UNINSURED MIGRANTS: MEXICAN REINTEGRATION AND THE GENDERED EFFECTS OF INFORMALITY

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ABSTRACT

Despite substantial evidence that Mexican return migrants are less likely to have health insurance than non-migrants, previous research has given insufficient consideration to the recent creation of a universal health care program in Mexico. Additionally, recent demographic analysis suggests that gender and occupational formality significantly affect the Mexican migration experience, however, these factors have seen limited incorporation in studies of health coverage among Mexican returnees. This study analyzes data from the 2010 Mexican Census to determine the relationship between a recent U.S. migration experience and health coverage in Mexico. Separate model estimations reveal that migration has a larger negative effect on coverage among women than among men. Further, findings suggest that occupational formality plays an important role in determining access to coverage, but that among men, a prior migration experience moderates the effect of formality on coverage. Given recent findings that Mexican return migrants suffer high rates of mental and physical health challenges, and historic levels of return migration over the last ten years, these findings have important implications for policy designed to facilitate the reintegration of migrants returning to Mexico from the U.S.

INTRODUCTION

The structural approach to migration suggests that reintegration following return takes time. Theorists posit that reintegration will be especially challenging when deportation or unexpected job-loss results in unplanned return (Cassarino 2004). Given record deportations in recent years and high levels of unexpected return due to the economic recession, contemporary Mexican returnees are likely especially unprepared to reintegrate. An important element of integration is gaining access to institutional support structures. Several recent papers suggest that uninsurance is more pervasive among Mexican returnees than non-migrants (Aguila and Zissimopoulos 2013; Salinas et al. 2010), however, these studies tend to rely on data collected at least ten years ago, which does not account for recent changes to the Mexican health insurance system.

Mexican return migration has nearly doubled in recent years, with an estimated 1.4 million Mexicans returning between 2005 and 2010 (Passel et al. 2012.). Nearly half of recent returns result from deportation (Masferrer and Roberts 2012) and many more can be attributed to the weakening U.S. economy. A recent survey suggests that 13.4% of Mexicans have prior migration experience in the U.S. (Cerrutti and Gaudio 2010). Contemporary scholarship indicates that those returning to Mexico experience many of the same challenges to mental health as Mexicans entering the U.S. (Breslau et al. 2011; Familiar et al. 2011). Not only do these mental health disorders impact individual well-being, they also limit migrants' ability to contribute economically. PTSD and depression have been identified as the two most common health-related causes of missed work in Mexico (Benjet et al. 2013).

As high levels of return take place, the Mexican health insurance is changing considerably. The introduction of a universal health care program, Seguro Popular (the People's

Insurance), in 2003 made a coverage option available to Mexico's large informal workforce. Despite this new landscape, recently published studies continue to rely on data collected in and before 2003. Therefore, their findings contribute only a partial understanding both of the experience of contemporary returnees, and of the effectiveness of Mexico's new program on return migrants. Further, despite the finding that emigration is often tied to occupational informality (Villarreal and Blanchard 2013), little attention has been given to the relationship between occupation and health coverage. Addressing these gaps in the literature is extremely important if policymakers are to account for lower levels of coverage among return migrants.

This study is guided by two research questions: 1) how does prior U.S. migration experience effect the odds of being insured in Mexico and how does it affect program affiliation? 2) How does occupation mediate access to health insurance coverage and how does migrant status moderate the effect of occupation? The analysis draws on nationally representative data from Mexico's 2010 decennial census, which provides detailed information regarding health insurance coverage, as well as a wide array of demographic and economic measures. All analyses are separated by sex to test whether gendered migration experiences (Cerrutti and Massey 2001; Curran and Rivero-Fuentes 2003; Hagan 1998; Hondagneu-Sotelo 1994) result in different reintegration outcomes following return. Results indicate that returnees continue to experience lower coverage, despite the presence of Seguro Popular—the migration penalty is considerably higher for women than for men. Additionally, among men, but not among women, migration moderates the effect of informal employment, reducing informality's negative impact on the odds of being insured.

BACKGROUND

Significant demographic analysis has been devoted to health outcomes among Mexican migrants in the U.S. Although research on negative health section among Mexican return migrants returns mixed results (Palloni and Arias 2004; Hummer et al. 2007; Powers 2013), recent evidence suggests that the perceived health advantage among Mexican immigrants results, at least in part, from the return of less healthy Mexicans (Riosmena, Wong, and Palloni 2013). Further, Hispanic immigrants overall face significant risk of physical health challenges due to their tendency to work in riskier jobs (Orrenius and Zavodny 2009). These findings suggest that, due to potential negative selection and dangerous occupations, Mexican migrants may return with significant need for health services.

Much less disagreement surrounds the relationship between Mexican migration and mental health. Scholars have long noted elevated rates of depression and other psychiatric conditions among Mexican migrants in the U.S. (Vega, Kolody, and Valle 1987). These challenges are often attributed to stresses associated with the migration journey and the process of acculturation (Alegria et al. 2007; Turner et al. 2006). Additionally, research indicates that migration has significant consequences for the mental health of migrants' family members, both in the U.S. (Borges et al. 2009) and those left behind in Mexico (Nobles 2013).[1] Recent research indicates that mental health challenges persist among Mexican return migrants (Breslau et al.

[1] The health of family members is important because Mexicans generally have the option to affiliate family members as *derechohabientes*, thus the coverage of family members in migrant-headed households likely depends on the coverage of the migrant.

2011; Familiar et al. 2011). Indeed, Familiar et al. find higher levels of depression and anxiety related disorders among return migrants than corresponding non-migrants (2011: 89).

