Published in final edited form as:

Popul Res Policy Rev. 2015 June 1; 34(3): 307–330. doi:10.1007/s11113-014-9339-4.

The Impact of Social Security on Return Migration among Latin American Elderly in the U.S.

Alma Vega, Ph.D.

RAND Corporation **Address:** 1776 Main Street, P.O. Box 2138, Santa Monica, CA 90407-2138
avega@rand.org **Phone:** (310) 393-0411 x7199 **Fax:** (310) 260-8176

Abstract

International migration has long been considered the preserve of working-age adults. However, the rapid diversification of the elderly population calls for increased attention to the migration patterns of this group and its possible motivations. This study examines whether Latin American immigrants who are primary Social Security beneficiaries are more likely to return to their home countries during later life if they receive lower Social Security benefits. Using a regression discontinuity approach on restricted data from the U.S. Social Security Administration (N=1,515), this study presents the results of a natural experiment whereby the Social Security Administration unexpectedly lowered the Social Security benefits of the 1917-1921 birth cohorts due to a miscalculation in the benefit-calculation formula. Results suggest that approximately 10% of primary Social Security beneficiaries from Latin America born close to these dates return migrated, the probability of which was not affected by Social Security benefit levels.

Keywords

international retirement migration; Social Security; elderly Hispanics; retirement

INTRODUCTION

Two population trends are rapidly changing the U.S. demographic landscape and will continue to do so for many years to come: immigration and aging. Large inflows of foreign migrants enter the U.S.¹ as it undergoes unprecedented population aging, significantly altering its demographic composition. The extent of this change cannot be fully understood without understanding the interaction between these two processes. In addition to directly affecting the U.S. population composition, immigration and aging may interact and affect one another. To date, most empirical work on the interaction between aging and immigration has focused on the effects of migration on Social Security (Burtless and Singer 2011; Gustman and Steinmeier 1998; Lee and Miller 2000; Office of the Inspector General 2002). Far less work has examined the effects of Social Security on migration.²

¹Recent evidence suggests that unauthorized immigration into the United States has decreased (Cave 2011; Hoefer, Rytina, and Baker 2011; Passel and Cohn 2010). Nonetheless, this is a fairly recent dip following a four-decade increase. Further studies should examine if this is a temporary downward spike or a continuous trend.

²Sana and Massey (2000) provide one of the few studies that examine the effect of Social Security on immigration. The authors find that male household heads in Mexico with jobs that did not participate in Mexico's Social Security system were more likely to migrate to the United States than their counterparts with jobs who did participate in this program.

One way Social Security may influence migration is by prompting return to the country of origin. Wealth differentials created by Social Security may lower or increase rates of return migration depending on whether U.S. residence during later life is a normal good.³ Wealthier migrants may view their income as a means through which they can enjoy a better life in their home country upon retiring. Conversely, these migrants may choose to return migrate only upon concluding that their income is insufficient to make ends meet in the United States.

Return migration has many economic and social implications for the United States. These include potential savings on old-age support programs such as Medicare and Supplemental Security Income which are generally unavailable abroad, selectivity among immigrants who remain, and indicators of assimilation patterns for immigrants who reach old age in the United States.

As the largest group of immigrants in the United States (54%) (Grieco 2010), Hispanic immigrants can help provide a better understanding of return migration and its effects on old-age support programs. Hispanics currently comprise 7% of all elderly and are expected to comprise 20% of all elderly by 2050 (Administration on Aging 2010). Their sheer volume make Hispanic immigrants a key segment in studying return migration among the elderly. This is the case despite the fact that to date, research on international migration during later life has focused heavily on older Europeans (Casado-Díaz, Kaiser, and Warnes 2004; Williams, King, and Warnes 1997) and older native-born Americans (Sunil, Rojas, and Bradley 2007; Truly 2002).

This study assesses the role of Social Security in prompting return migration among older U.S. immigrants from Latin America. It observes the results of a natural experiment created by the “notch” generation whereby the Social Security Administration lowered the benefits of those born after December 31, 1916 due to a miscalculation in the benefit-calculation formula. The present study examines whether those with lower payments were more likely to return migrate than those with higher Social Security levels.

The “Notch” Generation

The basis for this natural experiment originates in the 1970s. In 1972, Congress implemented automatic cost-of-living-adjustments to Social Security payments in order to account for rising inflation. A later discovery that the benefit-calculation formula for beneficiaries born between 1910 and 1916 was flawed in indexing for both wages and pricing led to a recalculation in 1977 and substantially lower payments for those born between 1917 and 1921. While the revised formula better reflected economic conditions, several million Americans believed they were unfairly being given fewer benefits (Social Security Administration 2002). Those receiving lower benefits became known as the “notch” generation as the drop in their benefit levels created a visible notch in graphs depicting average benefit levels by cohort. Among individuals retiring at age 65, the Social

³Defined as a good that experiences an increase in demand as the real income of an individual or economy increases (Hall and Lieberman 2010).

Security benefits of those born in 1917 were an average of \$110 (in 1994 dollars) lower than that of those born in 1916 (Social Security Administration 2002).

The present study considers whether the different benefit levels created by the 1977 legislation prompted different rates of return migration during later life. This relationship can conceivably run in either direction. Higher Social Security payments may prompt return migration if U.S. residence is considered an inferior good.⁴ Work by Casado-Díaz, Kaiser, and Warnes (2004: 362) suggests that this may be the case, noting that among Northern Europeans retiring in Southern Europe, “International migration for retirement is no longer the preserve of the rich or professional and artistic elites, but it remains selective of the more affluent and is strongly patterned by the socio-economic background of migrants...”

Such may also be the case for Latin Americans. Migrants from Latin America often maintain strong social and economic ties to their home countries (Massey 1987; Roberts, Frank, and Lozano-Ascencio 1999) that may compel them to return upon retirement. As Massey (1987: 1394) writes

[T]he act of settling abroad rarely implies a break with social life in the home community . . . Even after many years in the United States, migrants may sell their foreign assets and return to live either in the community where they were born or in a Mexican urban area.

While migrants of all socioeconomic strata may hold such attachments, wealthier migrants may be more likely to have the means to reinstall themselves in their home country in later life.

However, there is also reason to believe that Latin American migrants perceive U.S. retirement to be a normal good. Immigrants with higher incomes may view their greater wealth as facilitating U.S. residence, even if the cost of living is higher than that in their home country. Roberts, Frank, and Lozano-Ascencio (1999: 247) write, “For Mexicans in the U.S., their community of origin may offer . . . a social support safety net for the elderly and for their own retirement.” Such was probably the case among one group of older Mexicans whose probability of return decreased with higher wages (Massey 1987). These migrants may have preferred U.S. retirement but found their socioeconomic situation more sustainable in Mexico.

Regardless of the direction of this relationship, Social Security benefit levels and, by extension, income levels of return migrants have a tangible effect on the U.S. economy. Most U.S. immigrants arrive at working ages (Batalova and Terrazas 2007) and join the pool of workers who support the retired population. As of 2000, the Social Security Administration reported \$374 billion in wages associated with illegitimate Social Security numbers that cannot be paid out in benefits (Office of the Inspector General 2002) thought to belong primarily to undocumented immigrants (Office of the Inspector General 2009). Nevertheless, demographer Ronald Lee asserts that immigration cannot solve funding

⁴Defined as a type of good for which demand decreases as the level of income or real GDP in the economy increases (Hall and Lieberman 2010).

problems because these migrants will themselves age and draw upon the Social Security system during later life (Population Reference Bureau 2008). However, this issue takes on considerable nuance if some immigrants do not age in the United States but rather, return to their home countries during later life.

