

among foreign-born primary Social Security beneficiaries (Turra and Elo, 2008, Vega, 2015) but do not examine emigration among immigrants who are not eligible to collect benefits.

The few empirical studies that examine access to social security benefits among return migrants come to contradictory conclusions. Ross et al. (2006) analyze the effect of U.S. migration experience on health insurance and pension coverage during retirement among return migrants. Using the MHAS 2001, the authors find that an extra year spent in the U.S. is associated with a 0.4 percentage points increase in the probability of receiving pension benefits. The authors do not, however, distinguish whether these pension benefits come from U.S. or Mexican sources. Aguila and Zissimopoulos (2008) come to a different conclusion when dichotomizing return migrants into short-term (spent less than a year in the U.S.) and long-term (spent more than one year) U.S. migrants. Using the MHAS 2001 and 2003 waves, the authors find that short-term return migrants had similar access to Mexican social security benefits than Mexicans with no migration history to the U.S. and less access to U.S. Social Security benefits than long-term return migrants. Conversely, long-term return migrants were less likely to have access to Mexican social security benefits and more likely to access U.S. Social Security benefits than short-term migrants.

Return migration is increasingly relevant considering recent increases in later-life migration flows between the United States to Mexico. Figure 1 shows a moderate increase in the proportion of return migrants ages 65 years and older. In 1995, return migrants 65 years or older constituted 1.5% of the return migrant population. This proportion increased to 6.0% by 2010. The same is true for those migrants between 50 and 64 years old, increasing from 7.9% in 1995 to 11.5% in 2010.

Figure 1: Migration Flows by Age from the U.S. to Mexico



Source: Authors' elaboration using CONAPO (2012) estimations 1995, 1999-2010.

The gap in the literature on the contributions to the U.S. Social Security system among return migrants takes on increasing importance given demographic changes resulting from the 1986 IRCA. One purpose of this law was to enable unauthorized migrants to gain legal status if they fell into at least one of two categories: (1) farm workers who could demonstrate they had worked in the U.S. for at least 90 days during the 12 months preceding May 1, 1986 (Special Agricultural Workers or SAW), and (2) immigrants who could prove continuous residence in the U.S. after January 1, 1982 (Legally Authorized Workers or LAW) (Borjas and Tienda, 1993; SSA, 1997). Nearly 2.7 million undocumented immigrants were granted legal permanent residence, representing almost 90% of all applications (Rytina, 2002). Powers and Seltzer (1998) and Borjas and Tienda (1993) report that approximately 70% of immigrants legalized under the IRCA were of Mexican-origin and 50% were ages 30 and older in 1990. The latter estimate implies that at least half of individuals legalized under IRCA are 52 years old or older in 2012. As a result of obtaining legal status under IRCA, more migrants who reach retirement age will be eligible to receive U.S. Social Security benefits through the OASDI program. Individuals must be at least 61 years and nine months to apply, and 62 to start receiving benefits, and have at least

40 qualifying quarters of earnings. Benefits are not available for unauthorized immigrants and any noncitizen without a work-authorized Social Security number (Goss et al., 2013). IRCA legalized roughly half of all unauthorized immigrants in the U.S. in 1986 (Woodrow and Passel, 1990) who might otherwise not have obtained U.S. legal status.

When reported wage items cannot be matched to the earning records of individual workers, an electronic file for these holdings is created. When a mismatch occurs between the Social Security Administration (SSA) records and the name listed on the wages forms, individuals cannot receive the corresponding work credits. These files are contained in the Earnings Suspense File (OLCA, 2006). According to Olsen and Hudson (2009), in 2007, the Social Security Administration's Earnings Suspense file had \$661 billion unclaimed earnings. Technically, a legal immigrant is eligible to collect benefits from wages made as an undocumented immigrant, but few are thought to provide the required documentation (Goss et al., 2013). Many of these migrants may return to their country of origin prior to qualifying for benefits.

3. Data

We use the Mexican Health and Aging Study (MHAS) to examine these issues. Modeled after the Health and Retirement Study (HRS), the MHAS is one of the first panel surveys on the 50 and older population in the developing world, and is well-suited for examining older Mexican migrants as it over-sampled regions with strong U.S.-migration patterns. This nationally representative, three-wave survey was first conducted in 2001 and achieved a response rate of 90% out of 11,000 selected households. The second wave reinterviewed the sample in 2003, achieving a response rate of 94.22% (MHAS, 2004, Wong and Espinoza, 2004). The third wave interviewed individuals in 2012 and added new respondents to ensure representativeness of the 50-and-older population. More than 14,000 individuals in the 2001 and 2003 waves were reinterviewed in 2012, with the sample now totaling 20,927 individuals and having an overall response rate of 88% (INEGI, 2013).

3.1 Sample

Our main sample includes Mexican-born males living in Mexico ages 50 years and older who reported having ever been to the U.S. Table 1 describes how we obtained the sample for this analysis and the type and number of interviews dropped from the total sample. Our sample excludes proxy responses since proxies were not asked a battery of questions related to migration

experiences within the U.S. Proxy interviews represented 11% (N=635/5,747) of all males ages 50 and older in 2003 and 9% in 2012 (N=608/6,452).

In both 2003 and 2012, approximately 16% of Mexican males in Mexico ages 50 years and older reported having lived or worked in the U.S. at some point. We used the 2001, 2003, and 2012 waves to build a variable indicating whether a respondent reported living or working in the U.S. in any of the three waves using the following question: “Have you ever worked/lived in the U.S.?”²

Table 1. Proportion of Mexican males living in Mexico age 50 years and older who reported having lived in the United States at one point, 2003 and 2012 cross-sections (unweighted)

	2003		2012	
	N	%	N	%
<i>Panel A: Sample</i>				
Total Sample	5,747	100.00	6,452	100.00
Proxy Interviews	635	11.04	608	9.42
Non-proxy (Our sample)	5,112	88.96	5,844	90.58
<i>Panel B: Proportion who reported having lived or worked in the United States at one point</i>				
Never lived in U.S.	4,289	83.90	4,918	84.20
Lived or worked in U.S.	818	16.00	913	15.60
Total missing	5	0.10	13	0.22
DK	5	0.10	2	0.00
N/A – skip pattern issue	0	0.00	10	0.20
RF	0	0.00	1	0.00
Total (non-proxy)	5,112	100.00	5,844	100.00
<i>Panel C: Proxy Interviews for eligible respondents who reported having lived or worked in the United States at one point</i>				
Total lived or worked in U.S.	926	100.00	1,017	100.00
Proxy	108	11.67	104	10.23
Non-proxy	818	88.34	913	89.77

Notes: Panel B: “N/A – skip pattern issue” includes individuals treated as follow-up respondents but who were only interviewed in 2012. In 2012, these respondents were only asked if they had been to the United States since the last interview, not if they had ever been to the United States.

Source: Authors’ calculations using the 2001, 2003, and 2012 Mexican Health and Aging Survey (MHAS).

² We only use the MHAS 2001 wave to reconstruct migration history and to check the consistency of the responses for the same individual across the three waves (2001, 2003, and 2012).

