DO IMMIGRANTS DELAY RETIREMENT AND SOCIAL SECURITY CLAIMING?

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ABSTRACT

As the share of older immigrants residing in the U.S. begins to rise, it is important to understand
how immigrants' retirement behavior and security compare to that of natives. This question has
implications for the impact of immigration on government finances and for the retirement
security of immigrants. We use data from the Health and Retirement Study (HRS) to examine
how immigrants' retirement and Social Security claiming patterns compare to those of natives.
We find that immigrants are significantly less likely than natives to retire or claim Social Security
in their early 60s. We do not find heterogeneous effects by ethnicity or age of arrival to the U.S.
We also find no evidence that immigrants exit the survey at higher rates than U.S. natives in their
late 50s through 60s, a finding that is consistent with immigrants retiring in the U.S. rather than
abroad.

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1. Introduction

Along with the aging of the general U.S. population, the share of older immigrants has been growing as well.[1] However, the retirement behavior of immigrants remains understudied. This behavior has implications for the impact of immigration on government finances, and for the retirement security of an important subgroup of the population. Longer working lives mitigate the pressure that aging populations place on both public budgets and private savings. However, retirement can improve health and well-being (e.g., Gorry, Gorry, and Slavov 2018), and differences across demographic groups in time spent in retirement can have important distributional implications (Ghilarducci and Webb 2018). The timing of Social Security claiming can also have important implications for retirement well-being. Social Security retired worker benefits can be claimed at any age between 62 and 70, with larger monthly benefits available for later claims. Recent research has shown that this adjustment for delay is actuarially advantageous for most primary earners and singles (e.g., Meyer and Reichenstein 2010, 2012; Sass, Sun, and Webb 2013; and Shoven and Slavov 2014a, 2014b), and that delayed claiming can substantially increase retirement living standards (Bronshtein et al. 2018). In this paper, we use data from the Health and Retirement Study (HRS) to examine how immigrants' retirement and Social Security claiming patterns compare to those of natives.

The existing literature on retirement has documented that in the population overall, retirement hazards increase sharply at the early Social Security eligibility age (62) and the Social Security full retirement age (which varies between 65 and 67 depending on birth year). (For example, see Behagel and Blau 2012.) The probability of retirement is also influenced by health (e.g., McGarry 2004), the availability of post-retirement health insurance (e.g., Gruber and Madrian 1995; Kapur and Rogowski 2011; Marton and Woodbury 2006, 2012; Robinson and Clark 2010; Blau and Gilleskie 2001; Madrian 1994; Strumpf 2010; Nyce et al. 2013), quality of work (e.g., Siegrist et al. 2007), macroeconomic conditions that affect retirement wealth and job opportunities (e.g., Gorodnichenko et al. 2013; Goda et al. 2012; Hurd and Reti 2001; Hurd,

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[1] Between 1960 and 2000, the share of immigrants aged 65 and older dropped from 33 percent to 11 percent mainly because the 1965 Immigration and Nationality Act led to in an influx of younger, working-age immigrants (Batalova 2012). However, the share of older immigrants has been increasing recently, with 14.4 percent of the immigrant population aged 65 years or older in 2016, due to the aging of these working-age immigrants as well as an increase in the number of older immigrants sponsored by their adult children (Batalova 2012; Wilmoth 2012; Borjas 2011).

Reti, and Rohwedder 2009; Kezdi and Sevak 2004; Coile and Levine 2010), and pension incentives (e.g., Coile and Gruber 2007).

There are reasons to believe that immigrants may display different retirement patterns than the native born. First, immigrants may be less prepared for retirement. Immigrants tend to have lower Social Security benefits compared to U.S. natives (Sevak and Schmidt 2014, Favreault and Nichols 2011) due to both lower average earnings and shorter covered earnings histories.[2] Further, unauthorized migrants residing in the U.S. are not entitled to Social Security benefits even if they make payroll tax contributions. Immigrants also tend to have lower retirement wealth and are less likely to take advantage of tax preferred retirement savings opportunities (Cobb-Clark and Hildebrand 2006; Heim et al. 2012; Osili and Paulson 2009 Fontes 2011). Further, immigrants may have less access to pre-Medicare health insurance that is independent of employment. These differences suggest that immigrants may work longer than natives.