If immigrants do eventually return migrate, their absence may generate savings in U.S. old-age support programs. Though they are eligible to receive Social Security payments while living abroad, immigrants who return migrate cannot, as noted earlier, receive Medicare or Supplemental Security Income benefits abroad.⁵

The amount of savings in these programs resulting from return migration will differ by the characteristics of those who return migrate and those who remain in the United States. Higher income levels are associated with better health (Macinko et al. 2003) and lower consumption of public services (Smith and Edmonston 1997), both of which translate into increased savings. From a strictly financial perspective, the U.S. economy would benefit most if migrants remaining were wealthier and healthier than return migrants.

The ramifications of return migration extend beyond the United States. Higher levels of income at older ages may spur economic growth in the receiving country. As Deller (1995) found in simulating the economic impact of retirement migration on a small rural state, every 100 new retirees entering a community create 55 jobs to meet increased demand for health care, retail, eating and drinking establishments, and air transportation.

Analysis of elderly return migration may also provide insights on immigrant assimilation in the United States. The successful immigrant narrative often involves arriving to the United States at a relatively disadvantaged position followed by a period of adaptation and eventual assimilation (Gordon 1964). Duration in the United States is correlated with greater English-language proficiency (Stevens 1992), higher employment levels (Chiswick, Cohen, and Zach 1997), lower poverty rates (Myers 2007), and a reduction in the income gap between immigrants and natives (Raphael and Smolensky 2008). While evidence suggests that many immigrants generally fare well by the time they reach old age,⁶ we do not observe the conditions of those who return to their home countries, particularly at old age. Faced with budget constraints, these migrants may return to their country of origin where the U.S. dollar may have more purchasing power.

This study assesses if lower Social Security payments result in a higher probability of return migration. Using a natural experiment that created unexpectedly higher Social Security payments for certain birth cohorts, it determines if elderly immigrants born in Latin America who received these higher payments were less likely to return to their home countries than their lower-paid counterparts.

⁵There is undoubtedly some abuse in the system whereby immigrants do not report that they are living abroad in order to continue receiving benefits. However, officially, these immigrants are ineligible to receive Supplemental Security Income benefits abroad.

⁶According to data from the 2008-2012 ACS, the vast majority of foreign-born elderly have lived in the United States for more than 20 years (78%), are U.S. citizens (67%), and speak English very well or well (62%) (Ruggles et al. 2010b). These outcomes are mediated by region of origin and the same positive pattern does not hold in terms of health (Anderson, Bulatao, and Cohen 2004).

METHODS

Data

This analysis is based on two data bases from the Social Security Administration's master data files, namely the NUMIDENT and a 1% simple random sample from the Master Beneficiary Record (MBR). The NUMIDENT contains one record for every U.S. Social Security number and has information on each individual's sex and country of birth. The MBR contains one record for every person who has ever applied for Social Security benefits and contains information on current and last place of residence, payment history, year of birth, year of death, primary Social Security beneficiary status, and the amount of benefits. These data are not publicly available but the author was granted access to a merged file via a grant from the Retirement Research Consortium. Social Security Administration personnel merged the data files and removed personal identifiers in order to protect the confidentiality of Social Security recipients. The analysis was conducted at the Social Security Administration in Washington, D.C.

Return migration is measured as having a foreign address on file at the time of death or if the beneficiary is not dead, the address on file as of 2011. Turra and Elo (2008) use similar information to document mortality among immigrants who remain in the United States during later life and those who return migrate. They note the address variable is likely to be accurate given that the Social Security Administration sends out questionnaires to foreign addresses annually to update information on beneficiaries abroad and that failure to return these questionnaires can result in the suspension of benefits.

Nonetheless, there are numerous limitations to documenting return migration in this manner. First, it may underestimate return migration. Immigrants may return migrate but not change their addresses with the Social Security Administration. However, the possibility of this is minimized by the fact that payments depend on updating personal information while abroad.

Second, occasionally the address on file is that of the representative payee and not the actual beneficiary. A representative payee manages Social Security and Supplemental Security Income payments for beneficiaries who are incapable of managing their own finances. As I will later discuss, about 9% of pre-and post-notch beneficiaries have or had a representative payee who may not have lived in the same household. However, the fact that the potential magnitude of this bias is the same in both groups provides some assurance against differential bias across groups.

Third, return migrants may have their Social Security benefits directly deposited into their bank accounts in which case they would not need to change their Social Security mailing address in order to receive benefits. However, the individuals observed in this analysis became eligible for Social Security benefits in the early 1980s, a time when direct deposit was virtually non-existent.

Fourth, this analysis is unable to identify an individual's migration behavior prior to 2011 or their date of death, particularly whether an individual migrated to and from their home country. Nonetheless, this analysis does capture return migration behavior at the end of life

or as of 2011, providing more information than is currently available from other sources for this population.

An added contribution of this study is its use of direct methods to estimate the effects of the 1977 legislation on Social Security payments. Indirect methods estimate Social Security benefits from other information instead of directly observing benefit levels. For example, in examining mortality differences created by the “notch,” Snyder and Evans (2006) estimated OASDI benefits for each group using cohort-specific profiles from the Current Population Survey. The authors use the same computer program that Social Security field offices use to calculate benefits and find that the higher income group had a statistically higher mortality rate. Krueger and Pischke (1992) use a similar program to assess the effect of Social Security on the labor supply and find a positive relationship.

While these estimations likely achieve high accuracy, the Social Security payments of immigrants may be more difficult to estimate due to additional pertinent variables such as time in the U.S., foreign work history, and legal status, all of which are often difficult to record. Fortunately, using Social Security Administration data allows direct observation of how benefit levels changed as a result of the 1977 legislation.

However, despite the accuracy of these estimates, some migrants may not have been aware of the portability of their Social Security benefits. In other words, they may not have known that their Social Security benefits would have been available to them abroad and may not have return migrated for this reason. Despite this possibility, the magnitude of this bias would be equal among those who did and did not receive higher Social Security benefits. As I will later discuss in greater detail, both groups are similar due to the exogenous nature of the notch and therefore not likely to differ in their knowledge of the portability of Social Security benefits.

Empirical Strategy

Comparison of Treatment and Control Groups—The individuals on which I focus in this analysis are primary Social Security beneficiaries aged 62 years and older who were born in Latin America between 1915 and 1918 (N=753). As noted earlier, those born after 1916 received lower Social Security benefits than those born before 1917. I define individuals born between January 1, 1915 and December 31, 1916 as the pre-notch group who received the treatment of higher Social Security benefits, and those born between January 1, 1917 and December 31, 1918 as the post-notch group who serve as the control group. I do not include secondary Social Security beneficiaries, e.g. spouses, dependent children, as these individuals may have received benefits without having lived and worked in the United States.

