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Retirement and health benefits for Mexican migrant workers returning from the United States

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Abstract

In the absence of a bilateral agreement for the portability and totalization of social security contributions between the United States and Mexico, this article examines the access to pension and health insurance benefits and employment status of older Mexican return migrants. We find that return migrants who have spent less than a year in the United States have a similar level of access to social security benefits as non-migrants. Return migrants who have spent at least a year in the United States are less likely to have public health insurance or social security benefits, and could be more vulnerable to poverty in old age. These results inform the debate on a bilateral social security agreement between the United States and Mexico to improve return migrants' social security.

Keywords

migrant worker; retirement benefits; health insurance; Mexico; United States

Introduction

Mexico is undergoing a significant demographic transition due to increasing life spans and lower fertility rates. The older population in Mexico is growing rapidly, with a 268 per cent increase expected by 2040 (Consejo Nacional de Población, 2010). Of the 25 countries in the world with the largest older population in 2008, Mexico ranked number 15, with at least 6.7 million individuals aged 65 or older (Kinsella and He, 2009). With this ageing of society comes a need for policy-makers and individuals and their families to understand the current economic status of older citizens and their sources of economic support in order to formulate strategies for protecting the well-being of a growing older population.

Public and private transfers are one source of income support for older Mexicans. All public and some private employees in Mexico contribute to a social security system and receive health care services and pension income upon retirement (Aguila et al., 2011). However, approximately 60 per cent of the labour force in Mexico is in the informal sector and does not contribute to the social security system (INEGI, 2012).¹ Therefore, they do not receive social security benefits (health care and pensions). Some individuals in the informal sector may receive a significantly lower pension amount than those in the social security system through government safety net programmes and government health care services for the

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¹The definition of informal sector is informal salaried and informal unskilled independent workers excluding unpaid workers plus workers in the formal sector who are excluded from the social security registration (INEGI, 2012).

uninsured (Aguila et al., 2011). In addition, the low coverage rates of social security benefits in Mexico may also be due to many return migrants having not satisfied the minimum contributory requirements to claim a pension.

By retirement age, many Mexicans will have spent part of their working lives in the United States. This will impact their lifetime earnings, access to pensions and health insurance, accumulation of retirement wealth and the decision of when to retire. Although working in the United States may result in lifetime earnings that are higher than they otherwise would have been, this employment history may negatively impact eligibility for retirement pension benefits and the amount of benefit. In the United States and Mexico respectively, access to public retirement benefits requires a minimum number of years of contributions through work; the amount of the pension benefit is based on earnings. Without access to benefits, older individuals may choose to remain working at older ages or may rely on income support from family members. However, the ability to work at older ages may be restricted by an older individual's health and an employer's willingness to hire or retain an older worker. Among member States of the Organisation for Economic Cooperation and Development (OECD), Mexico stands out for having the highest average effective retirement age for men at 72.2 years and the second highest for women at 69.5 years (OECD, 2011). Mexicans that work outside their home country have a higher risk of not meeting the minimum eligibility requirements for social security benefits or not having access to full benefits in their home or host country than non-migrants because most systems require contributions for the majority of prime working years to receive the benefit in full. This is the case for both the United States and Mexico.

The issues surrounding portability of benefits have become increasingly important due to increased labour mobility between countries. In response, many countries have instituted social security agreements, also referred to as totalization agreements, to make portable social security contributions between countries. Since 1973, the United States has entered into various bilateral social security agreements, including with many European countries, the Republic of Korea, Japan, Chile and Australia (Butcher and Erdos, 1988; SSA, 2009). Mexico has made similar agreements, beginning in 1977 with Italy and followed by Argentina, Spain and Canada.² In June 2004, an agreement between the United States and Mexico to coordinate social security benefits was drafted, but has yet to be approved (Childers, 2007).³

Previous literature has found that access to pension and health benefits and the age at which eligibility occurs is an important determinant of labour supply at older ages (see, for example, Hurd, 1990; Ruhm, 1995; Rust and Phelan, 1997; Lumsdaine and Mitchell, 1999; Gruber and Wise, 1999; Gruber and Wise, 2004; French, 2005; French and Jones, 2011a and 2011b). The determinants of retirement have been far less studied in Mexico. Aguila (2012), using Mexican Health and Aging Study data,⁴ finds that social security retirement benefits are an important predictor of retirement decisions. Miranda-Muñoz (2011), using data from the Mexican National Employment Survey (*Encuesta Nacional de Empleo – ENE*)⁵ from 1991 to 2000, confirms the importance of social security benefits in the retirement decision of Mexicans. Neither study examines the relationship between migration experiences, social security benefits and retirement.

²See <http://www.sre.gob.mx/tratados>.

³See http://www.ssa.gov/international/Agreement_Texts/mexico.html.

⁴See <http://www.mhasweb.org/>.

⁵See <http://www.inegi.org.mx/est/contenidos/proyectos/encuestas/hogares/historicas/ene/default.aspx>.

This is the first study to exploit the Mexican Health and Aging Study, a rich, two-wave panel survey of respondents in Mexico older than age 50, in order to characterize the migration histories of middle-age and older migrants that return to Mexico and to use these histories to shed light on the economic status, access to pension and health insurance benefits, and employment status of older Mexicans. We also estimate a retirement conditional probability model to analyse the demographic and socio-economic characteristics and the determinants of retirement of respondents separately by whether they are male or female non-migrants or male return migrants (female is not presented as there are very few female return migrants). We do not attempt to model the decision to migrate or model why some migrants stay in the United States and others return, as empirical insight into these decisions is beyond the scope of these data. This information could help governments and policy-makers understand the characteristics of these groups and help them to better target social policies directed at supporting the most at-risk individuals.

It is found that compared to non-migrants, return migrants are older, more likely to be male, less educated (short-term migrants that have spent less than a year in the United States), more likely to come from rural areas (short-term migrants), and more likely to be married (short-term migrants). Long-term migrants (migrants who have spent at least a year in the United States) have higher income than the other two groups and are healthier. Both short- and long-term migrants are less likely to have pension and health insurance coverage. Long-term return migrants are the least likely of the groups to have public health insurance, which indicates low rates of current contributions to social security systems and thus may indicate a lower likelihood of being eligible for social security retirement benefits. Only 6.5 per cent of long-term return migrants receive benefits from the United States Social Security Administration. A higher proportion of return migrants are working around retirement age and at older ages in comparison to non-migrants. Finally, we find that factors that increase the probability of retirement for male return migrants are being in poor health, having public health insurance, having public social security, being newly age-eligible for benefits, and having a higher household income.