Second, immigrants are likely to face smaller work disincentives from Social Security compared to natives. Social Security benefits are based on the average of the top 35 years of earnings, indexed for economy-wide wage growth. Zeros are averaged in for career lengths shorter than 35 years. Longer careers translate into higher average earnings and monthly benefits, but there are diminishing returns because the formula mapping earnings to benefits is progressive. Once 35 years in covered employment have been reached, additional years of work may have little to no impact on Social Security benefits (even if they are in the top 35 years they displace a positive rather than a zero earnings year). This pattern creates work disincentives for individuals with longer covered careers (Goda, Shoven, and Slavov 2009). Immigrants generally have shorter covered earnings histories than natives because a portion of their working lives was spent outside the U.S.; thus, they may face smaller work disincentives at older ages.

Third, differences in health status between immigrants and natives may affect work capacity. Johnson et al. (2016) report that 59 percent of Hispanic immigrants aged 65 and older reported fair and poor health compared to 25 percent for non-Hispanic white natives. McGarry (2004) shows that poor or worsening health reduces the probability of continued work. This would suggest that immigrants may retire earlier.

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[2] These differences are more likely among those who immigrated to the U.S. more recently (who have lower wages relative to natives, as documented by Favreault and Nichols 2011) or at older ages (who have lower incomes, Social Security benefits, and Medicare coverage, as documented by O'Neil and Tienda 2014).

Finally, immigrants and natives may also have differences in Social Security claiming patterns. Even though most primary earners and singles can increase their lifetime Social Security wealth by delaying claiming, most people claim well before 70 (e.g., Goda et al. 2018). A commonly observed pattern is claiming upon stopping work (e.g., Shoven, Slavov, and Wise 2018). If immigrants work longer than natives, then they may also claim Social Security later than natives. Claiming need not coincide with retirement if individuals have the private savings needed to delay claiming beyond retirement. However, most people do not appear to utilize such a delay strategy even when it is feasible (Goda et al. 2018; Shoven, Slavov, and Wise 2018), and the strategy may be less feasible for immigrants given the immigrant-native differences in retirement resources noted above. Mortality also affects claiming incentives. In the U.S. and other developed countries, researchers have documented an "immigrant paradox" where immigrants tend to outlive natives despite their lower levels of education, lower levels of wealth, higher levels of poverty, and poorer access to health care relative to U.S. natives (Blue and Fenelon 2011; Dupre et al. 2012; Mehta et al. 2016). Empirically, individuals with greater subjective or actual mortality tend to claim earlier (Goda, Ramnath, Shoven, and Slavov 2018; Hurd, Smith, and Zissimopoulos 2004; Glickman and Hermes 2015; Beauchamp and Wagner 2012; Waldron 2002).

Few studies have examined differences in retirement timing between immigrants and U.S. natives. Mudrazija et al. (2017) show that foreign-born Hispanics tend to retire later than U.S. born Hispanics or non-Hispanics. Borjas (2011) shows that becoming eligible for Social Security benefits – which requires 10 years of covered employment – increases the probability of retirement among older immigrants. Kaushal (2010) shows that older immigrants increased their labor supply in response to becoming ineligible for Supplemental Security Income under the 1996 welfare reform. Our study is most closely related to Mudrazija et al. (2017), who use a proportional hazard model to examine differences in retirement timing. We extend their work by using a more flexible specification of retirement hazards (interacting individual age dummies with immigrant status) to examine immigrant-native differences in the sharp increases in retirement rates at key eligibility ages, such as 62 and full retirement age. We also separately examine Social Security claiming and retirement timing, and we include both Hispanic and non-Hispanic immigrants in our analysis.

Finally, we attempt to shed more light on where immigrants retire by examining

differences in the survey exit rates between immigrants and natives. It is possible that some immigrants choose to retire in their native countries. De Coulon (2016) provides a theoretical framework to study this decision, but no empirical studies have been done mainly due to the lack of data on final destinations of immigrants. Kapteyn et al. (2006) document that foreign born HRS respondents are more likely than average to exit the survey, a finding they argue could be a result of immigrants returning to their native countries. Thus, we may be able to to gain some insight into whether immigrants retire abroad by examining how these attrition rates vary with age. A higher attrition rate for immigrants at ages that coincide with retirement (late 50s through 60s) may indicate a propensity to retire abroad. Trying to understand where immigrants retire has important implications for both the host and source countries. For example, immigrants returning to their countries of origin may reduce health care costs for the host country, but increase them for the county of origin (De Coulon 2016).