As Krueger and Pischke (1992) note, it is reasonable to assume that only trivial differences exist in the average health, private wealth, occupations, and other characteristics of cohorts born so close to one another. Including only four one-year birth cohorts guards against misleading results due to inherent differences between the treatment and control groups rather than differences in Social Security benefits. Snyder and Evans (2006), however, are less confident in this assumption, at least when examining the effect of the notch on

mortality. The authors caution that a multi-year time span might produce spurious differences between the pre- and post-notch groups due to secular trends in mortality rather than OASDI benefits. As is, there exists a four-year age difference between certain individuals who received higher Social Security benefits and those who received lower Social Security benefits, creating concern that the latter is an invalid counterfactual for the former. Unfortunately, Social Security Administration data files lack many common control variables, such as education, number of children, and living arrangements, with which to test this assumption.

To address this issue without Social Security Administration data, I use data from IPUMS U.S.A. (Ruggles et al. 2010a) to test whether there are significant demographic differences between both groups. Because it is based on the decennial U.S. census, I use data from 1980, when the 1915-1916 cohorts were 65-66 years old and the 1917-1918 cohorts were 63-64 years old. There is a precedent of using one data source to examine the demographic characteristics of the notch generation and another to examine their outcomes. For example, Snyder and Evans (2006) examine preretirement demographic characteristics of the notch generation as represented in the 1970 PUMS but, in one specification, identify their deaths using the National Center for Health Statistics (NCHS) Mortality Detail data. I used a chi-square to assess whether the differences between both groups are statistically significant. Estimates are weighted using IPUMS-provided survey weights and adjusted for design effects. Admittedly, IPUMS does not contain several pertinent covariates of interest such as health outcomes. However, because treatment is entirely determined by an arbitrary cut-off score applied to individuals who are on average equivalent other than treatment, it is not necessary to consider *any* covariates other than treatment assignment (Berk and de Leeuw 1999), albeit doing so provides more efficient estimates of the treatment effect (Trochim 1984). The comparison of the two groups in IPUMS U.S.A. provides a flavor of their characteristics, but is not crucial to proving they are similar given the random assignment of the treatment.

Regression Discontinuity Approach—I use a regression discontinuity approach to assess whether lower Social Security payments result in a higher probability of return migration. Regression discontinuity exploits the natural variation in treatments that depend on whether units fall below a certain threshold. In general, the units in a treatment group differ from those of the control group on characteristics other than treatment status, thereby obscuring the true effect of the treatment. However, regression discontinuity is based on the premise that individuals whose indices fall just below an arbitrary threshold are comparable to those whose indices fall just above it. In this way, it minimizes the threat of selection bias.

In this analysis, treatment, D_i , consists of having received higher Social Security payments as a result of being born before January 1, 1917, c . Therefore, D_i equals one if individual i was born before c and zero if this person was born on or after this date. Because treatment is strictly conditional on date of birth, X_i , individuals born shortly before this cut-off date likely resemble those born shortly afterward. Specifically, I limit the sample to individuals whose birthdate, X_i , falls between $c-2$ years, January 1, 1915, and $c+2$ years, December 31, 1918. Using this natural source of exogeneity, I obtain a causal estimate of the effect of

greater Social Security benefits, τ , on the log-odds of return migration for those born around c .

In its simplest form, this regression discontinuity approach is represented by

$$\text{logit}(\text{return migrate}) = \alpha + \tau D_i + \lambda S_i + \rho M x_i + \varepsilon_i \quad (1)$$

for the sample with birthdates within two years before and after c . The variable $M x_i$ indicates whether the individual is from Mexico and S_i equals one if the individual is male. These were among the few variables available as covariates in this data source, both of which have been found to be associated with return migration in the literature (Durand et al. 1996; Massey 1987; Turra and Elo 2008; Van Hook and Zhang 2011).

The reader will note that τ mirrors the average treatment effect of a simple logistic regression. The only difference between the two estimates is that regression discontinuity calls for restricting the sample to small neighborhoods to the right and to the left of the threshold.

However, Angrist and Pischke (2008) note that in a regression discontinuity approach, it is necessary to distinguish the effect of the discontinuity, represented by D_i , from the continuous variable, X_i , even though the former is a deterministic function of the latter. This proposition leads to the following model:

$$\text{logit}(\text{return migrate}) = \alpha + \xi X_i + \tau D_i + \lambda S_i + \rho M x_i + \varepsilon_i \quad (2)$$

The authors go on to present a more general model which centers the index score - in this case, birthdate, X_i - at c , allowing for different trend functions on both sides of the threshold. This variation of regression discontinuity is illustrated in the following equation:

$$\text{logit}(\text{return migrate}) = \alpha + \tau D_i + \beta (X_i - c) + \gamma (X_i - c) \cdot D_i + \lambda S_i + \rho M x_i + \varepsilon_i \quad (3)$$

I present the results of the models represented in equations 2 and 3. In graphing the results, I use the resulting coefficients to generate predicted probabilities.

RESULTS

Pre-Post-Notch Comparison

Before examining differences in the probability of return migration among those with higher and lower Social Security benefits, it is important to first assess whether both groups are comparable. As noted, because Social Security Administration data files do not contain several pertinent control variables, I use 1980 census data on those receiving Social Security for this comparison.

Table 1 describes Latin American immigrants aged 63-64 and 65-66 living in the United States in 1980 who were receiving Social Security benefits. This table reveals that there are no statistically significant differences between these two groups on sex, educational attainment, marital status, living with children, region of birth, English fluency, citizenship,

years in the United States, and employment levels. Approximately 40% of the pre-and post-notch group is male, close to 60% completed no more than a primary education, most are married and living with their spouse, and relatively few live with their children. Close to half of both groups were born in Mexico and more than one in five do not speak English. Moreover, close to half of both groups are naturalized citizens and most have been in the U.S. for more than 20 years. Less than 20% of both groups were employed at the time of the survey.

This descriptive snapshot reveals that the 1915-1916 pre-notch and 1917-1918 post-notch birth cohorts I examine resemble each other in many ways and are suitable for regression discontinuity analysis.

Descriptive Statistics

Table 2 uses NUMIDENT and MBR data to present descriptive statistics of primary Social Security beneficiaries born in Latin America in 1915-1916 (the pre-notch group) and in 1917-1918 (the post-notch group).

These statistics also show both groups to be fairly similar. Approximately half of both groups are males. At first glance, this number may be surprising as the proportion of males is typically lower among older age groups (Howden and Meyer 2011), but this is explained by the fact that the deceased are not dropped from the sample as their address at the time of death is known. A substantial proportion of both groups were born in Mexico. Given that over half of immigrants from Latin America are from Mexico (Grieco and Trevelyan 2010), it is not surprising that such a high proportion of Latin American primary Social Security beneficiaries are from Mexico. Relatively few in the pre-and post-notch groups retired at age 65 or older. This concurs with Gruber and Wise's (1998) seminal conclusion that the age of public pension eligibility has a greater impact on the propensity to retire than the normal retirement age. Older Hispanics face additional incentives to retire early such as higher rates of involuntary job separation (Flippen and Tienda 2000), physically demanding occupations (Green 2005), and relatively high levels of fair or poor self-reported health (Hummer, Benjamins, and Rogers 2004). The only characteristic in which immigrants pre-and post-notch substantially differ is in the proportion who had died by 2010. Five percentage points more in the pre-notch group had died than those post-notch. This is not surprising given the pre-notch group is older.