The remainder of the article is structured as follows. The next section provides background on the Mexican social security systems. Thereafter we describe the study methods and then present our results. A final section presents our conclusions.

Background

In June 2004, an *Agreement on Social Security between the United States of America and the United Mexican States* was signed at Guadalajara, Mexico. This Agreement has not been passed by the United States Congress and has not been implemented. There is thus no enacted agreement for the portability and totalization of social security contributions between the United States and Mexico. Individuals, including migrant workers, must satisfy requirements in each system separately in order to qualify for benefits. For many migrants, this requirement is likely to have a bearing on their retirement behaviour.

Health insurance

Health care provision in Mexico is organized according to employment status in the formal or informal sector. For those employed by the government and private sector, health care is granted by the social security system, which covers nearly half of the population. For the rest of the population, including self-employed workers and workers in the informal sector, health care services are provided by the Secretary of Health (*Secretaría de Salud*), the *Oportunidades* programme delivered by the Mexican Social Security Institute (*Instituto Mexicano del Seguro Social – IMSS*),⁶ and the Popular Health Insurance (*Seguro Popular*

de Salud – SPS). Private health care services play an important role, mainly among non-insured families (Frenk et al., 2007).

Social security systems

In Mexico, the Mexican Social Security Institute (*Instituto Mexicano del Seguro Social* – IMSS) is mandatory for private-sector employees; the State Employees' Social Security and Social Services Institute (*Instituto de Seguridad y Servicios Sociales de los Trabajadores del Estado* – ISSSTE) is mandatory for public-sector workers. These two organizations provide the majority of social security benefits (Aguila et al., 2011). Self-employed workers are not required to contribute to a social security system.

Workers in the informal sector do not contribute to the social security system. In 2011, the IMSS covered 32.9 per cent of the labour force and the ISSSTE covered 5.8 per cent of the labour force.⁷ Other social security institutions covering workers include Petr6leos Mexicanos (PEMEX), a state-owned oil extraction and processing company which provides its own health care services, the Social Security Institute for the Mexican Armed Forces (*Instituto de Seguridad Social Para Las Fuerzas Armadas Mexicanas* – ISSFAM), which serves the armed forces, and university, state and municipality pension schemes (Davila and Guijarro, 2000).

Eligibility requirements and benefits—In 1997, a major pension reform moved the public pay-as-you-go (PAYG) pension system of the IMSS to personal retirement accounts (PRA). Individuals that contributed to the IMSS before the pension reform are referred to as the “transition generation”. The transition generation has the option to choose at retirement the highest pension according to the rules of the PAYG or the PRA, as long as they satisfy the minimum requirements in each case. In this study, workers contributing to the IMSS are part of the transition generation, although, with at most four years of contributions to the PRA, the eligibility rules of the PAYG pension are most relevant for this group.

The traditional IMSS PAYG pension is similar to that of the pre-reform ISSSTE system and the other social security institutions, providing a final salary defined benefit.⁸ In the IMSS, early and normal retirement ages are 60 and 65, respectively, for both men and women. The IMSS early retirement benefit is 15 per cent less than that of the normal retirement pension, and its minimum pension guarantee is based on the minimum wage of Mexico City. The minimum years of contribution are 10 (500 weeks) (Aguila, 2012).

Retirement incentives—The social security system has no penalties for continued work after normal retirement age and benefits for dependants are given to the pensioner independent of the working status of the spouse. The coverage of private, employer-provided pensions is low. Less than 10 per cent of firms in Mexico provide this benefit; in 61 per cent of these plans the normal retirement age is 65 (Aguila, 2012). How a totalization agreement between the United States and Mexico would affect the retirement behaviour of Mexicans is unknown. With no enacted social security agreement, Mexicans with long spells of migration to the United States that return to Mexico (return migrants) are less likely than non-migrants to be eligible for social security benefits or health care insurance either in Mexico or the United States, and thus may have additional incentives to work at older ages. Then again, return migrants may have different saving and wealth accumulation patterns that

⁶Oportunidades was previously known as Solidaridad.

⁷Authors' calculation from the *Encuesta Nacional de Ocupaci6n y Empleo* (ENOE) <<http://www.inegi.org.mx/est/contenidos/proyectos/encuestas/hogares/regulares/enoe/default.aspx>>, *Memoria Estadística 2011* of IMSS <<http://www.imss.gob.mx/estadisticas/financieras/Pages/memoriaestadistica.aspx>> and *Anuario Estadístico 2011* of ISSSTE <<http://www.issste.gob.mx/issste/anuarios/>>.

⁸In 2007, ten years after the IMSS reform, the ISSSTE reformed its pension system from a PAYG to a PRA plan.

compensate for the loss of health and social security benefits. If, however, return migrants have only a short migration spell to the United States, they, all else remaining equal, may have similar retirement patterns as non-migrants given similar social security and health insurance benefits. Thus, length of migration spells matters.

Study methods

We use the Mexican Health and Aging Study (MHAS), a two-wave panel, applied in years 2001 and 2003.⁹ The MHAS is a nationally representative study of individuals born before 1951 and their spouses comprising a total of 9,862 households. The design of the MHAS questionnaire was based on the United States Health and Retirement Study (HRS). Moreover, the survey has information on the immigration experience to the United States, including total number of years in the United States, dates and duration for the first and last migration spell, networks in the United States that facilitate migration, and urban or rural location in the United States. The MHAS over-sampled regions in Mexico with higher quantities of migrants to the United States (Durango, Guanajuato, Jalisco, Michoacán, Nayarit and Zacatecas). We discuss our measurement of the key variables of interest in this analysis and describe our estimation methods in the remaining paragraphs of this section. The key variables include employment and migration status, income, health, demographic, education and wealth of individuals, as well as pension and health insurance, which are used to shed light on the characteristics of the migrant population that returns to Mexico.

Employment status

We classify respondents as full-time workers, part-time workers, or not working. We define full-time workers as those working more than 1,500 hours per year, part-time workers as those working between 500 and 1,500 hours per year, and the not-working category as those working less than 500 hours per year or reporting that they do not work.