We exclude females due to their small sample size. Moreover, previous studies find that female employment is concentrated in the informal sector (e.g. Gonzalez-Baker, 1997, Salcido and Menjivar, 2012). Therefore, females are potentially less likely to contribute to the U.S. Social Security system and may require more detailed information regarding their migration and labor histories to interpret the results. We compared all estimates with and without the use of MHAS-provided sampling weights. We found minimal substantive differences across estimates and present unweighted estimates since they are more efficient (Korn and Graubard, 1999).

Of all males 50 years and older with U.S. migration experience, only 108 had proxy interviews in 2003 and 104 had such interviews in 2012 (see Table 1: Panel C). We compare the demographic characteristics and migration history variables of proxy and nonproxy respondents in both years to assess possible bias in excluding these respondents from the analysis (see appendix “proxy analysis”). We found that a higher proportion of proxy interviews spent more time in the U.S.

3.2 Dependent variables

MHAS solicits information as to whether the respondent contributed to the U.S. Social Security system with the following question: “Did you ever contribute to the Social Security system in the U.S.?” Importantly, this question is likely to underestimate the proportion of all return migrants who contributed to the U.S. Social Security system since some migrants will not have been aware of their contributions. For this reason, our estimates likely represent a conservative lower bound. These estimates may also be downward biased by the proxy interviews which were excluded from the analysis. This question can only be analyzed in the 2003 and 2012 waves because it was not asked in 2001.

We also examine the extent to which U.S. migration experience may influence the probability of working into late life. The outcome variable is an indicator that equals one if the respondent was working in 2012 and zero otherwise. Respondents may or may not receive retirement benefits as a result of their employment status, but we classify them as retired if they self-report not working and not looking for another job.

3.3 Independent variables

The independent variables include socioeconomic characteristics: age, education, marital status, and net wealth (only available for the 2003 wave). We also include current self-reported health status. Other variables describe respondents’ migration histories. We examine the number

of years in the U.S., English proficiency, and citizenship/permanent residency status. However, citizenship/permanent residency status had a large number of missing values due to questionnaire skip patterns. In 2001, some interviewees reported having never been to the U.S., and in 2003, reported having been to the U.S., but not within the previous two years. Unfortunately in 2003, those who had not been to the U.S. within the previous two years skipped out of a battery of immigration questions including their U.S. citizenship. This situation applies to a nontrivial 29.4% of the final sample in 2003 and 11.0% in 2012. We assessed the level of bias this contradictory information might create by comparing the demographic characteristics of respondents who did and did not fall into this category. We found that based on their demographic characteristics and migration histories, interviewees with a dispute were likely not U.S. citizens or legal permanent residents (see appendix “Dispute analysis”).

We also examined whether the respondent’s main job was ever in the U.S. To solicit this information, respondents were first asked to think about the activities they did in their primary job throughout their lives or in the greater part of their lives. They were then asked “Did you ever perform this main job in the U.S.?” We include this variable to elucidate labor force ties in the U.S. Respondents may have spent many years in the U.S. without working or have worked in transient employment they did not regard as their primary employment. This variable reflects the respondent’s perception as to the importance of U.S. employment relative to their employment in Mexico.

In addition, we examine the respondent’s main occupational industry in the U.S. Interviewees were asked “During the longest visit in the U.S., what kind of job did you do most of the time?” It is important to note that respondents may have worked in the U.S. at some point but not during their longest stay in the U.S.

We also explore the possible effect of IRCA on U.S. Social Security contributions by flagging migrants who may have been legalized under this legalization. This information is not directly available from the data, but we leverage information on the stipulations of IRCA to recreate a proxy. A respondent was categorized as a (1) potential IRCA LAW migrant if he arrived to the U.S. before 1982, spent at least five years in the U.S., and last returned from the U.S. after 1987, and (2) a potential SAW migrant if he arrived to the U.S. before 1986, last returned from the U.S. after 1987 and whose main job was in agriculture in the U.S. We must

reiterate that this variable is not meant to capture IRCA migrants *per se*, but only *potential* IRCA migrants based on their employment and migration histories.

Respondents are also asked whether they received U.S. Social Security benefits and whether they expect to receive U.S. Social Security benefits in the future. Due to questionnaire skip patterns, it was not possible to generate estimates for this outcome in 2003.

Other variables included in the analysis are labor related characteristics: total years worked, main occupation in life, and contributions to a Mexican Social Security system that provides retirement benefits in old age in Mexico.

4. Empirical Methods

In section 5, we present descriptive statistics of the proportion of return migrants that contributed to the U.S. Social Security system and those that receive or expect to receive Social Security benefits. We also show the socioeconomic and labor characteristics, health, and migration histories of return migrants who did and did not contribute to the U.S. Social Security system.

In section 6, we estimate a probit model describing the predictors of having contributed to the U.S. Social Security for 2003 and 2012, separately. The model is:

$$Pr(C_i = 1) = \Phi(\alpha_0 + \alpha_1 X_i + \alpha_2 M_i) \quad (1)$$

where Pr denotes probability; $C_i = 1$ if migrant i reported having contributed to the U.S. Social Security system; Φ is the cumulative distribution function of the normal distribution; X_i is a matrix of socioeconomic characteristics that includes age, education, and marital status; and M_i is a matrix of migration history variables including years in the U.S., main job in the U.S. at some point, main industry in the U.S., and citizenship/permanent residency. The parameters $\alpha_0, \alpha_1, \alpha_2$ are estimated by maximum likelihood and we present the estimates of the average marginal effects. The sample only includes individuals with U.S. migration experience.

Initially, we intended to estimate a descriptive probit model of the predictors of receiving or expecting to receive U.S. Social Security upon retiring among return migrants, conditional on having contributed to the U.S. Social Security system. However, since such a small proportion of individuals fall into this category (5.1% in 2012), we could not estimate these models via regression analysis (a more detailed explanation of the sample sizes for this group is in Section 5).

In section 7, we analyze labor force transitions from working in 2003 to not working between in 2012 among all males ages 50 years and older who were employed in 2003. As previously stated, we include all males ages 50 and older who were employed in 2003 (not just return migrants) to determine the effect of U.S. migration experience on this outcome. We estimate a probit model describing the predictors of transitioning from working status in 2003 to not working in 2012, i.e. of not working in year t , conditional on being employed in year $t-1$. This model has the following form:

$$Pr(R_{it} = 1|E_{it-1}) = \Phi(\alpha_0 + \alpha_1 X_{it-1} + \alpha_2 M_{it-1} + \alpha_3 H_{it-1} + \alpha_4 L_{it-1}) \quad (2)$$

where Pr denotes probability; $R_{it} = 1$ if individual i had retired (not working) by year t , conditional on having been employed in year $t-1$; $E_{it-1} = 1$; Φ is the cumulative distribution function of the normal distribution; X_{it-1} is a matrix of socioeconomic variables that includes age, education, marital status, and net wealth; M_{it-1} is number of years in the U.S.; H_{it-1} is self-reported health status; and L_{it-1} is a matrix of labor characteristics including main industry of work in life and total years worked. The parameters $\alpha_0, \alpha_1, \alpha_2, \alpha_3, \alpha_4$ are estimated by maximum likelihood and we present the estimates of the average marginal effects. This is a descriptive model that may suffer of endogeneity due to unobserved characteristics correlated with the independent variables, particularly the migration and labor variables.