While the deceased are not dropped from the sample, it is worth pondering the ramifications of this difference in mortality. Pablos-Méndez (1994) describes the "salmon bias" as the tendency for Latino immigrants to return to their home countries shortly before they die. As the pre-notch group is older than the post-notch group, the former group may have been more likely to return to their home countries in anticipation of their death than the latter group, thereby obfuscating the true effect of receiving higher Social Security payments. Yet the literature is still inconclusive as to existence of the salmon bias. While Palloni and Arias (2004) find evidence of the salmon bias among foreign-born Mexicans, Abraído-Lanza et al. (1999) conclude that the salmon bias does not explain the lower mortality of Latinos. Turra and Elo (2008) examine a sample similar to that of the present study, namely, primary Social Security beneficiaries, and find only a small salmon effect when accounting for migration to

and from the United States (Turra and Elo, 2008). Thus, unhealthy migrants in the pre-notch group who may have returned to their home country were nearly as likely to reenter the U.S. and therefore not likely to have altered the net rate of return migration.

Both the treatment and control groups were also equally likely to have a representative payee or to have had a representative payee at the time of death. This similarity is important as the presence of a representative payee may bias the results: if the beneficiary has a representative payee, the zip code on file may represent that of the payee and not the beneficiary. The fact that both groups are equally likely to have a representative payee provides some assurance that any differences in their return migration rates are not due to this issue.

Effect of the Notch

As noted, a regression discontinuity design assumes that crossing an arbitrary threshold significantly increases the probability of treatment. In this case, treatment consists of having received higher Social Security benefits as a result of being born before January 1st, 1917. Figure 1 displays the average Social Security benefit for each two-month interval between birth years 1913 and 1920 as well as a lowess smoother. Consistent with historical accounts (Social Security Administration 2002), benefits increase through the end of 1916 and decrease noticeably afterward.

However, Angrist and Pischke (2008) warn that such graphs may not adequately represent the effect of the threshold on the explanatory variable. The authors caution that a discontinuity in the explanatory variable upon crossing the threshold may be due to latent higher-order terms rather than the effect of crossing the threshold. To address this issue, they suggest comparing average outcomes of small neighborhoods to the right and to the left of the threshold, as the treatment effect should not depend on the correct specification of the model in this case.

The rectangular bars of figure 1 indicate the average Social Security benefit for the birth cohorts on which this analysis is focused, namely those born between 1915 and 1918. This figure demonstrates fairly similar benefits between the 1915 and 1916 birth cohorts and a significant decrease in the benefits for the 1917 and 1918 birth cohorts. Specifically, the average monthly benefit for the pre-notch group is 19% higher than that of the post-notch group in these years. Table 3 indicates that the differences in the mean benefits of the pre- and post-notch group are statistically significant even after controlling for sex and whether the beneficiary was born in Mexico. The coefficients for the birth years 1917 and 1918 are statistically different from that of 1915, while that of 1916 is not.

While statistically significant, it is nonetheless important to ponder the viability of this income differential in influencing return migration. The literature points to a strong negative relationship between duration in the United States and the propensity to return migrate (Massey 1987; Ruiz-Tagle and Wong 2009). Over time, migrants develop social and familial networks while abroad that may be more influential than income in determining return migration, particularly when this income differential is only 19%.

However, the important role of Social Security in the economic security of Latin American immigrants amplifies this 19% difference. Caldera (2010) reports that over a quarter of Hispanic elderly depend on Social Security for more than 90% of their total family income and over 40% rely on Social Security for more than half of their total family income. Their reliance on this income is compounded by the fact that it is a relatively small amount. In 2010, the average total Social Security benefit reported for the previous year by Latin American beneficiaries was \$9,663 (Ruggles et al. 2010b). A 19% drop in this relatively small amount would diminish the average total of annual benefits to only \$7,827. Thus, Hispanics' heavy reliance on Social Security suggests that a 19% drop in their benefits would likely have a tangible effect on their economic outcomes.

This 19% difference in income may also hold significantly more value in the home country. According to Stark, Hemelstein, and Yegorov (1997), in choosing their optimal length in the U.S., immigrants put a high premium on the relative value of their income in the home country. Specifically, the longer a migrant is abroad, the longer she forgoes the opportunity to spend her income in the home country where she can buy more goods and services. This is particularly true in cases where there is a high purchasing power differential between the destination and home countries and low wages in the home countries, as is the case in Latin America and the United States. Thus, the 19% higher income possessed by the pre-notch group may shorten their stay in the United States since they may have obtained the desired sum of money in a shorter time span.

Figure 2 displays the proportion of Latin American primary Social Security beneficiaries born in 1915-1916 and 1917-1918 who were living abroad. As of 2011 or at the time of their death, 10% of the pre-notch group and 11% of the post-notch group, was living abroad, the vast majority in their home countries.

Regression Discontinuity Results

Table 4 shows the results of the regression discontinuity analysis. This table presents estimates based on equation 2 which fits a constant effects model for birth cohorts born close to the notch. Model 1 includes individuals born between January 1, 1915 and December 31, 1918. Models 2 and 3 adjust the number of birth cohorts included in the analysis to assess the sensitivity of this model to the period of observation. Model 2 reduces the number of birth cohorts in the analysis by half to include only persons born between 1916 and 1917 (N=337) whereas model 3 includes eight birth cohorts, i.e., persons born between 1913 and 1920 (N=1,515). These adjustments do not alter the primary result which is that the income differential created by the notch does not affect the log-odds of return migration.

This table also demonstrates the demands that this regression discontinuity approach makes on the data with standard errors increasing notably as the number of persons in each analysis decreases.

Figures 3a, 3b, and 3c provide a graphical representation of this result. These figures display the predicted probability of return migration for each two-month interval in the respective period of observation based on models 1, 2, and 3 on table 4, as well as a lowess smoother.

Lower smoothers can provide a convenient way to examine the relationship between a continuous predictor and a dichotomous outcome variable in a regression discontinuity approach (Lesik 2006). This graph shows that the predicted probability of return migration hovers around 10% for individuals born pre-and post-notch even after controlling for sex and whether they were born in Mexico, irrespective of the period of observation. Although the lowess smoother on figures 3a and 3b suggest a substantial difference in the probability of return migration between both groups, the results on table 4 indicate that these differences are not statistically significant.

Table 5 and figures 4a, 4b, and 4c demonstrate that the general results do not change when allowing for trend functions on either side of the notch, i.e., equation 3. At first glance, this finding suggests that income does not play a strong role in the decision to return migrate for Latin American primary Social Security beneficiaries. Indeed, both ethnographic (Aguilera 2004; Suro 1998) and quantitative work (Ruiz-Tagle and Wong 2009) support the idea that the familial and social networks immigrants develop over time are key in determining return to the country of origin, perhaps more so than income.

However, this finding may also imply that income plays a more nuanced role in the decision to return migrate. For Latin American primary Social Security beneficiaries, the threshold income differential at which point they decide to return migrate may be much higher or much lower than 19%. For example, there is evidence to suggest that it is immigrants who do not receive *any* Social Security in the U.S. who return migrate. Aguila and Zissimopoulos (2008) estimate that less than 12% of Mexicans in Mexico aged 65 years and older with U.S. migration experience were receiving U.S. Social Security in 2001. This number compares to 70% of Mexicans aged 65 and older who were receiving Social Security in the U.S. that same year (Ruggles et al. 2010b).