Migration

MHAS respondents are asked if they have worked or lived in the United States, excluding holidays or short visits. We classify individuals by their migration spells to the United States in three categories: non-migrants, short-term migrants and long-term migrants. Migrants that have worked or lived in the United States for up to a year are classified as short-term; all others are long-term. Return migrants are also classified by their United States citizenship status, including both permanent residency and citizenship.

Income and wealth

The MHAS has detailed information on sources and amounts of income and wealth. Non-response on amounts of income and wealth is minimized due to the use of unfolding brackets.¹⁰ Our analysis utilizes total household income and net worth with imputed values from unfolding brackets for non-responses. Wong and Espinoza (2004) provide a detailed description of the imputation method. Total household income includes earned income, business profits, property rent income and expenses, capital assets income, income from pensions, family transfers, and transfers from government programmes or individuals that are not family members. Net worth includes, net of debt, the value of real estate properties, business and capital assets, and vehicles, as well as other assets such as the value of savings and deposit accounts.

⁹The MHAS website states current plans to conduct another two follow-up surveys in 2012 and 2014.

¹⁰“Unfolding brackets” is a statistical method used as a partial solution to the problem of missing data.

To compare the 2001 and 2003 information, income and net worth variables are deflated to 2002 Mexican pesos (MXN) as the base year and by using the National Consumer's Price Index (NCPI) reported by the Mexican Central Bank.

Pensions and health insurance

We can identify the social security system to which the individual contributes: IMSS, ISSSTE, PEMEX, or ISSFAM. These social security institutes provide health care services and a pension system. The MHAS additionally allows identifying whether the individual has private health insurance. These data unfortunately do not allow for identifying if the individual contributes to an employer-provided private pension or the United States social security system. However, we can observe when the individual receives social security benefits from the United States, and a private pension from a United States or a Mexican institution.

Health, education and demographic characteristics

Our analysis utilizes several measures of health. Self-reported health status is based on five categories: excellent, very good, good, fair, and poor. As another indicator of health, we utilize responses to the following question: "Before age 10, did you have a serious health problem that affected your normal activities for a month or more?" The education variable categorizes individuals by highest level of schooling completed: no schooling, incomplete primary, complete primary, incomplete high school, complete high school, and undergraduate studies or more. Other characteristics of interest include gender, age, marital status, and number of children.

Multivariate model of transitions to retirement by migration status

We estimate a retirement conditional probability model:

$$P(R_{it}^j=1)=f(\alpha_0+\alpha_1X_{it-1}^j+\alpha_2I_{it-1}^j+\alpha_3H_{it-1}^j+\alpha_4M_{it-1}^j)$$

where R_{it}^j takes on the value 1 for individuals not working in 2003, conditional on working in 2001. That is, the sample includes only individuals who are working in 2001. X_{it}^j is a vector consisting of characteristics including age, education, number of children, and marital status. I_{it}^j is a vector of indicators for contribution to a social security institute, type of institute, and age-eligibility for retirement benefits; it also includes indicators for health insurance type, household net worth, and household income. H_{it}^j is self-reported health status and childhood health; M_{it}^j includes the age when the individual first immigrated to the United States, whether a short-term or long-term migrant, and whether a United States citizen or permanent resident. We estimate probit models separately for return migrants and non-migrants ($j=1,2$) and separately for males and females. We do not attempt to model the decision to migrate or model why some migrants stay in the United States and others return, as empirical insight into these decisions is beyond the scope of these data.

Results

We find that immigration to the United States is most likely to occur during prime working years. Returning to Mexico spikes around age 62, which is the early retirement age in the United States. Compared to non-migrants, return migrants that have spent at least a year in the United States are healthier, have higher income, and are less likely to have access to health insurance or public pensions. We find that Mexican non-migrants and return migrants

are responsive to public health insurance and pension benefits. The change to employment status from becoming eligible for pension benefits or having publicly-provided health insurance is much larger for return migrants than non-migrants, even after controlling for many other factors such as income, wealth and health. The latter may indicate that receipt of United States social security benefits may further increase retirement rates.

Education and demographic characteristics

In Table 1, we present the characteristics of 13,550 respondents older than age 50 from the 2001 MHAS. We drop 138 respondents with no response to the migration question. The mean age is 62.6 years for non-migrants, 64.3 years for short-term return migrants, and 64.9 years for longer-term migrants. Over 60 per cent have no schooling or incomplete primary education, demonstrating the extremely low level of education of these cohorts in Mexico. The mean number of children is six. The majority of respondents are married (66.2 per cent) and live in urban localities (83.0 per cent). Of the 13,550 respondents, 8.9 per cent report that they have lived or worked in the United States.

Fifty-eight per cent of return migrants are long-term return migrants (lived in the United States for more than one year). Most return migrants are males. Long-term migrants are more likely than short-term migrants to be female (results not shown). This finding is consistent with some studies that find one of the important reasons for females to migrate is due to family reunification (see, for example, UNDP, 2007; Binational Study on Migration, 1997). Overall, return migrants are less educated than non-migrants. A higher proportion of short-term migrants (69.2 per cent) has no schooling or has incomplete primary education compared to long-term migrants (61.7 per cent) or non-migrants (59.9 per cent). A lower proportion of short-term migrants completed high school or undergraduate studies (12.0 per cent) than did long-term migrants or non-migrants (16.8 and 17.1 per cent, respectively).

Short-term migrants are more likely to be married than the other two groups. Although the majority of respondents live in urban localities, short-term migrants are more likely to be from rural areas than long-term migrants and non-migrants. In sum, we find that 8.9 per cent of Mexicans older than age 50 in 2001 have lived and/or worked in the United States. Compared to non-migrants, return migrants are older, more likely to be male, less educated (short-term migrants), more likely to come from rural areas (short-term migrants), and more likely to be married (short-term migrants). Education levels, sex and marital status are all factors that have been shown to affect the decision to retire, suggesting the retirement patterns of migrants and non-migrants may be different.

Income, wealth, health, insurance and pensions

Long-term return migrants have substantially higher mean monthly household incomes than short-term migrants and non-migrants, with short-term migrants having the lowest (Table 2). Long-term return migrants also have more wealth than the two other groups, but the differences are not large. Rates of health insurance coverage are generally low. Return migrants, both short- and long-term, are less likely to have health insurance coverage than non-migrants. It is worth noticing that both type of individuals, with and without migration spells, have contributed during their working life to a Mexican social security institute (Table 2). Male non-migrants are the most likely to have contributed to any social security institute compared to male return migrants, while female non-migrants are the least likely to have contributed compared to female return migrants.