5. Descriptive Statistics

5.1 Male Return Migrants and U.S. Social Security Contributions

Table 2 shows that among respondents who reported having returned from the U.S. at some point, 40% and 32% reported having contributed to the U.S. Social Security system in the 2003 and 2012 waves, respectively (panel A). As previously noted, these are conservative estimates that do not capture migrants who contributed to the U.S. Social Security system but were unaware of having done so. It is worth noting that more than half of males (56.5% in 2003 and 61.6% in 2012) reported not contributing to the U.S. Social Security system. This may imply that a large proportion of individuals worked in noncompliant firms in the U.S.

It is not possible to ascertain the exact number of years migrants worked in the U.S., only the total number of years they lived or worked in the U.S. As Mexican males are heavily driven to the U.S. for employment considerations (Cerrutti and Massey, 2001), it is not farfetched to assume they worked most, if not all, of the years they spent in the U.S.

Table 2. Proportion of Mexican males living in Mexico age 50 years and older, 2003 and 2012 cross-sections (unweighted)

	2003		2012	
	N	%	N	%
<i>Panel A: Proportion who reported having ever contributed to the U.S. Social Security System</i>				
Total who <i>Lived in U.S.</i>	818	100.00	913	100.00
Didn't contribute	462	56.50	562	61.60
Contributed	328	40.10	292	32.00
Missing	28	3.42	59	6.46
DK	28	3.40	16	1.80
N/A – Other missing	0	0.00	7	0.80
N/A - Proxy in previous year	0	0.00	36	3.90
<i>Panel B: Proportion who reported receiving or expecting to receive U.S. Social Security Benefits</i>				
Total who <i>Contributed</i>	328	100.00	292	100
Don't receive or expect to receive	N/A	N/A	275	94.20
Receive or expect to receive	N/A	N/A	15	5.10
RF	-	-	2	0.70

Notes: Panel A: "N/A - Other missing" includes respondents who only interviewed in 2001 and 2012, and did not visit the U.S. between 2003 and 2012. These respondents indicated having lived in the U.S. in 2001 but were not asked whether they contributed to the U.S. Social Security system in 2003 since they did not interview that year. They were also not asked this question in 2012 since they had not been to the U.S. between 2003 and 2012. The category "N/A – Proxy" signals direct follow-up respondents who had proxy interviews in 2003 and reported not having been to the U.S. between 2003 and 2012. In 2003, follow-up proxy respondents were not asked whether the sampled individual had ever contributed to the U.S. Social Security system. Since the sampled individual did not travel to the U.S. since 2003, he was not asked in 2012 whether he had ever contributed to the U.S. Social Security system. Panel B: N/A is not available due to skip patterns of the questionnaire.

Source: Authors' calculations using the 2003 and 2012 Mexican Health and Aging Survey (MHAS).

Furthermore, in 2012, of those who contributed to the U.S. Social Security system, only five percent, received or expected to receive benefits (Table 2: Panel B). This result supports the Office of the Chief Actuary's belief that relatively few migrants who could potentially draw benefits do so (Goss et al., 2013).

5.2 Socioeconomic Characteristics and Health Status of Return Migrants who Contributed to the U.S. Social Security System

Table 3 shows that, in 2003, most return migrants who had contributed to U.S. Social Security system were younger than 70 years of age (64.0%) and were clustered at basic levels of education. Only five percent reported having a college degree and at the time of the interview, 8 out of 10 were married or in civil union. We used a Pearson chi-square test to test differences in

categorical variables and a t-test for continuous variables among respondents who did and did not report having contributed in 2003 and 2012. Statistically significant differences between the distribution of variables (not individual categories) are punctuated with asterisks in the first category for each variable next to the number of migrants who did not contribute for 2003 and 2012.

We find differences among those who reported having contributed to the U.S. Social Security system in 2003. A higher proportion was between the ages of 60 and 80 (71.7%) compared to those who did not contribute (59.5%), and a higher proportion did not complete an elementary school education (21.3% versus 29.0%, respectively).

Comparing 2012 results to 2003, return migrants who contributed to the U.S. Social Security system were older than those who did not contribute (see Table 3). Approximately one-third of those who did not contribute were less than 60 years of age (33.1%). In contrast, those who contributed to the U.S. Social Security system were concentrated in the oldest categories. More than half of return migrants in this group were ages 70 and older (52.8%). In 2012, there was also an increase in the proportion that had completed high school and college among those who did and did not contribute compared to 2003. The percentage of return migrants with a college education in 2012 (n of both groups) was almost double corresponding 2003 levels (5% of both groups). In contrast, marital status was almost identical in 2003 as in 2012. In 2003, a higher proportion of males that did not contribute reported fair and poor health compared to those who did contribute. In 2012, self-reported health status was similar for those that did and did not contribute. In 2003, we do not find a statistically significant difference between both groups in terms of net wealth.

Table 3. Socioeconomic Characteristics and Health Status of Mexican return migrant males age 50 years and older who lived in the U.S., 2003 and 2012 cross-sections (unweighted)

	2003				2012			
	Did not contribute		Contributed		Did not contribute		Contributed	
	N	%	N	%	N	%	N	%
Total	462	100.00	328	100.00	562	100.00	292	100.00
Age								
50-59	129***	27.90	68	20.70	186***	33.10	56	19.20
60-69	167	36.10	136	41.50	171	30.40	82	28.10
70-79	108	23.40	99	30.20	139	24.70	103	35.30
80+	58	12.60	25	7.60	66	11.70	51	17.50
Education								
None	134	29.00	70	21.30	107	19.00	55	18.80
Primary	287	62.10	231	70.40	377	67.10	196	67.10
High school	15	3.20	9	2.70	25	4.40	12	4.10
College	23	5.00	16	4.90	51	9.10	27	9.20
DK	0	0.00	1	0.30	0	0.00	0	0.00
N/A – Other missing	3	0.60	1	0.30	2	0.40	2	0.70
Marital status								
Single/Divorced/Separated	42	9.10	25	7.60	54***	9.60	21	7.20
Married/Civil union	377	81.60	262	79.90	463	82.40	222	76.00
Widowed	43	9.30	41	12.50	45	8.00	49	16.80
Net Wealth (tertile)								
1st	100	21.65	69	21.04	N/A		N/A	
2nd	151	32.68	105	32.01	N/A		N/A	
3rd	156	33.77	120	36.59	N/A		N/A	
N/A - missing	55	11.90	34	10.37	N/A		N/A	
Self-reported health								
Excellent	11	2.38	6	1.83	25	4.46	14	4.79
Very good	16	3.46	12	3.66	28	4.98	15	5.14
Good	131	28.35	110	33.54	175	31.14	88	30.14
Fair	185	40.04	141	42.99	269	47.86	134	45.89
Poor	119	25.76	59	17.99	64	11.39	41	14.04
RF	0	0.00	0	0.00	1	0.18	0	0.00

Notes: Respondents who did not provide information as to whether they contributed to the U.S. Social Security system are not included in total values. For education, a value of “N/A – Other missing” indicates that the respondent was not asked this question due to questionnaire skip patterns. These respondents were not interviewed in 2001, but were treated as follow-up respondents in 2003 and not asked their highest level of education. For net wealth, a value of “N/A – missing” corresponds to nonresponse due to refusal or don’t know. For 2012, N/A indicates the data for net wealth is not available for the 2012 wave.