The citizenship requirements of Social Security may also explain the non-influence of income in this result. Social Security recipients must be U.S. citizens or legal permanent residents (General Accounting Office 2003). Technically, formerly undocumented immigrants are eligible to collect Social Security benefits that they accrued while undocumented once they obtain U.S. legal status. However, Burtless and Singer (2011: 19-20) report that, at least among Mexican immigrants, “an overwhelming percentage of undocumented migrants who earn Social Security-covered wages will probably not become legal U.S. residents or gain eligibility for Social Security.” This suggests elderly Latin American immigrants may return migrate if they do not have the legal ability to remain in the United States upon reaching retirement age, a situation which the data used in the present study would not capture.

A result that is significant in all six of the regression discontinuity models is region of birth. In all six models, individuals born in Mexico were more likely to return migrate than those who were born in other countries.

A possible reason for this finding is the closer proximity of Mexican immigrants than other immigrants to their country of origin. In their analysis of the effect of the “salmon” bias on the Hispanic epidemiological paradox, Palloni and Arias (2004: 402) assume that Mexican

immigrants are more likely to return migrate since their country of origin is closer and therefore more “easily reachable.” However, the authors acknowledge the tenuousness of this assumption given the high volume of Salvadoran and Guatemalan return migration in the 1990s.

Roberts, Frank, and Lozano-Ascencio (1999) suggest the geographical closeness between Mexico and the United States facilitates return migration not so much by making it physically easier to cross borders but by strengthening the social and economic ties immigrants have to their home countries. In other words, Mexican immigrants may be more likely to retire in Mexico because they reinforced their social and economic networks during visits home. This is likely not the case for immigrants from countries whose physical distance hinders their ability to frequently visit.

Somewhat surprisingly, males were not more likely to return migrate than females. A previous study documents the greater tendency among males to return to the country of origin although this study pertains to immigrants of all ages rather than just elders (Ruiz-Tagle and Wong 2009).

DISCUSSION

While the United States continues to simultaneously age and diversify, Hispanic immigrants continue to move from being active participants in the U.S. labor force to limited-income retirees adjusting to changing circumstances. At the heart of this discussion is recognizing the evolving nature of their circumstances as they age. As Myers (2007: 104) writes, many assume that “immigrants are like Peter Pan - forever frozen in their status as newcomers, never aging, never advancing economically, and never assimilating...” Part of this misconception stems from treating aging and immigration as independent phenomena. In discussing the juncture between aging and immigration, the literature often treats these two forces as complementary. A common account is that immigrants arrive to the U.S. as ready-made workers and pay taxes to support the swelling American elderly population (Myers 2007; Wattenberg 1997). However, almost half a century after the Immigration Act of 1965 enabled many of them to enter the United States, these migrants have themselves aged and have joined the ranks of the U.S. elderly. For many, their status has developed from that of unattached laborers to established denizens who are just as rooted in the United States as their native counterparts.

In examining the interaction between Social Security and migration, this study attempts to further understand this phenomenon.

This study examines whether elderly Latin American immigrants in the United States who are primary Social Security beneficiaries are more likely to return to their country of origin if they receive lower Social Security payments. To minimize the possibility of selection bias in answering this question, a natural experiment is utilized whereby the Social Security Administration unexpectedly lowered the Social Security benefits for persons born after 1916, a group otherwise known as the “notch” generation, due to an error in the benefit-calculation formula. I compare the predicted probability of return migration for the

1915-1916 and the 1917-1918 birth cohorts to determine if Social Security differentials had an effect on the outcome.

At face value, the results of this analysis suggest that lower Social Security benefits do not influence the probability of return migration. This supports studies describing the primal role of social ties and time in the United States rather than income in determining return migration (Massey 1987; Ruiz-Tagle and Wong 2009). The results of this study may signal that while economics plays an important role in determining return migration for the general migrant population (Lindstrom 1996; Massey 1987; Stark, Hemelstein, and Yegorov 1997), such may not be the case among older immigrants. Perhaps more so than their younger counterparts, older Latin American migrants may be drawn to the country of origin out of transnational social ties rather than monetary reasons.

There were, as noted, several limitations to this analysis. It is limited to primary Social Security beneficiaries and does not provide information on return migration among undocumented immigrants. However, work by Passel and Cohn (2010) suggests that only approximately 5% of migrants in this age group are undocumented.⁷ Another limitation is that it does not provide information on the age of return migration or the prevalence of cyclical migration to and from the country of origin during later life. Rather, it only includes information on the country of residence as of 2011 or at the time of death. Further research should determine whether elderly immigrants partake in cyclical migration. Yet another limitation is that the regression discontinuity approach is a very local average treatment effect. In other words, the results only apply to migrants born close to January 1, 1917 and may not apply to birth cohorts born very far from this date.

Despite these limitations, this is the first study to use direct estimates of the effect of the Social Security on return migration among Latin American elderly in the United States.

Having noted these limitations, the combined magnitude of return migration among both the pre- and post-notch group is not inconsequential (approximately 10%) given the characteristics of this sample. These individuals are not undocumented immigrants who are ineligible for services but rather immigrants who have worked in the United States for at least ten years and forgo consuming public services to which they would otherwise be entitled had they not returned to their home countries. In one year, the Centers for Medicare and Medicaid Services pays nearly \$10k in medical and long-term care expenses per beneficiary in Fee-for-Service Medicare (The Henry J. Kaiser Family Foundation 2012). Assuming migrants have Medicare spending patterns similar to those for the average Medicare beneficiary, every return migrant saves the U.S. budget this much in expenditures per year. Over 10 years, this adds up to \$95,000 per beneficiary. This does not include savings in Supplemental Security Income and other programs that are not available abroad.

However, the amount of savings will hinge on the proportion of time the migrant spends in the home country. Unfortunately, the Social Security Administration data used in this work

⁷I arrive at this number by multiplying the percent of total elderly in the undocumented (figure 6) and documented (figure 7) population by their total populations.

does not include this information. Further research should investigate travel to and from the United States during later life.

This 10% return migration rate also represents a significant shift in resources from one country to another. In describing the importance of retirement migration from Northern to Southern Europe, Williams, King, and Warnes (1997: 132) state that retirement migration “is a highly selective migration process which redistributes individuals -and their concomitant incomes, expenditure, health and health care needs across international boundaries.”

One aspect of this redistribution involves the transport of Social Security payments from the United States to return migrants’ home countries. The siphoning of this income stream may create sizable economic multiplier effects abroad due to increased demand for retail, health care, and eating and dining establishments (Deller 1995; Serow and Haas 1992). Aside from consumption, a proportion of this income likely goes toward production, particularly if migrants are more educated and own land or businesses (Durand et al. 1996).

This income stream may also ameliorate budget constraints within households. Reil-Held (2006) finds a positive relationship between the amount elderly people receive in public transfers and the amount they give to younger generations. Evidence suggests that this is particularly true for elderly individuals with lower-income children (McGarry and Schoeni 1995). The lower the income of their middle-aged children, the more elderly parents in one study transferred to their children (Cox and Jimenez 1992). This is likely the case in numerous Latin American countries given the generally downward direction of private transfers from older to younger generations (Lee and Mason 2011).