More short-term (14.6 per cent) and long-term migrants (12.3 per cent) indicate that they had a serious health problem before age 10 compared to non-migrants (9.8 per cent). In sum,

long-term migrants have higher income than the other two groups and are healthier. Both short- and long-term migrants are less likely to have pension and health insurance coverage.

Migration experience

The experience in the United States was different for short- and long-term return migrants (Table 3). Networks in the United States are important for return migrants, particularly long-term migrants. Just over 38 per cent of short-term migrants knew someone in the United States to help them settle, while 61.6 per cent of long-term migrants had United States networks.

Short-term migrants were more likely to live in rural areas of the United States than long-term migrants (64.0 versus 57.6 per cent, respectively). In the case of long-term migrants, 21.1 per cent are United States citizens or permanent residents, while only 5.5 per cent of short-term migrants have this legal status. There are, however, several similarities between the migration experiences of short- and long-term migrants. The median age of first migration to the United States is age 26 for short-term and age 25 for long-term migrants (results not shown). Most migrate during prime working ages and only a small proportion of short-term (8.0 per cent) and long-term (3.6 per cent) migrants move to the United States for the first time after age 50.

Figure 1 (Panels A and B) shows the age that long-term migrants returned to Mexico after their last stay in the United States for those with citizenship or permanent residency (or neither status). We can observe a spike for United States citizens or residents around retirement age. For those that are not citizens or permanent residents, we observe they returned mostly during working age: the highest proportion is between ages 20 to 55.

Figure 2 shows the year of return to Mexico for long-term migrants after their last stay in the United States by citizenship or residency status. Individuals with United States citizenship or residency are the most likely to have last returned from the United States the year before the interview date in 2000, suggesting they move back and forth between Mexico and the United States more than non-citizens and non-residents.

We observe in Figure 2 (Panels A and B) a different pattern for return migrants without citizenship or residency that may correspond to changes in United States immigration programmes and laws. The ending of the United States-Mexico Bracero Program in 1964 for temporary or seasonal workers may have caused the increase in return migrants in the mid-1960s (Durand, Massey and Parrado, 1999).

Furthermore, the 1986 United States Immigration Reform and Control Act (IRCA) may have had an effect in the decline of return migrants during the 1980s. This law increased the immigration enforcement budget, imposed sanctions for hiring illegal immigrants, and gave amnesty to illegal immigrants (Durand, Massey and Parrado, 1999). During the 1990s, we observe an increasing trend in return migrants. Implemented in 1996, the Illegal Immigration Reform and Immigrant Responsibility Act (IIRIRA) put in place additional penalties for illegal entry and smuggling, more crossing deterrents such as fencing at the border of San Diego and Tijuana, and a stronger border patrol using more advanced technology and more qualified agents (Fragomen, 1997). In addition to this reform, the Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA) of 1996 restricted illegal immigrants from government safety net programmes and benefits. The PRWORA limited the access to welfare benefits for non-citizens, creating pressure on immigrants who were legal residents to apply for United States citizenship in order to fully qualify for means-tested programmes (Espenshade, Baraka and Huber, 1997; Van Hook, 2003). Although the relative importance of these programmes on naturalization rates is not

clear (Balistreri and Van Hook, 2004; Borjas 2002; Van Hook, Brown and Bean, 2006), it is clear that naturalization rates increased significantly after 1996. Regardless of the relative effects, since citizens have lower restrictions to sponsor the legal entry of their immediate relatives, higher naturalization rates increased the volume of immigration and subsequent permanent settlement as families could be together and there was less incentive to return (Massey, Durand and Malone, 2002).

Some migrants are entitled to social security benefits in both the United States and Mexico. As mentioned above, there is no agreement for the portability and totalization of social security contributions between the United States and Mexico and individuals must satisfy requirements in each system separately in order to qualify for benefits. As expected, long-term migrants are more likely to be collecting United States social security benefits than short-term migrants or non-migrants and the rates increase with age: among long-term migrants aged 65 to 69, 22.3 per cent receive United States social security benefits (Figure 3, Panels A, B and C).

Receipt of Mexican social security benefits is low among older Mexicans (Figure 3 and Table 4). Among non-migrants only about one-fourth of individuals aged 50 or older are receiving benefits. The rate of benefit receipt is lower for return migrants in these age groups and lowest for the long-term return migrants.

In summary, we find that networks in the United States are an important characteristic of migrants, with migration generally undertaken for the first time while individuals are between 20 and 30 years of age. As described earlier, there is heterogeneity in terms of level of education for Mexican return migrants with short-term migrants having the lowest levels of education. Long-term return migrants are the least likely of the groups to have public health insurance, which indicates low rates of current contributions to social security systems and thus may indicate a lower likelihood of being eligible for social security retirement benefits. Over half of return migrants have never contributed to a Mexican social security institute. Some migrants are receiving United States social security benefits: 6.5 per cent of long-term return migrants. The observed differences between migrants and non-migrants discussed here suggest that they may have different employment patterns at older ages. We turn to an analysis of their employment status next.

Employment status

Employment in Mexico for non-migrants declines with age, although 36.7 per cent of males are working after age 70, which may be in part due to a lack of social security and health care coverage for a substantial proportion of individuals (Table 5). We observe that women in these cohorts have a low level of employment: 32.7 per cent of women aged 50 to 54 work in comparison to 87.3 per cent of men in the same age group. The proportion of women working declines substantially with age, and by early retirement age (age 60) it is 21.1 per cent.

Most workers have a full-time job. This may indicate preference for full-time work or a lack of flexibility in the Mexican market to provide part-time “bridge” jobs. The proportion of men in full-time work decreases with age and we observe only a very small increase in part-time work. Among women, part-time and full-time work decreases with age.

Table 6 shows the proportion of males with a migration history to the United States working full-time, part-time or not working. A higher proportion of return migrants are working after age 60 than non-migrants. This could indicate that individuals with truncated labour histories in the United States and Mexico have to work up to older ages because they do not qualify for United States or Mexican social security benefits. Part-time work among male

return migrants increases from 9.0 per cent to 16.5 per cent from ages 50 to 65, after which it remains fairly stable. In contrast, among non-migrants, part-time work increases from 9.2 per cent to 13.0 per cent from age 50 to 65 and the proportion of part-time workers does not vary as much across ages 55 to 65.