*p<0.10, **p<0.05, ***p<0.01

Source: Authors’ calculations using the 2003 and 2012 Mexican Health and Aging Survey (MHAS).

5.3 Migration History of Return Migrants that Contributed to the U.S. Social Security System

Perhaps the most prominent differences among those who did and did not contribute to U.S. Social Security system were in their migration histories. We indicate statistically significant differences in the column showing the number of migrants who did not contribute for 2003 and 2012. On average, those who contributed to the U.S. Social Security system lived in the U.S. Seven years, roughly double that of those who did not contribute (3.2 years) and more than double were U.S. citizens or legal permanent residents (15.3% versus 6.5%, respectively). As

previously stated, those who contributed are only eligible to receive U.S. Social Security benefits if they obtained U.S. legal status before retirement and contributed to the U.S. Social Security system for at least 40 quarters (10 years). We find that in 2003, 15% of return migrants who had contributed were U.S. citizens or legal permanent residents, and 22% spent at least 10 years in the U.S. These numbers were 21% and 22% in 2012, respectively (see Table 4). The relatively low proportion of return migrants who were U.S. citizens/legal permanent residents helps explain why so few of those who contributed expected to collect benefits in the future (5.1% in 2012, Table 2).

Comparing 2012 results to 2003, a larger proportion of return migrants who reported having contributed to the U.S. Social Security system were U.S. citizens or legal permanent residents in 2012 (21.2%) than in 2003 (15.3%). In 2003 and 2012, a higher proportion of males that contributed report speaking English than those that did not contribute. In 2003, almost one-third of return migrants who contributed to the U.S. Social Security reported having had their main job in the U.S. (31.1%) (Table 4). This number was only one-fifth among those who did not contribute (21.9%). The main industries in which those who did and did not contribute to the U.S. Social Security system while in the U.S. were agriculture (64.3% versus 60.4%, respectively), followed by construction (19.5% versus 17.7%, respectively) and nonprofessional services (14.30% versus 14.50%, respectively).

In 2012, a larger proportion of both contributors and noncontributors also reported having had their main jobs in the U.S. at some point. This proportion increases from 31.1% in 2003 to 36.0% in 2012 among those who contributed, and from 21.9% to 28.5% among those who did not contribute. A dramatic shift occurred between both years in the type of work industry reported in the U.S. The percentage of contributors who reported working in the construction in the U.S. increased from 19.5% in 2003 to 25.3% in 2012 and from 17.7% in 2003 to 23.5% in 2012 among noncontributors. Conversely, the proportion that reported having worked in the agriculture sector decreased approximately 15 percentage points for both groups (contributors and noncontributors). The proportion that was potentially IRCA migrants was slightly higher for contributors (9.1% in 2003 and 13.7% in 2012) than for non-contributors (4.5% in 2003 and 7.5% in 2012).

Table 4. Migration History of Mexican return migrant males age 50 years and older who lived in the U.S., 2003 and 2012 cross-sections (unweighted)

	2003				2012			
	Did not contribute		Contributed		Did not contribute		Contributed	
	N	%	N	%	N	%	N	%
Total	462	100.00	328	100.00	562	100.00	292	100.00
Years in U.S.								
Mean	3.2***		7		3.9***		7.1	
Standard deviation	(4.6)		(10.5)		(5.9)		(10.5)	
Median	1		3		1		3	
English fluency								
Does not speak English	391***	84.63	243	74.09	447	79.54	224	76.71
Speaks English	57	12.3	83	25.30	115	20.46	68	23.29
N/A – Other missing	3	0.65	1	0.30	0	0.00	0	0.00
Refused	1	0.22	1	0.30	0	0.00	0	0.00
Citizenship status in the U.S.								
Permanent resident	26***	5.60	38	11.60	34***	6.00	48	16.40
Citizen	4	0.90	12	3.70	7	1.20	14	4.80
Neither	290	62.80	213	64.90	454	80.80	192	65.80
DK	1	0.20	0	0.00	3	0.50	0	0.00
N/A - Skip pattern issue	136	29.40	62	18.90	62	11.00	36	12.30
N/A - Other missing	3	0.60	1	0.30	1	0.20	1	0.30
RF	2	0.40	2	0.60	1	0.20	1	0.30
Main job in U.S. at some point								
No	336**	72.70	218	66.50	402	71.50**	187	64.00
Yes	101	21.90	102	31.10	160	28.50	105	36.00
DK	5	1.10	2	0.60	0	0.00	0	0.00
N/A – Other missing	3	0.60	1	0.30	0	0.00	0	0.00
RF	17	3.70	5	1.50	0	0.00	0	0.00
Main industry in U.S.								
Agriculture	279**	60.40	211	64.30	249	44.30**	145	49.70
Construction	82	17.70	64	19.50	132	23.50	74	25.30
Non-prof. service	67	14.50	47	14.30	111	19.80	50	17.10
Office/ prof.	4	0.90	1	0.30	10	1.80	1	0.30
Other	16	3.50	5	1.50	37	6.60	20	6.80
Didn't work	14	3.00	0	0.00	22	3.90	1	0.30
N/A – Proxy	0	0.00	0	0.00	1	0.20	0	0.00
RF	0	0.00	0	0.00	0	0.00	1	0.30
Potentially IRCA eligible								
No	317**	68.60	225	68.60	449	79.90***	195	66.80
Yes	21	4.50	30	9.10	42	7.50	40	13.70
DK	15	3.20	5	1.50	18	3.20	8	2.70
N/A – Proxy previous year	11	2.40	18	5.50	13	2.30	11	3.80
N/A – Year dispute 01/03	88	19.00	43	13.10	35	6.20	28	9.60
N/A – No 2001 interview	3	0.60	1	0.30	0	0.00	1	0.30
N/A – Yes/no migrant	0	0.00	0	0.00	0	0.00	1	0.30
N/A – Year dispute 03/12	0	0.00	0	0.00	1	0.20	4	1.40
N/A – RF	3	0.60	3	0.90	2	0.40	3	1.00
N/A – Year of arrival dispute	4	0.90	3	0.90	2	0.40	1	0.30