There is general empirical consensus that prior migration experience negatively effects the odds of having health insurance coverage in Mexico (Aguila and Zissimopoulos 2010; 2013; Pagan et al. 2007; Salinas et al. 2010). Despite the demonstration of significant health challenges, however, research directly exploring the effect of migration on insurance coverage remains limited. Studies that explore health insurance coverage have primarily relied on data from the first two waves of the Mexican Health and Aging Study (MHAS), which were conducted in 2001 and 2003. The MHAS surveyed Mexican adults fifty years and older.[2] Aguila and Zissimopoulos (2010) consider health insurance as a predictor of retirement age, finding that among older Mexicans, Social Security coverage is lower for return migrants than for comparable non-migrants. Subsequently, they conducted a similar study that focused explicitly on Social Security coverage among returnees, which supported their earlier finding and also suggested greater reliance on private insurers among return migrants relative to non-migrants (Aguila and Zissimopoulos 2013). Salinas et al. (2010) examined differences in coverage between rural and urban areas among older Mexicans, they controlled for prior migration experience and found a negative effect on the odds of being insured. Pagan et al. used the MHAS to show that health insurance coverage raises the likelihood of detecting certain chronic diseases among older Mexicans, they, also noted that a prior migration experience reduced the odds of coverage by nearly 50% (2007: Table III). Although these studies suggest a strong negative

[2] A third wave of the MHAS was conducted in 2012, however, its results are still restricted to older Mexicans.

association between migration and health insurance coverage in Mexico, their results are limited to older Mexicans and they do not speak to the effect that recent changes to the Mexican health insurance system may have had on coverage among return migrants. I summarize these changes in the next section. From these recent studies, I suggest the following hypothesis:

H1: Coverage will be lower among recently returned migrants than non-migrants.

HEALTH INSURANCE IN MEXICO AND THE ROLE OF OCCUPATION

Despite a long history of binational agreements between the U.S. and other countries, which allow migrant workers to transfer Social Security participation (and thus receipt of benefits) across borders (Butcher and Erdos 1988), and the high degree of Mexico-U.S. migration, the U.S. has not enacted such an agreement with Mexico. Further, while the Mexican Institute of Health recently created Salud Migrante, an experimental program intended to provide Mexican labor migrants in the U.S. access to Mexican Social Security benefits (Bustamante et al. 2012), the program is currently only available to guest workers with H-2A agricultural visas.[3] Thirdly, Aguila and Zissimopoulos found that among older returnees, less than 1 percent of short-term migrants and only 6.5 percent of long term-migrants received U.S. Social Security benefits (2013). For these reasons, discussion and analysis focuses on coverage under regular Mexican insurance programs only.

[3] In 2011 only 188,411 total workers were admitted with H-2A visas (Monger 2012: Table 2), compared to the 6.5 million ineligible undocumented Mexicans who were in the U.S. as of 2010 (Passell and Cohn 2011).

The *Instituto Mexicano de Seguro Social* (Mexican Institute of Social Security, SS) and *Seguro Popular de Salud* (Peoples' Health Insurance, SP) are the two dominant health insurance programs in Mexico. Workers in formally registered business and public employees can enroll in and SS or one of its subsidiaries.[4] The Mexican government created SP in 2003 because, in the words of then Secretary of Health, Julio Frenk, SP was introduced because "more than half of Mexican households lack[ed] health insurance" (Knaul and Frenk 2005). Today, family workers, business owners, artisans or traders, and laborers in informal Mexican firms can participate voluntarily in SP. Those who do participate make contributions, which are matched by the state and federal governments. SP payments can be waived based on demonstrated financial need. As of 2012, SP had not only enrolled upwards of fifty million Mexicans, but also saw disproportionate affiliation among rural and indigenous Mexicans—traditionally underserved groups (Knaul et al. 2012). In the face of these clear demonstrations of success, return migrants represent another important group whose coverage should be explored.

Because SP offers an insurance option to informally employed Mexicans, analysis of coverage among return migrants should take a nuanced approach to the effect of employment on insurance coverage. Although formal employment likely provides the most direct access to insurance coverage through SS, members of the informal economy now have an alternative option. To appropriately estimate the effect of occupational position on coverage, analysis should

[4] The Instituto de Seguridad de los Trabajadores del Estado (State Employees' Social Security Institute) covers state employees; Petróleos Mexicanos (Mexican Petroleum) covers individuals who work in the state owned oil and gas company, and the Mexican army and navy provide insurance to members of the armed forces.

operationalize how individuals variously sort themselves into formal versus informal positions. Scholars tend to view informal employment as resulting from one of two processes. Some researchers posit that laborers are *excluded* from formal employment due to insufficient human and social capital (de Soto 1989). Workers who are excluded from the formal sector may lack the financial and social capital to enroll in SP and, thus, be uninsured (Perry et al. 2007). Other scholars, however, view informal work as the result of intentional *exit*. From this perspective, the decision to work informally occurs following "valuation of net benefits associated with formality" (Hirschman 1970; Maloney 1999; Perry et al. 2007: 2). Some individuals opt out of formal salaried work to avoid the incumbent taxes and regulations (Perry et al. 2007). Multiple studies have documented a negative effect of SP on the size of the formal sector in Mexico, suggesting that SP reduces the benefits associated with formal work, thereby diminishing the costs associated with exit (Aterido et al. 2011; Hernández and Ramírez 2011). They further show that the effect is strongest in rural areas (Hernández and Ramírez 2011: 28), which is consistent with the greater informality and greater presence of SP, in rural Mexican communities (Gakidou et al. 2006; King et al. 2009). Contemporary scholars tend to conclude that exit and exclusion each account for entry into Mexico's informal sector (Bargain and Kwenda 2011; Bosch and Maloney 2007; Perry et al. 2007; Villarreal and Blanchard 2013). Distinguishing between exit and exclusion may provide a better indication of the true costs of informal work, by isolating those resigned to unstable employment due to limited alternatives.

Distinguishing between types of informality is especially important to the study of Mexican return migrants. Researchers have consistently found that Mexicans in rural areas with relatively unstable capital and labor markets often emigrate to the U.S. to minimize economic risk through occupational diversity, or to overcome weak capital markets through the

accumulation and remittance of foreign wages (Fussell and Massey 2004; Hamilton and Villarreal 2011; Villarreal and Blanchard 2013). These findings suggest that informally employed Mexican migrants may be "ambitious and enterprising individuals" who opt against formal employment to overcome market failures (Villarreal and Blanchard 2013: 773). This conclusion is further supported by Sheehan and Riosmena, who found that return migration had a statistically significant effect on informal business creation, but not on formal entrepreneurship (2013: 1101).