We find that immigrants are significantly less likely than natives to retire in their late 50s or early 60s, and to claim Social Security before full retirement age. We do not find significant heterogeneity among immigrants based on Hispanic ethnicity or age of arrival in the U.S. While immigrants have a higher survey attrition rate overall, this gap seems to narrow at older ages (late 50s through the 60s). Thus, we do not pick up any evidence of immigrants retiring abroad at higher rates than natives.

2. Data and Descriptive Statistics

We use data from the 1992 to 2014 waves of the Health and Retirement Study (HRS), a biennial national longitudinal survey of individuals over the age of 50 and their spouses or partners. The survey began in 1992 with individuals born between 1931 and 1941 (original HRS cohort). New cohorts were added in 1993 (AHEAD cohort), 1998 (Children of Depression and War Baby cohorts), 2004 (Early Baby Boomer cohort), and 2010 (Mid Baby Boomer cohort). For most variables in this analysis, we use the RAND HRS data file (Version P). The RAND HRS is a cleaned dataset with consistent variables across survey waves derived from a subset of the original HRS data files. We refer to an individual's baseline wave as the wave in which the individual's cohort entered the sample.

We drop individuals with missing values for race or Hispanic ethnicity, gender, and education. Because we are interested in studying transitions from work to retirement, we restrict

the sample to individuals who were working for pay during their baseline wave. We construct indicators for self-employment status, as well as the occupation and industry for the longest-held job, during the baseline wave. We drop individuals with missing baseline self-employment status, and we create separate categories for individuals with missing or "other" baseline occupation or industry. We construct a measure of household wealth in the baseline wave by summing the RAND HRS measure of non-housing financial wealth (which excludes retirement wealth), the household's total assets in individual retirement accounts (IRAs), and any balances in the respondent's or spouse's defined contribution accounts from their current jobs.[3]

The main independent variable of interest is whether an individual is foreign born. The HRS reports an individual's place of birth as either as a Census Division or "not in the U.S." (including foreign countries and U.S. territories). We exclude individuals whose birthplace is unknown. Individuals who were not born in the U.S. were asked about their year of entry into the U.S. Responses to this question are only available in the original HRS data files; therefore, we extract and merge this variable with the RAND HRS. Information on date of entry into the U.S. was taken from the wave in which the individual's cohort was added to the survey.[4] In addition to a binary foreign-born indicator, we also construct two alternative indicators that subdivide the foreign-born sample into Hispanic and non-Hispanic individuals, and into immigrants who entered the U.S. before age 40 and those who entered at age 40 or later.[5] Hispanic immigrants have limited financial resources and Social Security benefits, and lower levels of education, relative to other immigrants and U.S. natives, which may delay their retirement. However, Hispanic immigrants also tend to hold more physically demanding jobs and be in worse health relative to other immigrants and U.S. natives, which could accelerate their retirement (Johnson et al. 2016). Immigrants who arrived later have spent a shorter portion of their careers in the U.S. are more likely to still be accruing significant Social Security benefits at older ages and to have limited Social Security benefits, factors that tend to delay retirement.

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[3] Wealth is in nominal dollars at the time of the survey. Wave dummies in the regressions should absorb the effects of inflation.

[4] From 1993 onwards, individuals could report either a year of entry, an age of entry, or the number of years ago that entry occurred. The 1992 and 1993 surveys simply asked respondents when they arrived in the U.S. In 1998, 2004, and 2010, respondents were asked when they first arrived in the U.S., whether they ever left, and when they subsequently returned. For these waves, we record the date that the respondent first arrived in the U.S. The 2010 wave includes information about citizenship and naturalization. However, these questions only appear to be asked of respondents entering the survey in 2010.

[5] The latter indicator also includes a category for foreign born individuals with missing information on age/year of entry.

After constructing baseline wave characteristics, we perform subsequent analysis at the person-wave level, and we drop any person-wave observations with zero sampling weight; these are generally individuals who are not part of the target population, such as spouses under the age of 50 and institutionalized individuals. At the person-wave level, we construct an indicator for married/partnered status. Because immigrants are more likely to live in larger households with extended family, and because such living arrangements can affect retirement decisions, we also create an indicator for whether the household includes members other than the respondent and spouse.[6] The HRS additionally includes a measure of self-reported health in which individuals rate their health on a scale of 1 (excellent) to 5 (poor). We construct an indicator that takes on a value of 1 for excellent, very good, or good health and zero for fair or poor health. Because retirement timing may depend on macroeconomic conditions and wealth shocks (e.g., Goda et al. 2011), we also merge in the monthly composite S&P 500 index (obtained from http://www.econ.yale.edu/~shiller/data.htm) and the monthly regional unemployment rate (obtained from the Bureau of Labor Statistics), both matched to the month and year of the interview. Individuals who have a missing value for region are assigned the monthly national unemployment rate.