In sum, we find that about a third of males are still working after age 70. A lower proportion of women are working than men. We observe a small proportion of males and females in part-time jobs, but this proportion seems to increase slightly for men and individuals with migration spells to the United States as they approach retirement age. Also, a higher proportion of individuals with migration spells to the United States are working around retirement age and at older ages in comparison to those with no migration spells to the United States. We move now to analyse the main determinants for retirement for individuals with and without migration spells.

Determinants of transitions to retirement

To analyse the factors that affect retirement decisions for Mexicans with and without migration spells to the United States, we model the probability of retiring in 2003 conditional on working in 2001 using a probit model. Table 7 shows the results for males with migration spells to the United States and males and females without migration spells to the United States. We do not divide the sample by short- and long-term migrants as defined in this study owing to the reduced sample size due to missing observations in some of the variables. We show the marginal effects instead of the probit coefficients for ease of interpretation and display the standard errors in parentheses. Our findings are generally consistent with the previous literature on retirement behaviour in the United States and many other developed countries, highlighting the importance of social security systems and health status in retirement decisions.

Factors that increase the probability of retirement for male return migrants are being in poor health, having public health insurance, having public social security, being newly age-eligible for benefits, and having a higher household income. The latter two are particularly important factors. Being in receipt of United States social security benefits has a positive effect on retirement as would be expected, given that we expect wealth to increase the likelihood of retirement, but the results are not statistically significant. These estimates reveal the importance of public pension benefits in the decision to retire for return migrants. It may be the case that receipt of benefits may induce Mexican migrants in the United States to return to Mexico, although we cannot test for this hypothesis with these data. There is no additional effect of net household wealth. Relative to having very good or excellent health, poor health increases the probability of retirement by 21.8 per cent.

In the third column, we show the results for males without migration spells to the United States. Only a few of the factors associated with increases in the probability of retirement are the same for non-migrant males as for return migrant males, and the size of the effect differs. Having public health insurance and social security benefits, as well as being age-eligible for benefits, increases the probability of retirement; however, the effects are much smaller for non-migrants compared to migrants. In contrast to migrants, poor health does not increase the likelihood of retirement, high education decreases the likelihood of retirement (not shown in Table 7), and there is no effect of household income.

The determinants of retirement for non-migrant females are different from those for non-migrants (and migrant) males, with the exception that having contributed to a social security system and being newly age-eligible for benefits increases retirement relative to those without access to a public pension programme. While the number of children had no effect on male retirement, for females, children are associated with a substantial increase in the

probability of retiring (not shown in Table 7). This might be explained by the importance of transfers from children to older parents, particularly to the mother (see Varley and Blasco, 2000). Public health insurance has no effect on retirement relative to having no health insurance. Health status has a large effect, with good (21.5 per cent), fair (19.7 per cent) and poor (21.8 per cent) health all increasing the probability of retirement relative to excellent health.

In sum, we find that public health insurance and being age-eligible for public pension benefits all increase the probability of retirement among Mexican men and the effects are much larger for return migrants compared to non-migrants.

Conclusion

This is the first study to exploit the Mexican Health and Aging Study (MHAS), a rich, two-wave panel survey of respondents in Mexico over age 50. We have sought to characterize the migration histories of middle-age and older migrants that return to Mexico, and to use these histories to shed light on the economic status, access to pension and health insurance benefits, and employment status of older Mexicans. The data provides a broader perspective of the migration histories of return migrants than other surveys because the respondents, with an average age of 62.6, have completed much of their working lives. Most of the return migrants first went to the United States in their twenties and thirties; among those that returned, migrants with United States citizenship or residency status had a propensity to do so near retirement age.

The birth cohorts represented in the MHAS have low levels of schooling with short-term return migrants having the lowest levels. Many Mexicans do not have access to public health insurance and will not benefit from public retirement pensions. Return migrants are the less likely to have public health insurance or to have ever contributed to a social security system than non-migrants and thus are less likely to be eligible for social security benefits upon retirement. Work for males older than age 70 is common and more likely for return migrants than non-migrants. The low level of access to social security benefits of return migrants is consistent with truncated labour histories in the United States and Mexico, but may also reflect the selection of who chooses to migrate to the United States and who returns to Mexico.

The finding that public programmes are important factors in the retirement decision among older workers is also true for return migrants. In particular, being newly age-eligible for social security benefits increases the probability of retirement among Mexican men and the effects are much larger for migrants compared to non-migrants. The labour supply responsiveness of return migrants to public benefits suggests that the decisions to return to Mexico and to participate in or leave employment are likely intertwined.

Despite the importance of migration in the work lives of many Mexicans, retirement decisions of older return migrants are not well understood. The ageing of the Mexican population will require a deeper assessment of the situation older return migrants, how their access to health care and social security benefits determine retirement behaviour, and the importance of instituting a bilateral social security agreement between the United States and Mexico. The enactment of such a social security agreement would allow for totalizing the years of contribution made in the United States and Mexican systems, better enabling the minimum eligibility requirements for social security benefits in one or other of the countries to be met (Martínez, 2007). Older return migrants are a vulnerable group because most have never contributed to a social security system that provides pensions and health insurance benefits. The empirical results might help inform policy debates on a social security

agreement between the United States and Mexico that recognizes that totalizing contributions to each country's social security system could improve the income security of return migrants. Such an agreement would likely change retirement behaviour as well as migration behaviour.

Acknowledgments

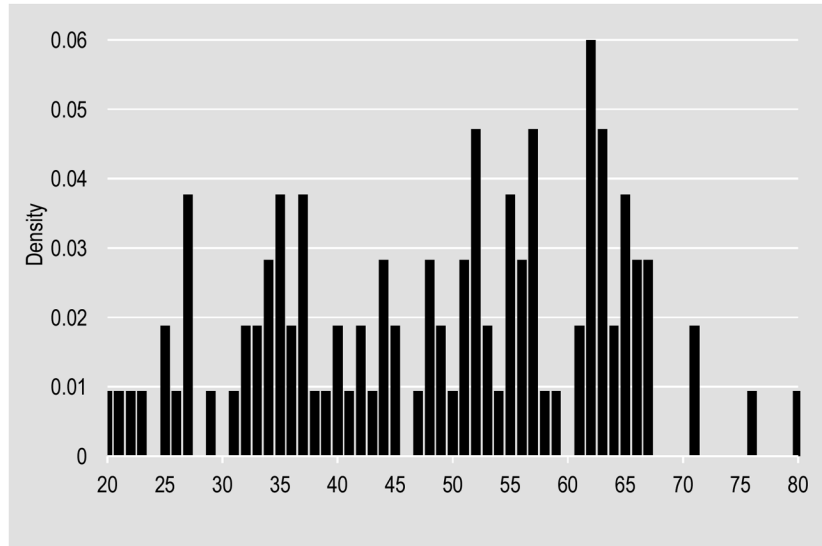
This study was supported by a grant from the United States Social Security Administration funded as part of the Retirement Research Consortium (RRC) and the National Institute of Aging (NIA) funded programme project "International Comparisons of Well-Being, Health and Retirement" 2P01AG022481-06. We thank Joanna Carroll for her excellent programming assistance, Ricardo Basurto, Claudia Diaz, Sarah Kups, Norely Martínez, Ervant Maksabedian, and Ashley Pierson for their excellent research assistance, and the anonymous referees for their valuable comments.