On the other hand, Villarreal and Blanchard (2013) also find support for the exclusionary hypothesis, finding greater odds of emigration among informally salaried workers. These findings suggest that distinguishing between informal salaried employees and self-employed workers may partially account for the differences between workers forced into self-employment and those who voluntarily exit (do not attempt to enter) formal employment. This distinction is consistent with previous scholarship (Bargain and Kwenda 2011; Bosch and Maloney 2007; Perry et al. 2007). Bargain and Kwenda find that in Mexico, while "all informal salary workers… are systematically underpaid… self-employment generates significant conditional premia" (2011: 120). Thus, relative to formal salaried work, which provides direct access to SS, I expect to find a reduced penalty due to self-employment (likely informal) relative to that incurred by informal salaried work. Further, because migration itself can represent a form of exit, I expect that the negative effect of informality on the odds of insurance coverage will be smaller for returnees than for non-migrants. These predictions are summarized in the following hypotheses:

H2: self-employed individuals will have greater odds of health coverage than informally salaried workers.

H3: the effects of informal salaried work and self-employment will be lower for return migrants than for non-migrants.

STRUCTURAL REINTEGRATION AND READJUSTMENT

Although scholars have noted the negative effect of prior migration experience on health insurance coverage, limited theoretical work has explored this relationship. Unlike economic models, which tend to portray reintegration outcomes as the results of successful versus failed migrations (Harris and Todaro 1970; Stark 1991; Stark and Bloom 1985; Todaro 1969), the structural framework posits that "[r]eturnees success or failure is analysed by correlating the 'reality' of the home economy and society with the expectations of the returnee" (Cassarino 2004: 257; Dumon 1986). In other words, regardless of the migration itself, structural challenges may present themselves because origin communities do not remain static while the migrant is abroad. A number of studies have identified a period of adjustment, during which migrants adapt to unfamiliar cultural and institutional settings and (re)enter social networks (Bernard and Ashton-Vouyoucalos 1976; Gmelch 1980; 1986; King 1977). In a study of Italian return migrants, Gmelch (1986) found that "while over half (51 percent) were dissatisfied during their first year back … among those who had been back for more than five years, the number who were maladjusted or felt dissatisfied dropped to 17 per cent" (1986: 163).

Given the recent creation of SP, unique challenges may confront Mexican return migrants as they encounter a potentially unfamiliar health insurance option with new guidelines and requirements for affiliation. The predicted readjustment period suggests that the gap in SS coverage between return and non-migrants identified by earlier research may extend to aggregate levels of coverage. Although Mexican migrants who chose to emigrate to the U.S. to maximize

returns to their skills may accumulate sufficient financial resources to affiliate with SP, their access to coverage may still be delayed as they acquire sufficient knowledge to affiliate. Further, the hundreds of thousands of Mexicans who are deported annually will almost certainly be unprepared to affiliate with a new program. For these reasons, it is likely that the implementation of SP has not completely ameliorated the negative effect of migration on the odds of having health insurance.

Structural analyses of return migrants suggest that the challenge of reintegration is moderated by community size encountered upon return. Colton (1993) found that, within a sample of Yemeni migrants, those who returned to rural areas were often frustrated by limited economic opportunities, which delayed their ability to benefit from new skills and financial resources accumulated abroad. Similar challenges likely frustrate Mexican return migrants, given the highly informal and often unstable economic conditions that persist in rural Mexican communities (Perry et al. 2007). Indeed, Salinas et al. (2010) found lower usage of health services in rural areas. The creation of SP, however, may have attenuated the negative effect of rural communities on insurance coverage by providing an option for informally employed Mexicans. Despite the creation of SP, recently returned Mexican migrants likely still experience limited coverage as the readjust to potentially unfamiliar settings.

THE GENDERED NATURE OF MEXICAN MIGRATION

Finally, substantial research suggests that the effects of a prior return migration will differ by sex. A number of studies, both ethnographic (Hagan 1998; Hondagneu-Sotelo 1994) and quantitative (Curran and Rivero-Fuentes 2003) indicate that highly gendered migrant networks connect Mexico to the U.S. Both Hagan (1998) and Curran and Rivero-Fuentes (2003) find that

the odds of an individual migration increase in relation to the number of contacts of the same gender in the place of destination. Within migrant flows, male migrants are much more likely to leave established families behind, while women tend to travel to the U.S. either as young singles or to re-unite with their husbands (Cerrutti and Massey 2001; Hondagneu-Sotelo 1994). This trend has continued even as women account for an increasing proportion of Mexican migrants to the U.S. (Cerrutti and Gaudio 2010). Male return migrants may face reduced challenges to reintegration because they are more likely to return to family members with knowledge of cultural and institutional changes. Additionally, female Mexicans tend to remain in the U.S. longer than men (Ruiz-Tagle and Wong 2009), which is expected to increase the readjustment period (Cassarino 2004). Thus, I propose the final hypothesis:

H4: A prior migration experience will have a stronger negative effect on the odds of coverage for women than for men.

DATA AND ANALYTIC STRATEGY

DATA SOURCE AND FOCAL VARIABLES

The following analyses rely on data from the 2010 Censo de Poblacion y Vivienda (Census of Population and Housing, CPV), the long-form questionnaire included in Mexico's ten percent decennial census. The Instituto Nacional de Estadística y Geografía (National Institute of Statistics and Geography, INEGI) surveyed a stratified random sample of about 2.9 million households. Individual questionnaires were completed for each regular household member. The INEGI used the stratified design to collect representative data for primary sampling units of four different sizes: less than 2,500, between 2,500 and 14,999, 15,000 to 99,999, and more than 100,000 households. Smaller areas were oversampled to provide precise estimates of survey data

by community size. INEGI provides the CPV data individually by state. To conduct national level analysis, the state files were aggregated into one dataset that contained 11.9 million individual observations. Weights are used to account for the complex survey design. All analyses were conducted using STATA 13.

Analyses are conducted at the individual rather than the household level, which Andersen argues is the optimal way to measure access to health services (1995). I restrict the analytic sample to household heads, which significantly reduces missingness and increases the proportion of return migrants. Because those covered by SP and SS have the option to affiliate additional household members, results are expected to provide a general indication of the impact of Mexican migration on health insurance coverage in Mexico. Fewer than three percent of household heads were omitted due to missing information. The final sample contains 2,826,336 observations. Because survey subpopulation commands are used, standard errors incorporate the entire sample of 11,938,402 observations.