Defining retirement is problematic. Prior research has shown that retirement is often not a clean transition. Many individuals who are in the process of retirement gradually reduce hours, retire temporarily and then go back to work, continue to work after retiring from a career job, or switch to self-employment with significantly reduced earnings (e.g., Maestas 2010; Ramnath, Shoven, and Slavov 2017). We construct two separate indicators for retirement. First, we define retirement as a transition from working for pay to not working for pay. This definition may also include transitions from work to unemployment, disability, or being out of the labor force. Second, we define retirement as a transition from self-reporting that one is not retired to self-reporting that one is retired. It may include people who are working part time but still consider themselves retired. Each indicator takes on a value of 1 if the individual was not retired in the

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[6] In 2015, the foreign born were twice as likely to live in 5 or more person families than the U.S. born (see http://www.pewhispanic.org/ph_stat-portraits_foreign-born-2015_trends-42b/) and Asians, Hispanics, and immigrants were more likely than whites and U.S. natives to live in multigenerational family households (see http://www.pewresearch.org/fact-tank/2018/04/05/a-record-64-million-americans-live-in-multigenerational-households/ and http://www.pewsocialtrends.org/2011/10/03/chapter-3-demographics-of-multi-generational-households/)

previous wave and retired in the current wave and zero if the individual was not retired in both waves. It is missing in all other cases.

We also construct two indicators for claiming Social Security. We first construct an indicator for claiming that takes on the value of 1 if an individual was not receiving any Social Security retirement income in the previous wave and currently receives Social Security retirement income, and 0 if the individual was not receiving Social Security retirement income in either wave. It is missing in all other cases. One concern is that some individuals who are not observed to claim Social Security within the sample period may not be eligible for Social Security. Unfortunately, the public use HRS data do not allow us to identify individuals who are eligible. To address this concern, we construct a second claiming indicator that is identical to the first, except that it excludes all individuals who are either not observed to claim during the sample period or who leave the sample before age 70.[7] Since Social Security disability benefits convert to retirement benefits at an individual's full retirement age, we also exclude individuals who have ever applied for disability benefits from the Social Security claiming regressions. Unfortunately, the survey does not include information on the type of Social Security retirement benefit received (e.g., retired worker, spousal, or survivor). Unlike worker benefits, spousal and survivor benefits do not grow beyond full retirement age, although they may be claimed early (subject to a reduction).

To examine where immigrants choose to retire, we construct an indicator for attrition that takes on a value of 1 if an individual responded to the survey in the previous wave but did not respond in the current wave (and was also not indicated to have died).[8] The indicator takes on a value of 0 if the individual responded in both the previous wave and the current wave. It is missing in all other cases. In the absence of better data, such an indicator can provide some preliminary evidence regarding whether immigrants choose to retire abroad.

Table 1 summarizes our sample selection and indicates both the number of individuals and the number of person-year observations after each sample restriction. After dropping individuals who have missing baseline characteristics, we have 144,446 person-year observations

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[7] Social Security benefits do not grow with delay past age 70. Thus, claiming after 70 is almost never optimal. A possible exception is that some individuals (late life immigrants, for example) may not have not accumulated 10 years of covered work by age 70. If these individuals continue to work beyond 70, they could claim once they reach the required 10 years. We think such cases are rare as most people do not work beyond age 70.

[8] Specifically, we set the attrition indicator to 1 if the RAND HRS variable riwstat is equal to 1 in the previous wave and either 4 or 7 in the current wave. It is equal to 0 if riwstat is equal to 1 in both the previous and the current waves.

and 16,805 individuals. Our retirement and claiming hazard regressions are based on the 67,939 observations (15,215 individuals) with non-missing values for at least one of the retirement or claiming indicators, as well as non-missing values for all the independent variables (described in the following section). The attrition hazard regressions are based on the 96,087 observations (16,192 individuals) with a non-missing value for the dependent variable. Independent variables in the attrition regressions include only baseline characteristics and age, as other time-varying characteristics are not available for those who dropped out of the survey.