Notes: Respondents who did not provide information as to whether they contributed to the U.S. Social Security system are not included in total values. For English fluency, a value of “N/A – Other missing” was assigned to individuals who were not interviewed in 2001 but were treated as follow-up respondents in 2003. These individuals were not asked in 2003 whether they spoke English. For “Citizenship status in the U.S.,” a value of “N/A - Skip pattern issue” indicates that the respondent was not asked this question due to questionnaire skip patterns related to being a migrant. In 2001, these respondents reported not having ever been to the U.S. and in 2003, reported having been to the U.S. but not within the past two years. These respondents were not asked their citizenship status. Also for this variable, a value of “N/A – Other missing” indicates that the respondent was not interviewed in 2001 and did not travel to the U.S. in subsequent years. These respondents also were not asked their citizenship status. For “main job in U.S. at some point?” the category “N/A – Other missing” includes respondents who did not answer questions

about employment. “Main industry in the U.S.” indicates the respondent’s job during his longest period in the U.S. Those who reported not working during this trip may have worked during other trips. A value of “N/A – Proxy” for this variable indicates that the respondent had a proxy interview in a subsequent wave and did not work in 2012, so were not asked this question. An IRCA eligible migrant is defined as either (1) a probable SAW migrant (i.e., having arrived to the U.S. before 1986, worked in agricultural as part of his main job in the U.S. and returned to Mexico after 1987) or (2) a probable LAW migrant (i.e., having entered the U.S. before 1982, lived in the U.S. at least five years, and returned to Mexico after 1987). For this variable, a value of “N/A – Proxy previous” indicates that the respondent was directly interviewed that year, but had a proxy respondent in the previous wave and had missing information for this variable for this reason. A value of “N/A – Year dispute 01/03” indicates that in 2001, the respondent indicated having never been to the U.S. and in 2003, reported having been to the U.S. but not within the previous two years. These respondents were not asked a series of migration questions. A value of “N/A – No 2001 interview” indicates that the respondent had missing information because he was not interviewed in 2001. A value of “N/A – Yes/no migrant” indicates that the respondent reported having been to the U.S. in a previous wave, but reported not having ever been to the U.S. in a subsequent wave. A value of “N/A – Year dispute 03/12” indicates that in 2003, the respondent indicated having never been to the U.S. and in 2012, reported having been to the U.S. but not since the last interview. A value of “N/A – Year of arrival” indicates that in a previous wave, the respondent reported having been to the U.S., but when asked the year he first went, reported that he had never been to the U.S.

*p<0.10,**p<0.05,***p<0.01
Source: Authors’ calculations using the 2003 and 2012 Mexican Health and Aging Survey (MHAS).

5.4 Labor Characteristics of Return Migrants that Contributed to the U.S. Social Security System

In Table 5, we observe a change between 2003 and 2012 in the proportion of contributors who were employed. In 2003, 54.6% of those who contributed to the U.S. Social Security system were employed compared 45.9% in 2012. We indicate statistically significant differences between both groups in the column showing the number of migrants who did not contribute in 2003 and 2012. On average, both groups worked a total of 45 years in their lifetime. There was also a decrease in the average number of years working for both groups in 2012 compared with 2003.

In 2003, survey respondents reported having mainly worked in self-employed and fixed salary positions throughout their lives. Compared with 2003, in 2012, there was a small increase in the percentage of people with fixed salaries, and a similar decrease in the self-employed (see Table 5). We also find that 60% of those who did not contribute to the U.S. Social Security system in 2003 also did not contribute to the Mexican Social Security system. Both groups were also similar in the proportions who contributed to the Mexican Social Security system (37.2% versus 33.80%) in 2003.

Table 5. Labor characteristics of Mexican return migrant males ages 50 years and older in Mexico, 2003 and 2012 cross-sections (unweighted)

	2003				2012			
	Did not contribute		Contributed		Did not contribute		Contributed	
	N	%	N	%	N	%	N	%
Total	462	100.00	328	100.00	562	100.00	292	100.00
Working status								
Working	253	54.80	179	54.60	319***	56.80	134	45.90
Looking for work	6	1.30	6	1.80	15	2.70	5	1.70
Not working	202	43.70	143	43.60	228	40.60	153	52.40
Total Years Worked								
Mean	45.4		46.4		42.3**		44.7	
Standard deviation	(12.6)		(12.5)		(15.6)		(14.7)	
Median	45		49		44		46	
Main occupation in life								
Self-employed	162	35.10	135	41.20	174**	31.00	112	38.40
Employee in Co-op	1	0.20	1	0.30	3	0.50	0	0.00
Fixed salary	244	52.80	166	50.60	312	55.50	156	53.40
Employee on commission	35	7.60	18	5.50	48	8.50	11	3.80
No pay worker	4	0.90	1	0.30	3	0.50	0	0.00
Other	2	0.40	0	0.00	1	0.20	0	0.00
Never worked	2	0.40	0	0.00	16	2.80	6	2.10
DK	0	0.00	1	0.30	1	0.20	2	0.70
N/A - Other missing	9	1.90	6	1.80	4	0.70	5	1.70
RF	3	0.60	0	0.00	0	0.00	0	0.00
Contributed to a Mexican Social Security System								
No	278	60.20	210	64.00	343	61.00	191	65.40
Yes	172	37.20	111	33.80	213	37.90	95	32.50
DK	4	0.90	3	0.90	3	0.50	2	0.70
N/A – Other missing	3	0.60	1	0.30	2	0.40	2	0.70
RF	5	1.10	3	0.90	1	0.20	2	0.70

Notes: Total values do not include respondents who had missing values for whether they contributed to the U.S. Social Security system. For “main occupation in life,” the category “N/A - Other missing” was assigned to respondents who were missing information either because they were not interviewed in a previous wave or they refused to answer the question in a previous waves. The variable “Contributed to Mexican Social Security” indicates whether the respondent contributed to IMSS, ISSSTE, a savings retirement savings system (SAR), or an Afore in the main job they had throughout their life. In 2003, a value of “N/A – Other missing” for this variable was assigned to respondents who did not interview in 2001 but were treated as follow-up respondents in 2003. In 2003, follow-up respondents were not asked whether they contributed to Mexican Social Security systems. In 2012, a value of “N/A – Other missing” was assigned to respondents who did not interview in 2001, were treated as follow-up surveys in 2003, and did not work between 2003 and 2012.

*p<0.10, **p<0.05, ***p<0.01

Source: Authors’ calculations using the 2003 and 2012 Mexican Health and Aging Survey (MHAS).

6. Who are more likely to Contribute to the U.S. Social Security System?

We attempt to obtain a fuller picture of the characteristics associated with having contributed to the U.S. Social Security system via a probit regression model (Table 6). Using this model, we begin to disentangle the factors possibly influencing a return migrant’s propensity to have contributed while controlling for other factors that might matter in this context. We present models which do and do not control for citizenship status to assess the extent to which the large number of missing values for this variable alters coefficients. Columns (2) for 2003 and (4) for

2012 do not control for citizenship status. The similar coefficients across models suggest that cases missing citizenship status do not substantially bias estimates.