Conversely, depending on their length of stay, these migrants may put greater pressure on their families and old-age support programs in Latin American countries. Between 2000 and 2050, the old-age dependency ratio in Latin America and the Caribbean will triple from 9 persons 65 years and older per every 100 working age individuals to 26 per 100 (United Nations 2001). Older return migrants may intensify the ramifications of this trend if they remain in their home countries long enough to draw upon public services. Further research should investigate whether these migrants coordinate their travel to and from the United States around their use of Medicare. An important related question is whether the gains from incoming Social Security revenue offset the costs of supporting additional elderly in the country. As is, Latin America faces considerable challenges in providing a safety net for its burgeoning elderly population (Wong and Palloni 2009). Future research should examine return migration flows by age and the associated costs and benefits for the receiving country.

Acknowledgements

The research reported herein was performed pursuant to a grant from the U.S. Social Security Administration (SSA) funded as part of the Retirement Research Consortium. The opinions and conclusions expressed are solely those of the author and do not represent the opinions or policy of SSA or any agency of the Federal Government. This material is also based upon work supported by the National Science Foundation under Grant No. (DGE 1106400) and the NIH Ruth L. Kirschstein-National Service Research Award (T32AG000244) made available through the RAND Corporation. I am grateful to Ronald Lee, Noli Brazil, Romesh Silva, Iván Mejía-Guevara, Vegard Skirbekk, Peter Brownell, Mark Bourgschulte and Michael Rendall for helpful comments on an earlier version of

this paper. Any remaining errors are my own. I thank Lynn Fisher, Paul Davies, and Thuy Ho at the SSA for their support in enabling me to access the data.

REFERENCES

- Administration on Aging. [July 19, 2012] A statistical profile of Hispanic older Americans aged 65+. 2010. from http://www.aoa.gov/Aging_Statistics/minority_aging/Facts-on-Hispanic-Elderly.aspx
- Aguila, E.; Zissimopoulos, J. Labor market and immigration behavior of middle-aged and elderly Mexicans. RAND Corporation; Santa Monica, CA: 2008. Working paper WR-726
- Aguilera MB. Deciding where to retire: Intended retirement location choices of formerly undocumented Mexican migrants. *Social Science Quarterly*. 2004; 85(2):340–360.
- Anderson, NB.; Bulatao, RA.; Cohen, B., editors. Critical perspectives on racial and ethnic differences in health in late life. National Academies Press; Washington, D.C.: 2004.
- Angrist, JD.; Pischke, JS. Mostly harmless econometrics: An empiricist's companion. Princeton University Press; Princeton, NJ: 2008.
- Abraido-Lanza AF, Dohrenwend BP, Ng-Mak DS, Turner JB. The Latino mortality paradox. A test of the 'salmon bias' and healthy migrant hypotheses. *American Journal of Public Health*. 1999; 89(10):1543–1548. [PubMed: 10511837]
- Batalova, J.; Terrazas, AM. The recently arrived foreign born in the United States. Migration Policy Institute; Washington, D.C.: 2007. from <http://www.migrationinformation.org/feature/display.cfm?ID=603> [February 19, 2011]
- Berk RA, de Leeuw J. An evaluation of California's inmate classification system using a generalized regression discontinuity design. *Journal of the American Statistical Association*. 1999; 94(448): 1045–1052.
- Burtless, G.; Singer, A. The earnings and Social Security contributions of documented and undocumented Mexican immigrants. Center for Retirement Research at Boston College; Chestnut Hill, MA: 2011. CRR-WP 2011-2
- Caldera, S. Social Security: A key retirement income source for minorities. AARP Public Policy Institute; Washington, D.C.: 2010. Fact Sheet No. 201
- Casado-Díaz MA, Kaiser C, Warnes AM. Northern European retired residents in nine southern European Areas: Characteristics, motivations and adjustment. *Ageing and Society*. 2004; 24:353–381.
- Cave, D. [March 3, 2012] Better lives for Mexicans cut allure of going North.. *The New York Times*. 2011. from, <http://www.nytimes.com/interactive/2011/07/06/world/americas/immigration.html>
- Chiswick B,R, Cohen Y, Zach T. The labor market status of immigrants: Effects of the unemployment rate at arrival and duration of residence. *Industrial and Labor Relations Review*. 1997; 50(2):289–303.
- Cox D, Jimenez E. Social Security and private transfers in developing countries: The case of Peru. *The World Bank Economic Review*. 1992; 6(1):155–169.
- Deller S,C. Economic impact of retirement migration. *Economic Development Quarterly*. 1995; 9(25): 25–38.
- Durand J, Kandel W, Parrado EA, Massey DS. International migration and development in Mexican communities. *Demography*. 1996; 33(2):249–264. [PubMed: 8827168]
- Flippen C, Tienda M. Pathways to retirement: Patterns of labor force participation and labor market exit among the pre-retirement population by race, Hispanic origin, and sex. *Journal of Gerontology: Social Sciences*. 2000; 55B(1):S14–S27.
- General Accounting Office. Proposed Totalization Agreement with Mexico presents unique challenges. Author; Washington, D.C.: 2003. from, <http://www.gao.gov/products/GAO-03-993> [February 12, 2012]
- Gordon, MM. Assimilation in American life. Oxford University Press; New York, NY: 1964.
- Green CA. Race, ethnicity, and Social Security retirement age in the U.S. *Feminist Economics*. 2005; 11(2):117–143.
- Grieco, EM. Race and Hispanic origin of the foreign-born population in the United States: 2007. U.S. Census Bureau; Washington, D.C.: 2010. ACS-11. American Community Survey Reports