The CPV asks respondents to select from eight insurance options: 1) Social Security, 2) Social Security for Government Workers, 3) Social Security for State workers, 4) Military/Navy insurance coverage, 5) Seguro Popular, 6) Private, 7) Other, or 8) Uninsured. Although they have the option to list a second coverage program, over 99% only provided one. Thus, only the primary listing is considered. Separate models are estimated using two alternative measures of coverage status. The first measure collapses categories 1 through 7 into insured to compare respondents with any form of coverage against uninsured individuals (8=0). The second measure collapses the three Social Security programs, categories 1 through 3, to include those covered by Social Security (SS=1) and uses 5, Seguro Popular, as the base category (SP=0). This is an extremely important component of the analysis because SP was created primarily to insure

informal and rural Mexicans (Gakidou et al. 2006; Knaul and Frenk 2005), who are more likely to migrate to the U.S. than their formal, urban counterparts. This alternative outcome variable only includes individuals who are insured through SS or SP, it estimates on 1,758,075 observations (these models do not include the uninsured, or those with private, other, or military insurance). Models present estimations for both outcome variables side by side. By placing a variable's effect on aggregate health insurance coverage adjacent to its effect on SS relative to SP, it is possible to approximate the reductive effect that SP has had on aggregate health insurance disparities not just across, but also within different demographic and economic characteristics—such as migrant status.

The key independent variable indicates whether or not a respondent recently returned from the U.S. Each respondent provides country of residence as of June 2005 (five years prior to the census). Those who respond U.S. must have returned from the U.S. following June 2005 and prior to the administration of the Census, June 2010. This question is commonly used to identify return migrants within the Mexican Census (Quintero 2011; Masferrer and Roberts 2012). Although this measure has the disadvantage of missing migrants who returned to Mexico prior to 2005, it does highlight recently returned migrants, many of whom are likely in. Individuals coded as return migrants are likely in the midst of the reintegration process. Analyses should present a robust indication of the challenges experienced by returnees during the reintegration process. Multivariate logit models estimate the effect of prior migration experience on health coverage as additional factors are accounted for. Separate models are estimated for men and women to identify gendered aspects of institutional re-entry.

MODELING HEALTH COVERAGE

Much of contemporary research on health care access builds on the Andersen behavioral model of health services utilization (1995). Andersen suggests that "people's use of health services is a function of their predisposition to use services, factors which enable or impede use, and their need for care" (1995: 1). Because health insurance mediates the relationship between predisposing factors and health services utilization (Davidson et al. 2004; Tamez-Gonzalez et al. 2006), these factors are incorporated into the models. Additionally, because Mexican migration to the U.S. may be caused by factors similar to those that reduce the odds of being insured, such as low education or minority status, the inclusion of predisposing characteristics accounts for sources of potential spuriousness. Although the Andersen model suggests that income is an important enabling characteristic (Davidson et al. 2004), I rely on occupational position instead. Danese-dlSantos et al. (2011) show, contrary to earlier research (Brown et al. 2005), that the introduction of SP significantly reduced the enabling effect of income. Thus, I instead rely on occupational position, as a predictor both of coverage status and of program choice. Health status is not included in the models. The omission of health is consistent with previous studies that focus explicitly on health insurance coverage as opposed to health services utilization (Aguila and Zissimopoulos 2013).

Predisposing factors include age, educational attainment, marital status, membership in an ethnic minority group, and "especially recent immigrants" (Davidson et al. 2004: 22). Age is included categorically as a series of ten-year increments to allow for a non-linear effect. Education is also included categorically as highest degree attained. I control for marital status as: 1) single and never married, 2) widowed/separated, 3) cohabitating, or 4) married. Indigeneity is

used to operationalize potential racial/ethnic discrimination. A considerable body of research suggests that indigenous Mexicans tend to be disadvantaged (Psacharopoulos and Patrinos 1994; Ramirez 2006). Additionally, Villarreal (2010) identifies indigenous characteristics as a partial predictor of phonotypical discrimination (darker skin color) and lower socioeconomic attainment. Models include a categorical variable that distinguishes individuals who: 1) do not consider themselves to be indigenous, 2) identify as members of an indigenous group, or 3) identify as indigenous and speak an indigenous dialect. Finally, unlike Aguila and Zissimopoulos (2013) and Salinas et al. (2010) I control for recent internal migration as well as international return. Individuals are classified as internal migrants if they resided in a Mexican state other than their current state of residence five years prior to the census.

Occupational formality. To measure differences in coverage by economic sector, I distinguish between formally and informally employed household heads. The two most common means of distinguishing between formal and informal workers are the number of workers in the firm and the receipt of Social Security benefits.[5] Because the CPV does not request firm size and Social Security is incorporated into both outcome variables of interest, I utilize an alternative distinction. Respondents who are working select an occupational title from the following list: *empleado u obrero*, (employee or worker), *jornalero o peon*, (laborer or peon), *ayudante* (assistant/helper), *patron o empleador* (employer manager), *trabajador por cuenta propia* (self-employed), *trabajador familiar sin pago* (unpaid family worker—separate category from homemaker). From this list, only *empleado u obrero* are counted as formally employed. I code

[5] Villarreal and Blanchard use the latter in their study that identifies informality as a predictor of Mexican emigration (2013: 758).

these individuals as "formal salaried workers." Those who describe themselves as *jornalero o peon, ayudante,* or *trabajador familiar sin pago* are coded as "informal salaried workers." Although those who respond *trabajador por cuenta propia* are likely also members of the informal economy (Arias et al. 2010; Perry et al. 2007), they are coded separately as "self-employed workers." As discussed in the background section, comparing informal salaried workers against the self-employed is considered an effective technique to account for the differences between workers excluded from the formal sector and those who voluntarily exit or do not pursue formal employment (Bargain and Kwenda 2011; Bosch and Maloney 2007; Perry et al. 2007; Villarreal and Blanchard 2013). Only a small percentage of household heads (both migrant and non-migrant) described themselves as *patron o empleador,* these respondents are separated from the self-employed because they could be owners of small informal firms or managers in large formally recognized corporations; they are coded as "managers/supervisors." Those who are not working are coded as either: looking for work or not in the labor force, according to their self-description.