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Panel A. Age of return to Mexico: Citizen or resident



Panel B. Age of return to Mexico: Neither citizen nor resident

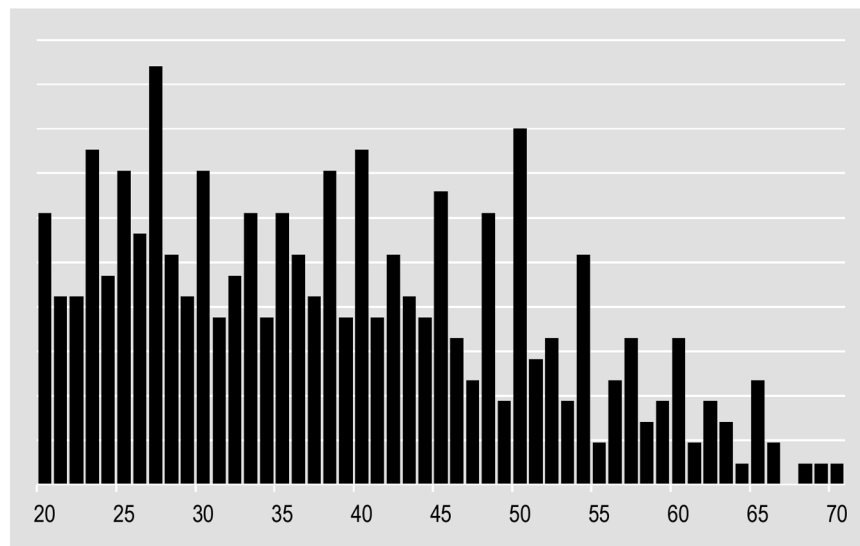
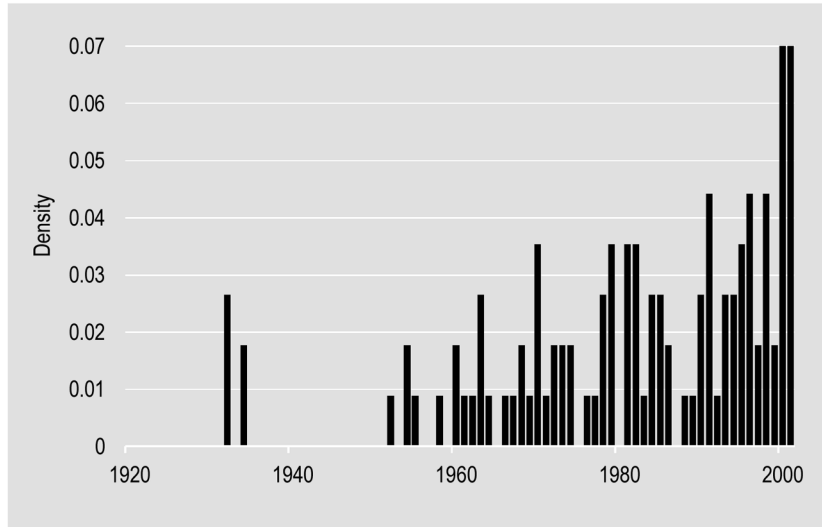


Figure 1.
Age of return to Mexico for long-term migrants
Source: Authors' calculation using the 2001 Mexican Health and Aging Study (MHAS).

Panel A. Year of return to Mexico: Citizen or resident



Panel B. Year of return to Mexico: Neither citizen nor resident

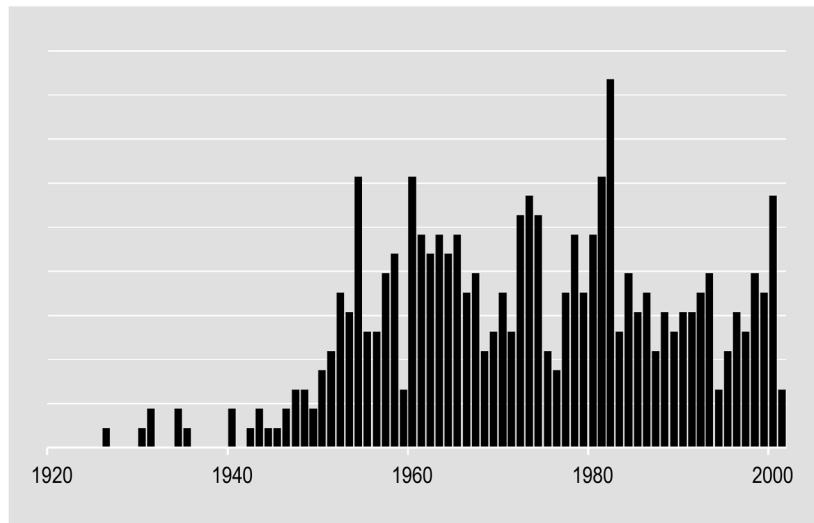
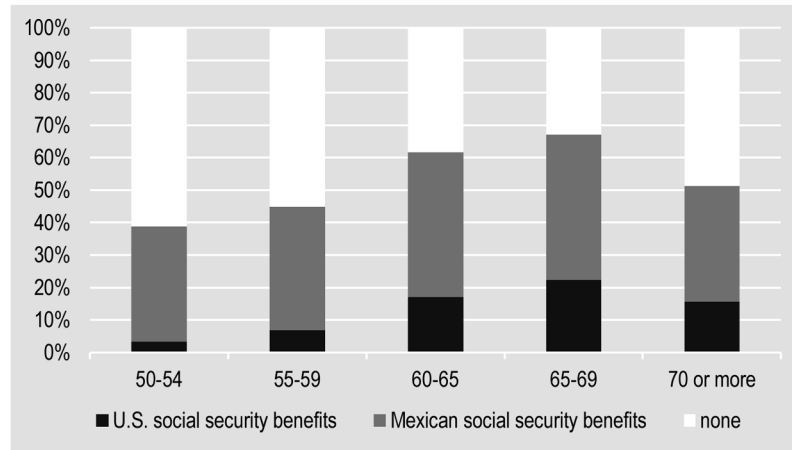
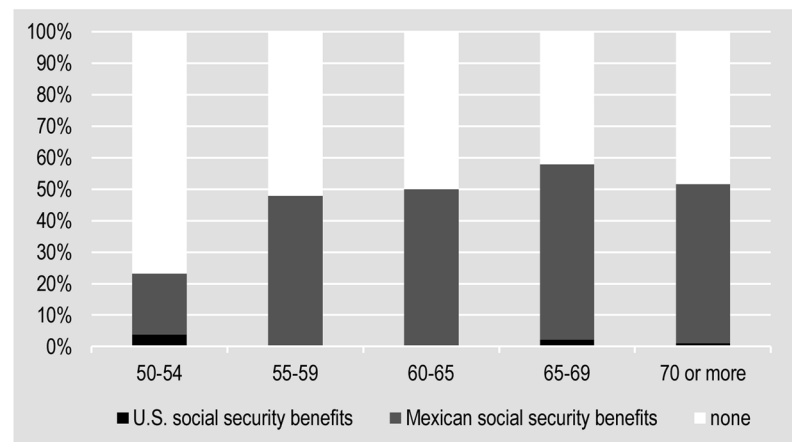