Table 6. Probit model describing the predictors of having contributed to the U.S. Social Security system among Mexican males in Mexico ages 50 years and older who at some point lived in the United States, 2003-2012 cross-sections (average marginal coefficients - unweighted)

Variables	2003		2012	
	$\beta/(se)$ (1)	$\beta/(se)$ (2)	$\beta/(se)$ (3)	$\beta/(se)$ (4)
Age Group: Omitted 50-59				
60-69	0.0964* (0.0527)	0.0915** (0.0450)	0.1089*** (0.0405)	0.1101*** (0.0397)
70-79	0.1102* (0.0604)	0.1022** (0.0509)	0.2034*** (0.0472)	0.2061*** (0.0432)
80+	-0.0054 (0.0749)	-0.0569 (0.0634)	0.2084*** (0.0641)	0.1886*** (0.0590)
Education: Omitted No schooling				
Elementary school	0.0995** (0.0465)	0.1000** (0.0392)	0.0160 (0.0433)	0.0415 (0.0395)
High school	0.1387 (0.1273)	0.0926 (0.1042)	0.0783 (0.0871)	0.0953 (0.0888)
College	0.2707** (0.1128)	0.2418** (0.0964)	0.1288 (0.0785)	0.1526** (0.0740)
Marital Status: Omitted Single/divorced/separated				
Married/Civil union	0.0604 (0.0732)	0.0778 (0.0611)	0.0128 (0.0563)	0.0319 (0.0540)
Widowed	0.1266 (0.0924)	0.1642** (0.0789)	0.1682** (0.0808)	0.1765** (0.0756)
Years in the U.S.: Omitted 1-9 years				
10-19 years	0.2801*** (0.0685)	0.2710*** (0.0636)	0.0752 (0.0552)	0.1143** (0.0547)
20+	0.3811*** (0.0829)	0.3621*** (0.0713)	0.1651** (0.0818)	0.3056*** (0.0737)
Main Industry in US: Omitted Agriculture				
Construction	0.0125 (0.0560)	-0.0023 (0.0470)	0.1046** (0.0449)	0.0562 (0.0429)
Nonprofessional services	-0.0461 (0.0583)	-0.0323 (0.0511)	0.0232 (0.0470)	-0.0081 (0.0447)
Other	-0.3037*** (0.1022)	-0.2461*** (0.0767)	-0.0023 (0.0674)	-0.0343 (0.0649)
Didn't work	0.0000 (.)	0.0000 (.)	-0.2822*** (0.0397)	-0.3029*** (0.0416)
Citizen/Legal Permanent Resident	0.0608 (0.0689)		0.2209*** (0.0573)	
Observations	569	770	741	844

Notes: Robust standard errors are presented. The variable "Main industry in the U.S." indicates the type of occupation the respondent had during his longest trip to the U.S. Thus, individuals who reported not having worked during this trip may have worked during other visits to the U.S.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Source: Authors' calculations using the 2003 and 2012 Mexican Health and Aging Survey (MHAS).

Results do not substantially differ across years. We find that higher levels of education and more years in the U.S. are significant predictors of having contributed to the U.S. Social Security system. Specifically, males with completed elementary school are 9.9 percentage points more likely to have contributed to the U.S. Social Security system than males with no schooling. Males who completed college were 27.0 percentage points more likely to have contributed than males with no schooling. In terms of U.S. migration experience, respondents with 10 to 19 years in the U.S. are 28.0 percentage points more likely to have contributed than respondents who spent only 1-9 years in the U.S. Respondents with more than 20 years in the U.S. were 38.1 percentage points more likely to have contributed than those who spent only one to nine years in the U.S. We also find that respondents with U.S. citizenship or legal permanent residence were more likely to report having contributed to the U.S. Social Security system.

7. Who are more likely to transition to retirement?

As previously noted, return migrants' contributions to the U.S. Social Security system may come at the expense of their own economic security during later life. It is possible that in dividing their careers between Mexico and the U.S., return migrants may not qualify for Social Security benefits in either country upon reaching retirement age. In this section, we include in the analysis Mexican males who had never been to the U.S. in order to understand whether return migrants are more or less likely to retire than Mexican males with no U.S. migration experience.

We take a closer look at labor force transitions by regressing nonemployment in 2012 on years in the U.S. and various other 2003 demographic, labor, and migration history characteristics among males who were employed in 2003 (see Table 7). We find a U-shape pattern in this relationship. Compared with those who never lived in the U.S. as of 2003, those who spent 1 to 9 years in the U.S. had a 5.9 percentage points lower probability of not working in 2012 ($p < 0.10$). In contrast, those who spent 20 or more years in the U.S. were 27 percentage points more likely to not be working in 2012 ($p < 0.10$).

This finding may reflect a threshold effect of U.S. migration experience on the probability of retirement. Those who spent less than 10 years in the U.S. may have disrupted their work trajectories in Mexico such that they were less prepared for retirement than their non-U.S. migrants upon reaching retirement age. In contrast, those who spent more than 20 years in

the U.S. may have had sufficient time to accumulate resources in the U.S. with which to retire earlier. These resources may include U.S.-acquired savings or property in Mexico.

Table 7. Probit model describing the predictors of not working in 2012 among Mexican employed males in Mexico ages 50 years and older (average marginal coefficients - unweighted)

Variables	β /(se)
Age Group: Omitted 50-59	
60-69	0.1413*** (0.0274)
70-79	0.2375*** (0.0428)
80+	0.3313*** (0.0864)
Education: Omitted No schooling	
Elementary school	-0.0119 (0.0305)
High school	-0.0487 (0.0599)
College	-0.0764 (0.0508)
Marital Status: Omitted Single/divorced/separated	
Married/Civil unión	0.0665 (0.0448)
Widowed	0.1275** (0.0645)
Years in the U.S.: Omitted Never in U.S.	
1-9 years	-0.0589* (0.0346)
10-19 years	0.0453 (0.1310)
20+	0.2701* (0.1552)
Self-reported health: Omitted Excellent	
Very good	0.0471 (0.1057)
Good	0.1208 (0.0910)
Fair	0.1669* (0.0911)
Poor	0.2358** (0.0973)
Main industry in life: Omitted self employed	
Employee fixed salary	0.0830*** (0.0247)
Other employee	-0.0216 (0.0484)
No pay worker	0.0811 (0.1569)
Total years worked	-0.0009 (0.0014)

Net wealth (tertile): Omitted 1st

2nd	-0.0673** (0.0315)
3rd	-0.0233 (0.0315)
Observations	1,810

Notes: Robust standard errors are presented. This model only includes respondents who were employed in 2003 and were alive in 2012. For “main industry in life,” the category “Other employee” includes employees who worked in a co-op, commission employees and those who reported working in “other” industries. The category “No pay worker” includes those who reported being family workers without pay and non-family workers without pay.

* p<0.10, ** p<0.05, *** p<0.01

Source: Authors’ calculations using the 2003 and 2012 Mexican Health and Aging Survey (MHAS).

We also find that, not surprisingly, older people had a higher probability of not working in 2012. Compared with those ages 50 to 59 in 2003, the probability of not working increased by 14.1, 23.7, and 33.1 percentage points, respectively, for every 10 years of age. Education did not have a significant effect on the probability of working. Moreover, those who were widowed had a higher probability of not working in 2012 compared with those who were single. Also not surprisingly, lower self-reported health was associated with not working in 2012. Compared to those who reported being in excellent health, those with fair and poor self-reported health were 16.7 and 23.6 percentage points more likely to report not working in 2012, respectively. Compared with self-employed workers, those employed with a fixed salary were 8.3 percentage points more likely to report not working. Finally, those in the 2nd tertile of net wealth had a statistically significant reduction of 6.7 percentage points on the probability of not working.