Each model also contains a series of dummy variables that control for the effects of community size. Communities are classified as less than 2,500, 2,500 to 14,999, and 15,000 to 99,999 households, relative to those with 100,000 or more. The community size variable indicates the extent to which previously identified disparities between rural and urban communities persist (Salinas et al. 2010). The first model indicates the association between prior migration experience and health coverage, net of community size. Model 2 adds the predisposing controls. Next, the measures of occupation are introduced. Finally, model 4 interacts occupation and prior international migration experience to test whether migration moderates the effect of informality on health coverage. All Models are estimated and discussed separately for men and

women to indicate similarities and differences in the effect of a prior migration experience on health insurance coverage by sex.

RESULTS

DESCRIPTIVE RESULTS

Table 1 presents weighted descriptive statistics for CPV household heads. Both male and female return migrants have considerably higher proportions of uninsured than non-migrants. Note, as predicted by H4, the gap in coverage is considerably larger for women (26%) than it is for men (16%). The difference in uninsurance appears to be a result of disparate coverage under SS. About 45% of non-migrants, men and women, affiliate with Social Security, compared to only about 20% of return migrants. Return migrants are more likely to be covered under SP, indicating greater informality. Migrants are somewhat more centralized with regard to both age and education. Only minimal differences are seen in indigenous status. Female migrants have by far the greatest proportion who are widowed, separated, or divorced. Consistent with their greater tendency toward SP, return migrants (especially men) are more likely to be employed informally or self-employed than to be formal salaried workers. The reverse is true for non-migrants.

[Table 1 about here]

HEALTHCARE ESTIMATIONS FOR WOMEN

Table 2 contains weighted estimates for female household heads of the effect of migrant status, net of controls, first on the odds of being insured and second on the odds of being covered by SS relative to SP. The odds ratios for migrant status indicate the odds of being insured and the odds of having Social Security coverage among those with prior migration experience relative to

those without. Model 1 indicates that international return migrant women are insured at a rate about 66 percent lower than non-migrants, net of community size. Further, a prior migration experience reduces the odds of affiliation with SS relative to SP by 58% (1-0.422). Both effects are robust at the 0.001 level. Prior internal migration experience has a negative effect on coverage, but increases the odds of being covered by SS relative to SP, suggesting that migration to the U.S. is a distinct process from migration between Mexican states. As expected, the odds of being insured correlate positively to community size and the odds of SS increase relative to SP as communities grow.

[Table 2 about here]

Model 2 incorporates predisposing variables to test whether the observed relationship between return migration and health coverage is spurious. The addition of age, education, marital status, and indigeneity, only slightly attenuate the effect of migration on aggregate coverage and on SS relative to SP. Age and education have the expected effects, correlating positively to coverage and SS relative to SP. All marital statuses increase the odds of being insured and the odds of having SS, relative to being single. Indigeneity appears to be correlated with lower levels of coverage and a greater tendency toward SP among the insured, suggesting as anticipated that indigenous Mexicans are disadvantaged (Villarreal 2010). The predisposing factors appear to largely explain the effects of community size on aggregate coverage. Only the largest communities increase the odds of being insured, net of age, education, marital status, and indigeneity. Larger communities still significantly increase the odds of SS relative to SP, though the effect is reduced. Model 2 provides strong support for H1.

Model 3 adds the measures of informality, measured relative to those who described themselves as formal salaried workers. The addition of occupational categories weakens the

effect of a prior migration experience slightly, but female return migrants still receive coverage at a rate less than half that of comparable non-migrants. The predisposing controls remain largely unchanged. As expected, all non-formal employment categories result in substantially reduced odds of coverage, with the largest penalty occurring for those who report that they are looking for but unable to find work. Further, non-formal respondents experience extremely reduced odds of coverage under SS relative to SP. Interestingly, self-employed women have lower odds of coverage than informal salaried workers. This result suggests that either women who voluntarily exit the formal labor force have reduced access to or proclivity toward insurance, or that self-employment does not accurately predict voluntary exit among women. In either case, H2 does not hold up among female respondents.

Model 4 interacts return migrant status with occupational category. The migrant effect is attenuated further, indicating that the negative effect of a prior migration experience is lower among formally employed return migrant women (represented by the international migrant odds ratio), relative to the non-formally employed, and women who have exited the labor force. The interaction effects for informally and self-employed women are positive, however, with the exception of manager/supervisor, none of the interactions are significant. In other words, the effects of informality among return migrant women cannot be separated from the effects among non-migrant women with statistical confidence. Model 4 does not provide support for H3 among women.

HEALTHCARE ESTIMATIONS FOR MEN

Table 3 contains weighted estimates of the models 1-4 for male household heads. Model 1 indicates that, net of community size, international return migrant men are about half as likely

(0.549/1) as non-migrant men to be insured. Comparing Model 1 from tables 2 and 3 indicates that a prior migration experience has a greater relative effect on the odds of being insured for female household heads relative to males. This outcome is not surprising given the higher rate of uninsurance among return migrant women relative to men, shown in Table 1. Model 1 supports H4. Similar to women, return migrant men have significantly reduced odds of coverage under SS relative to SP—though, again, the effect is not as strong among. The effect of community size is consistent between the sexes.

[Table 3 about here]

The addition of predisposing factors in Model 2 attenuates the effect of a prior migration experience on odds of being insured for men, as it does for women (Table 2). Interestingly, the attenuation is greater for men than for women, suggesting that a greater proportion of the migrant effect among men is accounted for by predisposing, third, factors that may contribute to uninsurance and the migration decision jointly. Additionally, the SS vs. SP coefficient increases from 0.478 to 0.573, a much greater reduction in strength than took place among women. Again, the predisposing variable have the expected effects and the effect of community size diminishes considerably. The effects of Indigeneity, both on coverage and program choice, are nearly identical for men and women, suggesting a consistent race/ethnic penalty on insurance status. Net of predisposing factors, H4 remains robust, with male return migrants receiving a penalty considerably less than that incurred by female returnees (0.584 versus 0.348).