Figure 2.
 Year of return to Mexico for long-term migrants
Source: Authors' calculation using the 2001 Mexican Health and Aging Study (MHAS).

Panel A. Long-term return migrants



Panel B. Short-term return migrants



Panel C. With no migration spells to the United States

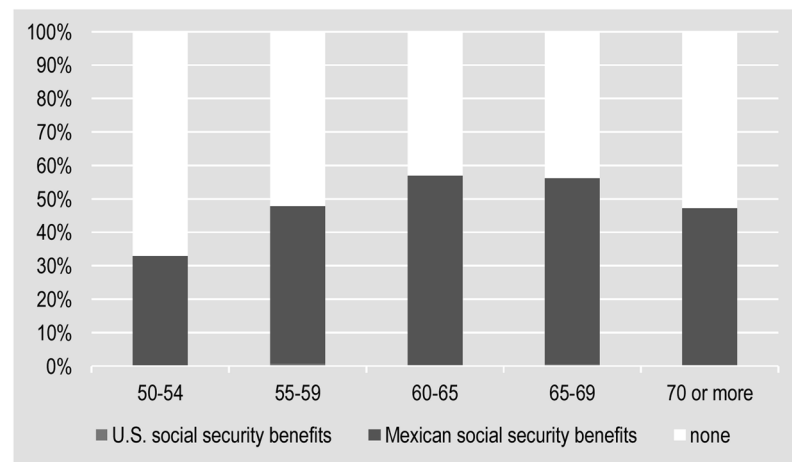


Figure 3.

Receipt of social security benefits for male long-term and short-term return migrants and males without migration spells to the United States.

Source: Authors' calculation using the 2001 Mexican Health and Aging Study (MHAS).

Table 1

Demographic characteristics and education by migration status

	All	Return migrants		Non-migrants
		Short-term (in the U.S. 1 year)	Long-term (in the U.S. >1 year)	
Number of observations	13,550	507	705	12,338
Mean age	62.64	64.37	64.96	62.44
Male (%)	46.13	84.81	77.45	42.75
Education (%)				
No schooling	25.34	27.42	22.98	25.38
Incomplete primary	35.06	41.81	38.72	34.57
Primary	22.55	18.54	21.28	22.79
High school	9.54	7.10	9.65	9.63
Undergraduate or more	7.38	4.93	7.23	7.49
Mean number of children	6.13	6.87	6.75	6.06
Marital status (%)				
Single	30.65	22.09	26.81	31.22
Couple	66.26	74.75	67.23	65.85
Rural (%)	17.00	25.05	19.43	16.53

Note: Categories do not add up to 100 per cent because they include missing observations.

Source: Authors' calculation using the 2001 Mexican Health and Aging Study (MHAS).

Table 2

Income, wealth, and health indicators by migration status

	Individuals with migration history to the U.S.		Non migrants
	Short term migrants (in the U.S. 1 year)	Long term migrants (in the U.S. >1 year)	
Mean monthly household income (USD)	56.49	86.59	75.46
Median monthly household income (USD)	23.81	30.16	22.86
Mean household net worth (USD)	3,540.53	4,064.06	3,684.80
Median household net worth (USD)	1,937.09	2,264.96	1,938.72
Ever contributed to Mexican Social Security Institute			
Males (%)			
<i>IMSS</i>	39.07	36.26	44.20
<i>ISSSTE</i>	6.74	3.30	7.07
<i>Other</i>	0.70	1.10	1.63
None	50.70	57.14	44.79
Females (%)			
<i>IMSS</i>	24.68	21.38	14.38
<i>ISSSTE</i>	2.60	3.77	3.78
<i>Other</i>	1.30	2.52	0.35
<i>None</i>	70.13	69.81	78.36
Health Insurance (%)			
Public insurance	55.62	47.66	57.64
Private insurance	1.18	4.11	1.95
None	42.21	44.26	37.90
Self-reported health status (%)			
Excellent/very good	6.31	9.08	5.45
Good	25.44	27.23	28.98
Fair	39.45	37.16	43.91
Poor	22.29	15.89	14.69
Serious health problem before age 10 (%)	14.60	12.34	9.82

Notes: The amounts are in USD; in 2001, 1.00 USD = approx. 10.00 MXN. The health insurance variable includes a category for other type of insurance apart from private or public. This category is not included in the table. Categories do not add up to 100 per cent because they include missing observations. In the category “Ever contributed to a Mexican Social Security Institute”, “none” includes individuals that have never worked. In the case of females, the proportion that has never worked is high: 16.8 per cent for short-term migrants, 19.5 per cent for long-term migrants, and 32.8 per cent for non-migrants.

Source: Authors’ calculation using the 2001 Mexican Health and Aging Study (MHAS).