8. Summary and Limitations

This is the first study to analyze Mexican return migrants who contributed to the U.S. Social Security system and their eligibility to collect benefits. We use the 2003 and 2012 MHAS to examine contributions to the U.S. Social Security system among Mexican males ages 50 years and older who at some point returned from the U.S. These data provide the unique opportunity to analyze a difficult to reach population absent from most U.S. databases. We suspect that since these migrants were interviewed in Mexico and not in the U.S, they may have less incentives to inaccurately answer questions about their migration histories, legal status in the U.S., and contributions to the U.S. Social Security system.

This is a timely topic given that at least half of migrants who were legalized under the 1986 Immigration and Reform Control Act (IRCA) were 55 years old or older in 2012. The main

empirical finding is that, in 2003, 40% of return migrants reported having contributed to the U.S. Social Security system while in the U.S. This number was 32% in 2012. Moreover, of those who contributed, few received or expected to receive U.S. Social Security benefits (5.1% in 2012). Several factors emerge as possible explanations. The decline in the proportion of individuals that report contributing to the U.S. Social Security system between 2003 to 2012 may be due to a higher proportion of legalized migrants under IRCA that may have chosen to stay and retire in the U.S. Our results show that few of those who contributed and returned to Mexico had acquired U.S. legal status by the time of the survey which is requisite to collecting benefits as of 2004 (Goss et al. 2013). Technically, a legal immigrant is eligible to collect benefits from wages made as an undocumented immigrant but few are thought to provide the required documentation (Goss et al. 2013).

We also find that, compared to those who did not contribute to the U.S. Social Security system, those who contributed were more likely to be U.S. citizens or legal permanent residents, report higher levels of education (college education or more), and spent more years in the U.S. Furthermore, we examined the transitions to retirement among males who were employed in 2003. We find a U-shaped relationship between U.S. migration experience and the probability of transitioning out of employment between 2003 and 2012. Those who spent between one and nine years in the U.S. were less likely to not be working in 2012 compared to those who had never been in the U.S. In contrast, those who spent 20 or more years were more likely to be not working as of 2012.

Several limitations are worth noting. We examine the characteristics associated with having contributed to the U.S. Social Security system but we do not establish causal inference given the possibility of endogeneity bias. Nonetheless, this analysis provides a descriptive portrait that may be helpful in projecting the future effects of emigration on the U.S. Social Security system. We also do not examine women due to small sample sizes.

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Appendix

A. Dispute Analysis

We used a Pearson chi-square test to test differences in categorical variables and a t-test for continuous variables among respondents with and without a dispute. We indicate statistically significant differences between the distribution of variables (not individual categories) across both groups in the column for individuals with no dispute and in the first category for each variable. The results are shown in Table I. A dispute is defined as someone who in 2001, reported not having ever been to the U.S. and in 2003, reported having been to the U.S. but not within the last two years. We found that, in 2003, respondents with this dispute did not differ on any demographic and labor characteristics (i.e., age, education, marital status, main occupation in life, employment status, total years worked) but did differ on migration characteristics. The vast majority of those with a dispute (96.0%) reported not having ever had their main employment in the U.S. compared to 61.5% among those without a dispute, and they spent less time in the U.S. (2.9 years compared to 5.4 years among those without a dispute). These differences suggest that although it was not possible to determine whether respondents with contradictory information were U.S. citizens, they were likely not U.S. citizens or legal permanent residents.

The picture that emerges is quite different in 2012 (Table I). In this year, both groups had demographic and labor differences. Specifically, respondents with a dispute were older, less educated, more likely to have been self-employed in the main job they have throughout their lives (44.9% compared to 32.0% among those without a dispute), and worked a greater number of years (49.2) compared to those without a dispute (42.3). Aside from these demographic and labor differences, dispute respondents also spent less years in the U.S. (2.0) compared to non-dispute respondents (5.4) and were less likely to have not had their main employment in the U.S. at some point (96.9% versus 65.3%, respectively). As in 2003, it is likely that respondents with a dispute were not U.S. citizens or legal permanent residents.

Table I. Demographic and Labor Characteristics and Migration Histories of Mexican return migrant males age 50 years and older with and without a dispute, 2003 and 2012 cross-sections (unweighted)

	2003				2012			
	No dispute		Dispute		No dispute		Dispute	
	N	%	N	%	N	%	N	%
Total	592	100.00	198	100.00	756	100.00	98	100.00
Age								
50-59	152	25.70	45	22.70	241***	31.90	1	1.00
60-69	224	37.80	79	39.90	229	30.30	24	24.50
70-79	150	25.30	57	28.80	187	24.70	55	56.10
80+	66	11.10	17	8.60	99	13.10	18	18.40
Education								
None	149	25.20	55	27.80	135*	17.90	27	27.60
Primary	395	66.70	123	62.10	509	67.30	64	65.30
High school	16	2.70	8	4.00	36	4.80	1	1.00
College	27	4.60	12	6.10	72	9.50	6	6.10
DK	1	0.20	0	0.00	0	0.00	0	0.00
N/A – Other missing	4	0.70	0	0.00	4	0.50	0	0.00
Marital status								
Single/Divorced/Separated	56	9.50	11	5.60	70	9.30	5	5.10
Married/Civil union	472	79.70	167	84.30	608	80.40	77	78.60
Widowed	64	10.80	20	10.10	78	10.30	16	16.30
Main industry in life								
Self-employed	228	38.50	69	34.80	242**	32.00	44	44.90
Employee in co-op	2	0.30	0	0.00	3	0.40	0	0.00
Employee fixed salary	300	50.70	110	55.60	420	55.60	48	49.00
Employee on commission	39	6.60	14	7.10	56	7.40	3	3.10
No pay worker	5	0.80	0	0.00	3	0.40	0	0.00
Other	2	0.30	0	0.00	1	0.10	0	0.00
Never worked	1	0.20	1	0.50	22	2.90	0	0.00
DK	1	0.20	0	0.00	3	0.40	0	0.00
Missing	12	2.00	3	1.50	6	0.80	3	3.10
RF	2	0.30	1	0.50	0	0.00	0	0.00
Years in U.S.								
Mean	5.4***		2.9		5.4***		2.0	
Standard Deviation	(8.6)		(4.7)		(8.3)		(2.4)	
Median	2		1		2		1	
Main job in U.S. at some point?								
No	364***	61.50	190	96.00	494***	65.30	95	96.90
Yes	203	34.30	0	0.00	262	34.70	3	3.10
DK	5	0.80	2	1.00	0	0.00	0	0.00
N/A – Other missing	4	0.70	0	0.00	0	0.00	0	0.00
RF	16	2.70	6	3.00	0	0.00	0	0.00
Main industry in U.S.								
Agriculture	368	62.20	122	61.60	333*	44.00	61	62.20
Construction	107	18.10	39	19.70	187	24.70	19	19.40
Non-professional service	89	15.00	25	12.60	147	19.40	14	14.30
Office/professional	4	0.70	1	0.50	11	1.50	0	0.00
Other	11	1.90	10	5.10	54	7.10	3	3.10
Didn't work	13	2.20	1	0.50	22	2.90	1	1.00
N/A proxy prev. year	368	62.20	122	61.60	1	0.10	0	0.00
RF	0	0.00	0	0.00	1	0.10	0	0.00
Total years worked								
Mean	46.0		45.3		42.3		49.2	
Standard Deviation	(12.9)		(11.5)		(15.5)		(12.4)	