- Grieco, EM.; Trevelyan, EN. Place of birth of the foreign-born population. U.S. Census Bureau; Washington, D.C.: 2010. p. 2009ACSB/09-15
- Gruber J, Wise D. Social Security and retirement: An international comparison. *The American Economic Review: Papers and Proceedings of the Hundred and Tenth Annual Meeting of the American Economic Association*. 1998; 88(2):158–163.
- Gustman, AL.; Steinmeier, TL. Social Security benefits of immigrants and U.S. born. National Bureau of Economic Research; Cambridge, MA: 1998. NBER Working Paper # 6478
- Hall, RE.; Lieberman, M. *Microeconomics: Principles and applications*. 5th ed.. South-Western; Mason, OH: 2010.
- The Henry J. Kaiser Family Foundation. [December 12, 2013] Medicare spending and financing fact sheet. 2012. from, <http://kff.org/medicare/fact-sheet/medicare-spending-and-financing-fact-sheet/>
- Hoefler, M.; Rytina, N.; Baker, BC. Estimates of the unauthorized Immigrant Population Residing in the United States: January 2010. U.S. Department of Homeland Security; Washington, D.C.: 2011.
- Howden, LM.; Meyer, JA. Age and sex composition: 2010. U.S. Census Bureau; Washington, D.C.: 2011.
- Hummer, RA.; Benjamins, MR.; Rogers, RG. Racial and ethnic disparities in health and mortality among the U.S. elderly population.. In: Anderson, NB.; Butalao, RA.; Cohen, B., editors. *Critical perspectives on racial and ethnic differences in health in late life*. National Academies Press; Washington, D.C.: 2004. p. 53-94.
- Jacob BA, Lefgren L. Remedial education and student achievement: A regression-discontinuity analysis. *The Review of Economics and Statistics*. 2004; 86(1):226–244.
- Krueger AB, Pischke JS. The effect of Social Security on labor supply: A cohort analysis of the notch generation. *Journal of Labor Economics*. 1992; 10(4):412–437.
- Lee, DS. Regression discontinuity designs in economics. National Bureau of Economic Research; Cambridge, MA: 2009. NBER Working Paper No. 14723
- Lee R, Miller T. Immigration, Social Security, and broader fiscal impacts. *The American Economic Review: Papers and Proceedings of the One Hundred and Twelfth Annual Meeting of the American Economic Association*. 2000; 90(2):350–354.
- Lee R, Mason A. Generational economics in a changing world. *Population and Development Review*. 2011; 37(Suppl. 1):115–142. [PubMed: 21804657]
- Lesik SA. Applying the regression-discontinuity design to infer causality with non-random assignment. *The Review of Higher Education*. 2006; 30(1):1–19.
- Lindstrom DP. Economic opportunity in Mexico and return migration from the United States. *Demography*. 1996; 33(3):357–374. [PubMed: 8875068]
- Macinko JA, Shi L, Starfield B, Wulu JT Jr. A critical review of the literature. *Medical Care Research and Review*. 2003; 60(4):407–452. [PubMed: 14677219]
- Massey DS. Understanding Mexican migration to the United States. *The American Journal of Sociology*. 1987; 92(6):1372–1403.
- McGarry K, Schoeni RF. Transfer behavior in the Health and Retirement Study: Measurement the redistribution of resources with the family. *The Journal of Human Resources: Special Issue on the Health and Retirement Study*. 1995; 30:S184–S226.
- Medicare Payment Advisory Commission. [November 12, 2013] A data book: Health care spending and the Medicare program. 2012. from, <http://www.medpac.gov/documents/Jun12DataBookEntireReport.pdf>
- Myers, D. *Immigrants and boomers*. Russell Sage Foundation; New York, NY: 2007.
- Office of the Inspector General. [June 16, 2010] Status of the Social Security Administration's Earnings Suspense File. 2002. from, <http://oig.ssa.gov/sites/default/files/audit/full/pdf/A-03-03-23038.pdf>
- Office of the Inspector General. [August 2, 2011] Office of audit fiscal year 2009 work plan. 2009. from, http://oig.ssa.gov/sites/default/files/audit/full/pdf/workplan2009_1.pdf
- Palloni A, Arias E. Paradox lost: Explaining the Hispanic adult mortality advantage. *Demography*. 2004; 41(3):385–415. [PubMed: 15461007]
- Pablos-Méndez A. Letter to the editor. *JAMA*. 1994; 271(16):1237–1238. [PubMed: 8031363]

- Passel, JS.; Cohn, D. U.S. Unauthorized immigration flows are down sharply since mid-decade. Pew Hispanic Center; Washington, D.C.: 2010.
- Population Reference Bureau. PRB Discuss Online: What are the financial implications of aging in the United States?. Author; Washington, D.C.: 2008. from <http://www.prb.org/Publications/Articles/2008/discussionnov12008.aspx> [December 12, 2013]
- Raphael S, Smolensky E. Immigration and poverty in the United States. *Focus*. 2008; 26(2):27–31.
- Reil-Held A. Crowding out or crowding in? Public and private transfers in Germany. *European Journal of Population*. 2006; 22:263–280.
- Roberts, Bryan R.; Frank, Reanne; Lozano-Ascencio, Fernando. Transnational migrant communities and Mexican migration to the U.S. *Ethnic and Racial Studies*. 1999; 22(2):238–266.
- Ruiz-Tagle, JC.; Wong, R. Determinants of return migration to Mexico among Mexicans in the United States.. Paper presented at the Annual Meeting of the Population Association of America; Dallas. 2009;
- Ruggles, S.; Alexander, JT.; Genadek, K.; Goeken, R.; Schroeder, MB.; Sobek, M. [January 6, 2012] Integrated Public Use Microdata Series, International: Version 5.0 [Machine-readable database]. 2010a. from, <https://ipums.org>
- Ruggles, S.; Alexander, JT.; Genadek, K.; Goeken, R.; Schroeder, MB.; Sobek, M. [December 19, 2012] Analyze data online. Integrated Public Use Microdata Series, International: Version 5.0 [Machine-readable database]. 2010b. from <https://usa.ipums.org/usa/sda/>
- Sana M, Massey DS. Social Security: An alternative motivation for Mexico-U.S. migration. *International Migration*. 2000; 38(5):3–24. [PubMed: 12349806]
- Serow WJ, Haas WH. Measuring the economic impact of retirement migration: The case of western north Carolina. *Journal of Applied Gerontology*. 1992; 11(2):200–215.
- Smith, JP.; Edmonston, B., editors. The new Americans: Economic, demographic, and fiscal effects of immigration. National Academies Press; Washington, D.C.: 1997.
- Snyder SE, Evans WN. The effect of income on mortality on mortality: Evidence from the Social Security notch. *The Review of Economics and Statistics*. 2006; 88(3):482–495.
- Social Security Administration. [January 22, 2013] Social Security history. 2002. from, <http://www.ssa.gov/history/notchbase.html>
- Stark O, Hemelstein C, Yegorov Y. Migrants' savings, purchasing power parity, and the optimal duration of migration. *International Tax and Public Finance*. 1997; 4:307–324.
- Stevens G. The social and demographic context of language use in the United States. *American Sociological Review*. 1992; 57(2):171–185.
- Sunil TS, Rojas V, Bradley DE. United States' international retirement migration: The reasons for retiring to the environs of Lake Chapala, Mexico. *Ageing and Society*. 2007; 27:489–410.
- Suro, R. Strangers among us: Latino lives in a changing America. Vintage Books; New York, NY: 1998.
- Trochim, WMK. Research design for program evaluation: The regression-discontinuity approach. Sage Publications; Newbury Park, CA: 1984.
- Truly D. International retirement migration and tourism along the Lake Chapala Riviera: Developing a matrix of retirement migration behavior. *Tourism Geographies*. 2002; 4(3):261–281.
- Turra CM, Elo IT. The impact of the salmon bias on the Hispanic mortality advantage: New evidence from Social Security data. *Population Research and Policy Review*. 2008; 27:515–530. [PubMed: 19122882]
- United Nations. World population ageing: 1950-2050. Author; New York, NY: 2001. from, <http://www.un.org/esa/population/publications/worldageing19502050/> [March 5, 2013]
- Van Hook J, Zhan W. Why stays? Who goes? Selective emigration among the foreign-born. *Population Research and Policy Review*. 2011; 30:1–24. [PubMed: 22679341]
- Wattenberg BJ. The easy solution to the Social Security crisis. *The New York Times Magazine*. 1997:30–31.
- Williams AM, King R, Warnes T. A place in the sun: International retirement migration from northern to southern Europe. *European Urban and Regional Studies*. 1997; 4(2):115–134. [PubMed: 12292969]

Wong, R.; Palloni, A. Aging in Mexico and Latin America.. In: Uhlenberg, P., editor. International handbook of population aging. Vol. 1. Springer; New York, NY: 2009. p. 231-252.

Author Manuscript

Author Manuscript

Author Manuscript

Author Manuscript

FIGURE 1.