Model 3 indicates that for men as well as women, employment upon return plays an important role in determining both access to coverage and program choice. Informal salaried workers and the self-employed both have significantly lower rates of coverage. As was the case with women, self-employment has a stronger negative effect than informal salaried work,

contrary to expectations (Perry et al. 2007; Villarreal and Blanchard 2013). The self-employment wage premium identified by Bargain and Kwenda (2011) does not translate into greater odds of being insured. As was the case for women, Model 3 rejects H2. As expected, all the non-formal employment categories significantly reduce the odds of having SS relative to SP. The inclusion of occupational categories weakens the effect of both education and indigenous status, suggesting that employment mediates the relationship between sociodemographic measures of disadvantage and health insurance coverage. Finally, net of occupational categories, community size actually correlates negatively with odds of coverage, indicating that occupational options also mediate the effect of area population on coverage; the relationship between community size and program affiliation remains positive, though it is attenuated further.

Whereas there was not an apparent moderating effect among women, Table 3 indicates that migration does moderate the effect of employment on health insurance coverage among male household heads. In Model 4, the odds ratio for international migrants (now including only those who are formal salaried workers) increases in strength, indicating that the negative effect of migration is greater when constrained to formally employed workers. The interaction terms for informal salaried workers and self-employed workers, shown at the bottom of Model 4, are positive and robust (0.001). These results indicate that among male returnees, the increased consequences experienced by formally employed returnees are accounted for by reduced penalties incurred by informal employment. The interactions among male household heads support H3. Although there is not a benefit for self-employment relative to informal salaried work among male returnees, prior migration experience reduces the penalty of non-formal employment, suggesting that migrants may be more likely to voluntarily forego formal employment than similar non-migrants (Villarreal and Blanchard 2013).

DISCUSSION AND CONCLUSION

Research on health insurance has devoted insufficient attention to differences in coverage between return migrants and non-migrants. Additionally, studies have tended to rely on data that limits generalizability. Seguro Popular's creation in 2003 offered alternative occupational pathways to coverage, facilitating the affiliation of millions of previously uninsured individuals and their family members. This study builds on previous findings that indicate lower rates of coverage among return migrants, by identifying different effects of job formality and self-employment according to migrant status. Further, the results indicate that the penalty incurred by a prior migration experience is greater for women than men. The findings remain strong and robust after the inclusion of controls for age, education, marital status, indigeneity, and community size.

This analysis indicates that Mexican return migrants, net of occupational formality, have significantly lower odds of being affiliated with Social Security relative to Seguro Popular than similar non-migrants. Results may be indicative of a readjustment period that has been suggested by several earlier studies (Cassarino 2004: 257; Dumon 1986; Gmelch 1980). The consequences of migrants' delayed access are significant given their risk of mental and physical health challenges, incurred while abroad (Alegria et al. 2007; Orrenius and Zavodny 2009) and/or during and following the return process (Breslau et al. 2011; Familiar et al. 2011). Because this study employs a dichotomous indicator of prior migration experience, it does not test the interaction between time since return and prior migration experience. Future research could further explore Mexican reintegration by measuring access to health insurance among return migrants as a factor of time since return.

Despite diminished access to institutional safety nets, male returnees do not incur the same penalty from informal employment as non-migrants. This result supports what scholars have previously suggested, that migration (like informal employment) sometimes represents a form of intentional exit, in which individuals opt out of their immediate labor market to pursue different economic options abroad (Stark 1991; Villarreal and Blanchard 2013). If migration can represent a form of exit, then it is reasonable to assume that migrants working informally are more likely to have exited or avoided the formal sector voluntarily and are therefore less likely to suffer consequences than informally employed non-migrants. Of note, despite previous findings that informally self-employed Mexicans outperform informally salaried workers (Bargain and Kwenda 2011), the self-employment actually has a stronger negative effect for both men and women.

Overall, scholars and policymakers alike should continue to explore social, economic, and temporal processes through which return migrants do gain access to health care—paying close attention to differences between Social Security and Seguro Popular. Previous research demonstrates that migrants can act as important agents of economic change (Massey and Parrado 1998). High rates of mental and physical health challenges, however, present significant barriers to economic participation (Benjet et al. 2013). Masferrer and Roberts recently published an analysis of contemporary return destinations among Mexican return migrants, they describe returnees as "a mobile population that has already been exposed to migration and may easily move again, either back to the United States or elsewhere in the country. Their mobility may make difficult social policies designed to re-integrate migrants into their communities of origin." (2012: 492). Realizing the benefits of diverse and often highly skilled migrant labor force should involve not just incentives to invest new businesses and community development, but also

institutional support and protection. As Mexico's health insurance system continues to evolve, significant attention should be paid to the affiliation of return migrants, and to the different gendered and occupational processes that affect return migrants' abilities to reintegrate and gain access to institutional protection.

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Table 1. Weighted descriptive statistics for Mexican household heads by sex and migrant status, 2010

	Women		Men	
	Non-migrant	Return Migrant	Non-migrant	Return Migrant
Insurance Status				
Uninsured	29.0	55.1	30.6	46.3
Social Security	46.6	19.2	44.5	21.0
Seguro Popular	20.5	21.2	20.5	29.0
Private	2.3	3.3	2.7	2.2
Other	1.7	1.2	1.7	1.5
Age				
12 to 24	3.6	6.6	4.8	6.6
25 to 34	12.2	30.5	20.0	38.1
35 to 44	20.1	32.3	25.9	31.7
45 to 54	21.4	15.3	21.2	14.9
55 to 64	17.9	8.2	14.3	6.1
65 plus	24.9	7.2	13.7	2.6
Highest degree completed				
Less than primary	14.8	4.4	8.4	3.9
Primary	38.5	33.2	34.9	39.8
Secondary	17.5	29.2	24.0	33.7
College	8.2	16.3	12.9	15.1
Graduate	21.0	16.9	19.8	7.6
Indigeneity				
Not indigenous	85.9	88.5	84.4	84.4
Identifies as indigenous	8.4	9.6	8.0	11.0
Identifies and speaks an indigenous dialect	5.7	1.9	7.6	4.7
Marital Status				
Single, never married	16.7	16.3	4.9	6.7
Widowed, separated, divorced	60.7	39.2	6.9	6.0
Cohabitating	7.6	16.6	19.6	27.9
Married	15.1	27.9	68.7	59.4
Employment status				
Formal salaried	29.7	22.1	44.5	35.5
Informal salaried	2.6	3.6	10.7	18.2
Self-employed without employees	15.0	18.5	23.5	25.0
Employer/Manager	1.4	1.8	3.5	3.5
Looking/unable to work	0.9	2.3	3.3	6.2
Not in labor force	50.5	51.8	14.5	11.7
Community size				
Fewer than 2,500	17.2	21.9	23.4	38.8
2,500 to 14,999	12.4	16.0	13.9	19.0
15,000 to 99,999	14.8	17.7	14.5	15.4
100,000 or more	55.7	44.4	48.3	26.7
Sample N = 2,826,336	628,670	4,773	2,144,689	48,204