Notes: For education, “N/A – Other missing” is assigned to respondents who were not interviewed in 2001 but were treated as follow-up respondents in 2003 and not asked about their education. For main industry in life, “Missing” is assigned to (1) respondents who were not interviewed in 2001 but were treated as follow-up respondents in 2003 and not asked about their main industry, and (2) those who did not provide information on their main employment in during the previous interview. For main job in the U.S. at some point, “N/A-Other missing” is assigned to respondents who were not interviewed in 2001 but were treated as follow-up respondents in 2003 and had not been to the U.S. between 2001 and 2003. These respondents are not asked whether their main job was ever in the U.S. For main industry in U.S., a value of “N/A – proxy prev. year” indicates that the respondent had not been to the U.S. between 2003 and 2012 and had a proxy respondent in 2003.

*p-value<0.10, **p-value<0.05, ***p-value<0.01

Source: Author’s calculations using the 2003 and 2012 Mexican Health and Aging Survey (MHAS).

B. Proxy analysis

We compare the characteristics of males ages 50 and older who at some point returned from the U.S. with and without a proxy respondent in both 2003 and 2012. We used a chi-square test to test differences in categorical variables and a t-test to test differences in continuous variables. We indicate statistically significant differences between the distribution of variables (not individual categories) across both groups in the column for individuals with direct response and in the first category for each variable. Table II shows these results.

In 2003, we found that proxy respondents were concentrated at younger ages ($p < 0.05$) and were more likely to have reported not knowing the main industry in which they worked in their lives ($p < 0.01$). We also found that proxy respondents spent more time in the U.S. than direct respondents ($p < 0.01$). Of all male return migrants who were direct respondents, 86.7% were only in the U.S. between one and nine years. This compares to only 64.8% of proxy respondents.

In 2012, proxy respondents were more concentrated in the oldest age groups ($p < 0.10$). Twenty-four percent of proxy respondents were ages 80 and older compared to 14.30% of direct respondents. This year, proxy respondents were also less likely to have reported working in self-employed occupations (25.00%) than direct respondents (34.30%) ($p < 0.10$). As in 2003, proxy respondents reported having spent more years in the U.S. than direct respondents. Approximately 8.70% of proxy respondents spent 20 or more years in the U.S. compared to 5.305 of direct respondents.

Table II. Demographic and Labor Characteristics and Migration Histories of Mexican return migrant males age 50 years and older with and without proxy respondents in 2012 (unweighted)

	2003				2012			
	Direct respondent		Proxy respondent		Direct respondent		Proxy respondent	
	N	%	N	%	N	%	N	%
Total	818	100.00	108	100.00	913	100.00	104	100.00
Age								
50-59	200**	24.40	40	37.00	245*	26.80	23	22.10
60-69	312	38.10	34	31.50	272	29.80	32	30.80
70-79	221	27.00	20	18.50	265	29.00	24	23.10
80+	85	10.40	14	13.00	131	14.30	25	24.00
Education								
None	213	26.00	28	25.90	175	19.20	21	20.20
Primary	535	65.40	73	67.60	617	67.60	72	69.20
High school	24	2.90	3	2.80	37	4.10	5	4.80
College	41	5.00	3	2.80	80	8.80	5	4.80
DK	1	0.10	1	0.90	0	0.00	0	0.00
N/A – Other missing	4	0.50	0	0.00	4	0.40	1	1.00
Marital status								
Single/Divorced/Separated	71	8.70	4	3.70	80	8.80	12	11.50
Married/Civil union	661	80.80	96	88.90	728	79.70	77	74.00
Widowed	86	10.50	8	7.40	105	11.50	15	14.40
Main industry in life								
Self-employed	311***	38.00	41	38.00	313*	34.30	26	25.00
Employee in co-op	2	0.20	0	0.00	3	0.30	0	0.00
Employee fixed salary	422	51.60	53	49.10	497	54.40	62	59.60
Employee on commission	55	6.70	6	5.60	62	6.80	9	8.70
No pay worker	5	0.60	1	0.90	3	0.30	2	1.90
Other	2	0.20	0	0.00	1	0.10	1	1.00
Never worked	2	0.20	2	1.90	22	2.40	4	3.80
DK	1	0.10	4	3.70	3	0.30	0	0.00
N/A – Other missing	15	1.80	1	0.90	9	1.00	0	0.00
RF	3	0.40	0	0.00	0	0.00	0	0.00
Years in U.S.								
Mean	4.72***		8.86		5.05***		6.85	
(Standard Deviation)	(7.79)		(12.03)		(8.06)		(9.28)	
(Standard Error)	(0.27)		(8.86)		(0.27)		(0.95)	
1-9 years	709***	86.70	70	64.80	765***	83.80	73	70.20
10-19 years	66	8.10	18	16.70	95	10.40	13	12.50
20+ years	42	5.10	19	17.60	48	5.30	9	8.70
DK	1	0.10	1	0.90	4	0.40	9	8.70
RF	0	0.00	0	0.00	1	0.10	0	0.00
Main job in U.S. at some point?								
No	574**	70.20	69	63.90	628	68.80	62	59.60
Yes	209	25.60	31	28.70	285	31.20	42	40.40
DK	8	1.00	5	4.60	0	0.00	0	0.00
N/A – Other missing	4	0.50	0	0.00	0	0.00	0	0.00
RF	23	2.80	3	2.80	0	0.00	0	0.00
Total years worked								
Mean	45.91*		43.22		43.26		47.92	
(Standard Deviation)	(12.51)		(9.95)		(15.21)		(13.60)	
(Standard Error)	(0.46)		(1.16)		(0.52)		(2.18)	

Notes: Sample only includes males ages 50 years and older who at some point returned from the United States. For education, “N/A – Other missing” is assigned to respondents who were not interviewed in 2001 but were treated as follow-up respondents in 2003 and not asked about their education. For main industry in life, “N/A – Other missing” is assigned to (1) respondents who were not interviewed in 2001 but were treated as follow-up respondents in 2003 and not asked about their main industry, and (2) those who did not provide information on their main employment in during the previous interview.

For main job in the U.S. at some point, “N/A-Other missing” is assigned to respondents who were not interviewed in 2001 but were treated as follow-up respondents in 2003 and had not been to the U.S. between 2001 and 2003. These respondents are not asked whether their main job was ever in the U.S.

*p-value<0.10, **p-value<0.05, ***p-value<0.01

Source: Author’s calculations using the 2012 Mexican Health and Aging Study (MHAS).