Table 3

Characteristics of migration histories to the United States by length of stay (per cent)

	Short term migrants (in the U.S. 1 year)	Long term migrants (in the U.S. >1 year)
Mean years in the United States.	N/A	7.81
Length of stay in the United States		
Stayed 10 years	N/A	24.11
Stayed between 5 and 10 years	N/A	25.67
Stayed < 5 years	N/A	50.21
Networks in U.S.	38.31	61.69
Mostly urban U.S. residence	36.09	42.41
U.S. citizen or resident	5.52	21.13
Age of first migration to the United States		
< 20 years old	16.57	20.85
20–29 years old	36.69	33.05
30–39 years old	16.17	20.99
40–49 years old	12.23	7.52

Notes: Categories do not add up to 100 per cent because they include missing observations. N/A is not available.

Source: Authors' calculation using the 2001 Mexican Health and Aging Study (MHAS).

Table 4

Receipt of social security benefits by migration status (per cent)

	Short-term migration	Long-term migration	No migration
U.S. Social Security	0.59	6.52	0.22
Mexican Social Security	20.32	16.88	21.88
Private Pensions	1.58	1.13	1.42
None	77.51	75.46	76.48
Number of observations	507	705	12,338

Notes: The sample size for females is too small to report estimates. Categories do not add up to 100 per cent because they include missing observations.

Source: Authors' calculation using the 2001 Mexican Health and Aging Study (MHAS).

Table 5
Labour force participation for males and females with no United States migration spells (per cent)

No. Migration	Full-time work		Part-time work		Not working	
	Males	Females	Males	Females	Males	Females
50-54 (N=3,062)	78.14	22.36	9.24	10.40	10.89	66.44
55-59 (N=2,690)	68.46	18.46	12.36	9.43	17.48	71.46
60-65 (N=2,110)	54.52	12.26	13.23	8.89	30.97	78.13
65-69 (N=1,661)	43.86	7.13	13.01	6.39	43.14	85.22
70+ (N=2,815)	23.98	4.34	12.74	3.90	61.78	90.83

Notes: Categories do not add up to 100 per cent because they include missing observations. Not working includes individuals that have never worked. Those that have never worked represent an important proportion for individuals with no migration spells: 15.4 per cent for the groups aged 50-54, 17.5 per cent for aged 55-59, 20.0 per cent for aged 60-65, 20.4 per cent for aged 65-69, and 22.9 per cent for aged 70 or older.

Source: Authors' calculation using the 2001 Mexican Health and Aging Study (MHAS).

Table 6

Labour force participation for males with United States migration spells (per cent)

	Full-time work	Part-time work	Not working
Return Migrants			
50–54 (N=154)	74.68	9.09	15.58
55–59 (N=180)	67.78	13.89	17.78
60–65 (N=169)	57.99	15.98	25.44
65–69 (N=175)	44.00	16.57	36.57
70+ (N=298)	27.85	16.44	55.37

Notes: Categories do not add up to 100 per cent because they include missing observations. Not working includes individuals that have never worked. Those that have never worked represent an important proportion for individuals with no migration spells: 15.4 per cent for the groups aged 50–54, 17.5 per cent for aged 55–59, 20.0 per cent for aged 60–65, 20.4 per cent for aged 65–69, and 22.9 per cent for aged 70 or older. The sample size for females is too small to report estimates.

Source: Authors' calculation using the 2001 Mexican Health and Aging Study (MHAS).

Table 7

Probability of retirement for individuals with and without migration spells

	Migrant male	Non-migrant male	Non-migrant female
Mexican Social Security			
Not age eligible	0.019 [0.065]	0.04 [0.023 *]	-0.034 [0.041]
Newly age eligible in 2003	0.29 [0.116 ***]	0.072 [0.035 **]	0.161 [0.082 **]
Already eligible	0.019 [0.042]	0.066 [0.022 ***]	0.098 [0.061 *]
U.S. social security benefits	0.271 [0.235]		
Health insurance			
Public	0.089 [0.036 **]	0.036 [0.015 **]	0.003 [0.032]
Private	N/A	-0.017 [0.044]	-0.066 [0.086]
Income and wealth quintiles			
Household income quintile 2	0.164 [0.065 ***]	-0.033 [0.017 *]	0.015 [0.043]
Household income quintile 3	0.123 [0.066 **]	-0.027 [0.018]	-0.067 [0.041]
Household income quintile 4	0.11 [0.069 *]	0.012 [0.020]	-0.064 [0.043]
Household income quintile 5	0.114 [0.064 **]	0.029 [0.023]	-0.036 [0.048]
Household net worth quintile 2	0.078 [0.056]	-0.014 [0.018]	-0.006 [0.042]
Household net worth quintile 3	0.003 [0.045]	0.007 [0.019]	-0.059 [0.042]
Household net worth quintile 4	0.079 [0.057]	0 [0.019]	0.06 [0.044]
Household net worth quintile 5	0.023 [0.054]	-0.011 [0.020]	0.021 [0.045]
Health status			
Very good	-0.114 [0.029]	0.039 [0.058]	0.206 [0.141]
Good	0	0.022	0.215

	Migrant male	Non-migrant male	Non-migrant female
	[0.070]	[0.045]	[0.115 [*]]
Fair	0.039	0.061	0.197
	[0.073]	[0.047]	[0.108 [*]]
Poor	0.218	0.068	0.218
	[0.127 ^{**}]	[0.061]	[0.124 [*]]
Childhood health problems	0.026	-0.006	0.162
	[0.043]	[0.020]	[0.043]
Other covariates included	Yes	Yes	Yes
Number of observations	546	3,123	1,359
Observed probability	0.195	0.152	0.345
Pseudo R ²	0.243	0.107	0.075

Notes: The model is not estimated for migrant females due to the small sample size. N/A is that the coefficient is not available because the sample size in this cell is too small (36 observations for “private health insurance of migrants” and 3 observations for “ever contributed to other Mexican social security institute”). Other variables included in the regression are: age, age squared, education, number of children, marital status. The benchmark categories are: no schooling, no children, single, excellent health status, no public or private health care insurance, never contributed to a public pension system, 20th percentile of household income and household net worth and age of first migration to the United States at aged 50 or older.

* p<0.1,

** p<0.05,

*** p<0.01.

Source: Authors’ calculation using the 2001 and 2003 Mexican Health and Aging Study (MHAS).