Table 2. Weighted logistic regression of insurance coverage and program choice (female)

	Model 1		Model 2		Model 3		Model 4	
VARIABLES	Insured	SS vs. SP	Insured	SS vs. SP	Insured	SS vs. SP	Insured	SS vs. SP
Migrant status								
International migrant	0.339***	0.422***	0.348***	0.456***	0.377***	0.508***	0.406***	0.759
	(0.020)	(0.044)	(0.020)	(0.049)	(0.022)	(0.052)	(0.051)	(0.131)
Internal migrant	0.733***	1.455***	0.740***	1.386***	0.728***	1.355***	0.728***	1.355***
	(0.029)	(0.084)	(0.029)	(0.084)	(0.031)	(0.081)	(0.031)	(0.081)
Age (ref = 12 to 24)								
25 to 34			1.145***	1.339***	1.107**	1.186***	1.107**	1.186***
			(0.038)	(0.065)	(0.038)	(0.061)	(0.038)	(0.061)
35 to 44			1.251***	1.600***	1.238***	1.432***	1.239***	1.433***
			(0.041)	(0.076)	(0.041)	(0.072)	(0.041)	(0.072)
45 to 54			1.367***	2.615***	1.454***	2.790***	1.454***	2.791***
			(0.046)	(0.128)	(0.050)	(0.143)	(0.050)	(0.143)
55 to 64			1.843***	4.288***	2.102***	5.351***	2.102***	5.353***
			(0.067)	(0.219)	(0.077)	(0.284)	(0.077)	(0.284)
65 plus			2.294***	6.644***	2.596***	8.459***	2.595***	8.457***
			(0.084)	(0.350)	(0.095)	(0.459)	(0.095)	(0.458)
Education (ref = less than primary)								
primary			1.476***	2.047***	1.493***	2.055***	1.493***	2.055***
			(0.031)	(0.047)	(0.034)	(0.048)	(0.034)	(0.048)
Secondary			1.984***	3.770***	1.949***	3.555***	1.950***	3.555***
			(0.052)	(0.115)	(0.055)	(0.113)	(0.055)	(0.113)
College			2.262***	8.556***	2.131***	7.481***	2.131***	7.484***
			(0.074)	(0.358)	(0.074)	(0.320)	(0.075)	(0.320)
Graduate degree			3.501***	22.294***	3.143***	17.648***	3.144***	17.666***
			(0.106)	(1.043)	(0.104)	(0.836)	(0.104)	(0.837)
Marital status (ref = single)								
Widowed, separated, divorced			1.262***	1.234***	1.324***	1.362***	1.324***	1.362***
			(0.024)	(0.036)	(0.027)	(0.043)	(0.027)	(0.043)
Cohabitating			1.119***	0.718***	1.204***	0.811***	1.204***	0.812***
			(0.029)	(0.027)	(0.032)	(0.031)	(0.032)	(0.031)
Married			1.388***	1.208***	1.518***	1.491***	1.519***	1.492***
			(0.030)	(0.037)	(0.034)	(0.049)	(0.034)	(0.050)
Indigeneity (ref = non-indigenous)								
Identifies as indigenous			0.920***	0.855***	0.944*	0.892***	0.944*	0.892***
			(0.021)	(0.023)	(0.022)	(0.024)	(0.022)	(0.024)
Identifies and speaks an indigenous language			0.779***	0.595***	0.813***	0.620***	0.812***	0.620***
			(0.017)	(0.021)	(0.018)	(0.023)	(0.018)	(0.023)

Employment status								
Informal salaried					0.435***	0.238***	0.434***	0.237***
					(0.018)	(0.013)	(0.018)	(0.013)
Self-employed without employees					0.336***	0.204***	0.336***	0.204***
					(0.008)	(0.007)	(0.008)	(0.007)
Employer/Manager					0.299***	0.337***	0.297***	0.337***
					(0.017)	(0.028)	(0.017)	(0.028)
Looking/unable to work					0.295***	0.208***	0.292***	0.211***
					(0.019)	(0.023)	(0.019)	(0.023)
Not in labor force					0.564***	0.386***	0.565***	0.388***
					(0.013)	(0.010)	(0.013)	(0.010)
Migrant_ X_ Formal Salaried								
Migrant _X_ Informal Salaried							1.180	2.109
							(0.312)	(0.887)
Migrant _X_ Self-employed							1.069	0.602
							(0.199)	(0.231)
Migrant _X_ Employer/supervisor							1.953*	1.050
							(0.632)	(0.664)
Migrant _X_ Looking for work							2.179	0.263*
							(0.941)	(0.171)
Migrant _X_ Not in labor force							0.799	0.513**
							(0.120)	(0.115)
Community size (ref = less than 2,500)								
2,500 to 14,999 inhabitants	1.040*	2.393***	0.945**	1.987***	0.928***	1.932***	0.928***	1.932***
	(0.020)	(0.069)	(0.018)	(0.057)	(0.018)	(0.055)	(0.018)	(0.055)
15,000 to 99,999 inhabitants	1.199***	4.744***	0.999	3.493***	0.960*	3.329***	0.960*	3.329***
	(0.023)	(0.136)	(0.020)	(0.097)	(0.019)	(0.094)	(0.019)	(0.094)
100,000 or more inhabitants	1.545***	14.799***	1.129***	9.006***	1.065**	8.498***	1.064**	8.500***
	(0.030)	(0.437)	(0.024)	(0.266)	(0.024)	(0.258)	(0.024)	(0.258)
Constant	1.900***	0.404***	0.716***	0.053***	1.158**	0.106***	1.157**	0.106***
	(0.028)	(0.009)	(0.029)	(0.003)	(0.056)	(0.007)	(0.056)	(0.007)
N	633443	400154	633443	400154	633443	400154	633443	400154