Average monthly Social Security benefit for Latin American primary beneficiaries born before January 1, 1917 (pre-notch group) and on or after January 1, 1917 (post-notch group)

Source: Author's calculations using a 1% sample of the Social Security Administration's Master Beneficiary Record and the NUMIDENT.

FIGURE 2.

Proportion of Latin American primary beneficiaries who return migrated among those born between 1915-1916 (pre-notch group) and between 1917-1918 (post-notch group)

Source: Author's calculations using a 1% sample of the Social Security Administration's Master Beneficiary Record and the NUMIDENT.

(a) Model 1 (Birth Years=1915-1918)

(b) Model 2 (Birth Years=1916-1917)

(c) Model 3 (Birth Years=1913-1920)

FIGURE 3.

Average predicted probability of return migration for Latin American primary Social Security beneficiaries (i.e., equation 2)

Source: Author's calculations using a 1% sample of the Social Security Administration's Master Beneficiary Record and the NUMIDENT.

(a) Model 1 (Birth Years=1915-1918)

(b) Model 2 (Birth Years=1916-1917)

(c) Model 3 (Birth Years=1913-1920)

Figure 4.

Average predicted probability of return migration for Latin American primary Social Security beneficiaries (allowing for different trend functions on both sides of the notch, i.e., equation 3)

Source: Author's calculations using a 1% sample of the Social Security Administration's Master Beneficiary Record and the NUMIDENT.

TABLE 1

Weighted descriptive statistics of Latin American immigrants aged 65-66 (pre-notch) and aged 63-64 in 1980 (post-notch) who were receiving Social Security benefits as captured in the 1980 census

	Pre-notch	Post-notch	Pre-notch-Post-notch	Chi-square	P-value
Male (%)	40.93	40.27	0.66	0.09	0.77
Education (%)	–	–	–	0.73	0.60
None	9.81	9.60	0.21		
<Primary	17.51	17.08	0.43		
Primary	32.45	33.54	–1.09		
Junior High	11.21	9.60	1.61		
High School	23.04	25.31	–2.27		
>High School	5.99	4.86	1.13		
Marital status (%)	–	–	–	1.41	0.21
Married, spouse present	60.78	64.46	–3.68		
Married, spouse absent	2.57	2.00	0.57		
Separated	3.89	3.37	0.52		
Divorced	7.63	6.48	1.15		
Widowed	18.05	18.83	–0.78		
Single	7.08	4.86	2.22		
Living with 1+ children (%)	37.90	37.41	0.49	0.51	0.82
Region of birth	–	–	–	0.51	0.73
Mexico	46.85	48.63	–1.78		
Central America	5.91	5.24	0.67		
South America	8.17	9.23	–1.06		
Cuba	27.00	25.81	1.19		
West Indies	12.06	11.10	0.96		
English fluency (%)	–	–	–	0.37	0.69
None	22.18	22.69	–0.51		
Not well	25.21	26.56	–1.35		
Very well/well	52.61	50.75	1.86		
U.S. citizen (%)	53.00	52.87	0.13	0.00	0.95
Years in U.S. (%) ¹	–	–	–	1.09	0.35
0-5	3.11	2.62	0.49		
6-10	6.69	6.86	–0.17		
11-15	14.94	12.47	2.47		
16-20	14.71	14.21	0.50		
21+	58.91	61.22	–2.31		
Employed (%)	18.91	19.45	–0.54	0.09	0.76
N	1,285	802			

Source: Author's calculations using the 5% IPUMS U.S.A. sample of the 1980 census.

¹ Values do not add up to 100 due to missing values.

TABLE 2

Descriptive statistics of primary Social Security beneficiaries born in Latin America between 1915 and 1916 (pre-notch) and 1917 and 1918 (post-notch)

	Total	Pre-notch	Post-notch
Male (%)	50.07	49.21	50.69
Born in Mexico (%)	37.32	37.97	36.84
Retired at 65 or older (%)	17.00	17.09	16.93
Died by 2010 (%)	73.97	76.90	71.85
Representative payee (%)	8.90	8.86	8.92
<i>N</i>	753	316	437

Source: Author's calculations using a 1% sample of the Social Security Administration's Master Beneficiary Record and the NUMIDENT.

TABLE 3

OLS regression predicting the average monthly Social Security benefit (in 2011 dollars) received by elderly Latin American primary Social Security beneficiaries born between 1915 and 1918

	$\beta/(SE)$
Born 1915	
Born 1916	-22.3291 (47.7222)
Born 1917	-133.7786 ** (45.7057)
Born 1918	-208.9275 *** (42.7754)
Born in Mexico	-181.2555 *** (32.1003)
Male	272.2067 *** (31.0856)
Intercept	936.0207 *** (37.6749)
<i>N</i>	753

Source: Author's calculations using a 1% percent sample of the Social Security Administration's Master Beneficiary Record and the NUMIDENT.

* $p < 0.05$

**
 $p < 0.01$

 $p < 0.001$

TABLE 4

Regression discontinuity logit model predicting whether Latin American primary Social Security beneficiaries born in 1915-1918, 1916-1917, and 1913-1920 return migrated (i.e., equation 2)

	(1) β /(SE)	(2) β /(SE)	(3) β /(SE)
Birth cohorts included in analysis	1915-1918	1916-1917	1913-1920
Notch	0.5506 (0.5234)	0.7075 (0.7304)	-0.2151 (0.3598)
Birthday	0.0009 (0.0006)	0.0010 (0.0017)	-0.0002 (0.0002)
Male	0.3254 (0.2500)	0.3599 (0.3608)	0.1161 (0.1743)
Born in Mexico	1.0744 *** (0.2491)	1.1533 ** (0.3647)	1.0614 *** (0.1785)
Constant	10.4112 (9.3620)	12.9918 (26.2499)	-5.9356 (3.1676)
<i>N</i>	753	337	1,515

Source: Author's calculations using a 1% sample of the Social Security Administration's Master Beneficiary Record and the NUMIDENT.

* $p < 0.05$

**
 $p < 0.01$

 $p < 0.001$

TABLE 5

Regression discontinuity logit model predicting whether Latin American primary Social Security beneficiaries born in 1915-1918, 1916-1917, and 1913-1920 return migrated (allowing for different trend functions on both sides of the notch, i.e., equation 3)

	(1) β /(SE)	(2) β /(SE)	(3) β /(SE)
Birth cohorts included in analysis	1915-1918	1916-1917	1913-1920
Notch	0.5833 (0.5052)	0.7219 (0.7497)	-0.1536 (0.3536)
Birthday -January 1, 1917	-0.0004 (0.0008)	-0.0018 (0.0024)	0.0004 (0.0003)
Notch $\times$ (Birthday - January 1, 1917)	-0.0012 (0.0012)	0.0015 (0.0034)	-0.0005 (0.0004)
Male	0.3175 (0.2503)	0.3774 (0.3630)	0.1142 (0.1744)
Born in Mexico	1.0662 *** (0.2493)	1.1420 ** (0.3654)	1.0724 *** (0.1789)
Constant	-2.9529 *** (0.4041)	-3.3585 *** (0.6203)	-2.5393 *** (0.2629)
<i>N</i>	753	337	1,515

Source: Author's calculations using a 1% sample of the Social Security Administration's Master Beneficiary Record and the NUMIDENT.

* $p < 0.05$

**
 $p < 0.01$

 $p < 0.001$