Note: Taylor series linearization method used to calculate Standard errors (shown in parentheses)
*** p<0.001, ** p<0.01, * p<0.05

Table 3. Weighted logistic regression of insurance coverage and program choice (male)

	Model 1		Model 2		Model 3		Model 4	
VARIABLES	Insured	SS vs. SP	Insured	SS vs. SP	Insured	SS vs. SP	Insured	SS vs. SP
Migrant status								
International migrant	0.549***	0.478***	0.584***	0.573***	0.616***	0.644***	0.507***	0.581***
	(0.010)	(0.016)	(0.011)	(0.020)	(0.013)	(0.023)	(0.018)	(0.029)
Internal migrant	0.874***	1.780***	0.895***	1.600***	0.830***	1.486***	0.829***	1.486***
	(0.019)	(0.061)	(0.019)	(0.056)	(0.018)	(0.056)	(0.018)	(0.056)
Age (ref = 12 to 24)								
25 to 34			1.139***	1.245***	1.183***	1.263***	1.182***	1.262***
			(0.022)	(0.048)	(0.023)	(0.057)	(0.023)	(0.057)
35 to 44			1.064**	1.263***	1.206***	1.428***	1.206***	1.428***
			(0.022)	(0.050)	(0.025)	(0.065)	(0.025)	(0.065)
45 to 54			0.996	1.607***	1.209***	2.074***	1.210***	2.075***
			(0.020)	(0.065)	(0.024)	(0.095)	(0.024)	(0.095)
55 to 64			1.240***	2.609***	1.586***	4.085***	1.586***	4.088***
			(0.026)	(0.106)	(0.034)	(0.187)	(0.034)	(0.187)
65 plus			1.862***	3.918***	2.198***	6.083***	2.189***	6.079***
			(0.045)	(0.180)	(0.053)	(0.290)	(0.053)	(0.290)
Education (ref = less than primary)								
primary			1.373***	1.754***	1.403***	1.795***	1.403***	1.795***
			(0.021)	(0.052)	(0.020)	(0.051)	(0.020)	(0.051)
Secondary			1.828***	3.846***	1.722***	3.443***	1.722***	3.444***
			(0.034)	(0.118)	(0.032)	(0.104)	(0.032)	(0.104)
College			2.142***	7.380***	1.995***	6.343***	1.995***	6.343***
			(0.045)	(0.251)	(0.040)	(0.210)	(0.040)	(0.210)
Graduate degree			2.951***	20.282***	2.705***	16.071***	2.704***	16.071***
			(0.061)	(0.724)	(0.054)	(0.562)	(0.054)	(0.562)
Marital status (ref = single)								
Widowed, separated, divorced			1.265***	1.118	1.266***	1.090	1.265***	1.089
			(0.053)	(0.124)	(0.049)	(0.113)	(0.049)	(0.113)
Cohabitating			1.273***	0.560***	1.313***	0.565***	1.313***	0.565***
			(0.043)	(0.047)	(0.040)	(0.048)	(0.040)	(0.048)
Married			2.068***	0.949	2.120***	0.981	2.119***	0.980
			(0.070)	(0.078)	(0.063)	(0.080)	(0.063)	(0.080)
Indigeneity (ref = non-indigenous)								
Identifies as indigenous			0.938**	0.864***	0.956*	0.903***	0.957*	0.903***
			(0.020)	(0.023)	(0.018)	(0.021)	(0.018)	(0.021)
Identifies and speaks an indigenous language			0.773***	0.592***	0.881***	0.725***	0.882***	0.725***
			(0.016)	(0.021)	(0.019)	(0.029)	(0.019)	(0.029)

Employment status								
Informal salaried					0.426***	0.175***	0.421***	0.174***
					(0.007)	(0.004)	(0.007)	(0.004)
Self-employed without employees					0.276***	0.146***	0.273***	0.145***
					(0.004)	(0.003)	(0.004)	(0.003)
Employer/Manager					0.264***	0.262***	0.262***	0.260***
					(0.006)	(0.011)	(0.006)	(0.011)
Looking/unable to work					0.323***	0.154***	0.319***	0.154***
					(0.007)	(0.005)	(0.007)	(0.005)
Not in labor force					0.676***	0.411***	0.684***	0.411***
					(0.011)	(0.009)	(0.011)	(0.009)
Migrant _X_ Formal Salaried								
Migrant _X_ Informal Salaried							1.577***	1.516***
							(0.078)	(0.126)
Migrant _X_ Self-employed							1.576***	1.451***
							(0.078)	(0.130)
Migrant _X_ Employer/supervisor							1.777***	1.272
							(0.238)	(0.309)
Migrant _X_ Looking for work							1.669***	1.140
							(0.142)	(0.224)
Migrant _X_ Not in labor force							0.600***	0.686***
							(0.038)	(0.069)
Community size (ref = less than 2,500)								
2,500 to 14,999 inhabitants	1.060***	2.466***	0.939***	1.924***	0.844***	1.631***	0.844***	1.631***
	(0.019)	(0.075)	(0.017)	(0.053)	(0.016)	(0.044)	(0.016)	(0.044)
15,000 to 99,999 inhabitants	1.225***	5.465***	0.988	3.622***	0.825***	2.766***	0.825***	2.766***
	(0.022)	(0.166)	(0.018)	(0.099)	(0.017)	(0.074)	(0.017)	(0.074)
100,000 or more inhabitants	1.493***	15.726***	1.115***	8.773***	0.893***	6.465***	0.893***	6.463***
	(0.026)	(0.488)	(0.022)	(0.260)	(0.019)	(0.188)	(0.019)	(0.187)
Constant	1.821***	0.459***	0.643***	0.136***	1.168***	0.312***	1.175***	0.313***
	(0.027)	(0.012)	(0.024)	(0.014)	(0.045)	(0.036)	(0.045)	(0.036)
N	2192893	1357921	2192893	1357921	2192893	1357921	2192893	1357921

Note: Taylor series linearization method used to calculate Standard errors (shown in parentheses)
*** p<0.001, ** p<0.01, * p<0.05