Table 2 provides summary statistics for the full sample (left panel), for the foreign-born subsample (middle panel), and for the Hispanic foreign-born subsample (right panel). The top panel provides means and standard deviations for the dependent variables used in the analysis. The next panel down provides means and standard deviations for the foreign-born indicators and is based on the sample used in the retirement and claiming hazard regressions. Approximately 10 percent of the sample is foreign born, and roughly half of these are Hispanic. The majority of the foreign born entered before age 40. The next panel down provides summary statistics for the other independent variables used in the regressions, also based on the sample used in the retirement and claiming hazard regressions. Comparing the full sample to the foreign born sample suggests that immigrants are roughly the same age as the full sample, slightly more likely to be married or partnered, and slightly less like to have some college or higher. Immigrants also have lower total wealth at baseline and are less likely to report good health relative to the full sample. Hispanic immigrants are younger, have lower wealth, are much less likely to have some college or more, and are less likely to report being in good health relative to the full sample or immigrants overall.

3. Methodology

Our main objective is to examine immigrant-native differences in retirement and claiming behavior by estimating the following equation:

$$(1)\ Y_{it} = \beta_0 + \beta_1 FB_i + \beta_2 FRA_{it} + \beta_3 FRA_{it} * FB_i + \beta_4 AGE_{it} + \beta_5 AGE_{it} * FB_i + \beta_6 X_i + \beta_7 Z_{it}$$
$$+ w_{it} + \varepsilon_{it}$$

where Y_{it} is one of the two retirement indicators or one of two claiming indicators described above; FB_i is a dummy variable indicating whether individual i is foreign born; FRA_{it} is an indicator of whether individual i has reached full retirement age in wave t; and AGE_{it} is a vector of dummies for individual i's age at the end of the wave t interview. Age is truncated between 55 and 70 as most retirement and claiming transitions occur during this frame. Full retirement age varies among individuals in our sample (based on year of birth), and prior research has shown that individuals tend to retire and claim at whatever age is designated the full retirement age (Behaghel and Blau 2012). To capture differences between foreign born and native individuals, we interact the age dummies and the FRA_{it} indicator with our foreign-born indicator. X_i is a vector of time-invariant controls for female gender, race, Hispanic ethnicity, education, household wealth at baseline, occupation and industry of the longest job held at baseline, and self-employment status at baseline. Z_{it} is a vector of time-varying controls including marital status; an indicator for the presence of other household members; and changes in health status, the log of the S & P 500 index, and the regional unemployment rate between the current and previous interview. Finally, we include wave fixed effects w_t to control for any time-invariant factors that affect all individuals in a wave.

To explore whether attrition from the sample is more likely to occur for the foreign born at key retirement ages, we estimate the following regression:

$$(2)\ left_{it} = \beta_0 + \beta_1 FB_i + \beta_2 FRA_{it} + \beta_3 FRA_{it} * FB_i + \beta_4 AGE_{it} + \beta_5 AGE_{it} * FB_i + \beta_6 X_i$$
$$+ w_{it} + \varepsilon_{it}$$

The dependent variable $left_{it}$ is our attrition indicator for whether individual i left the sample between wave $t-1$ and wave t. The independent variables are as defined above. For individuals who leave the sample, age and full retirement age status are imputed by adding two years to the age at the previous interview.

We utilize ordinary least squares to estimate (1) and (2), making our regressions linear probability models. The estimated coefficient on each age dummy represents the native born hazard rate relative to the omitted age category (which we set at 55 and younger). The coefficients on the interactions between the age dummies and foreign-born status indicate the extent to which the foreign-born hazard rates depart from the native hazard rates at each age. We explore heterogeneity by estimating equations (1) and (2) using the more detailed specifications of foreign born (based on Hispanic ethnicity and age at arrival).

4. Results

A. Main Results

Figure 1 and 2 present our main results for retirement and claiming, respectively. Figure 3 presents our main results for attrition. Retirement and claiming hazard regressions include the full set of control variables, and all regressions utilize HRS person-level analysis weights. Results without controls are similar and are available upon request. In the left panel of each figure, the vertical axis labels indicate the age dummies, the full retirement age dummy, and the constant term from equation (1) (in Figures 1 and 2) or equation (2) (in Figure 3). The dots indicate the point estimates of each coefficient, and the horizontal line running through each dot represents a 95 percent confidence interval calculated using robust standard errors. The omitted category of 55 (and younger) is represented by the constant term, and the remaining age coefficients indicate the probability of a native-born individual retiring at the indicated age relative to age 55. In the right panel of each figure, the constant term corresponds to the coefficient of the foreign-born dummy and represents immigrant-native differences in the probability of retiring (Figure 1), claiming (Figure 2), or leaving (Figure 3) at age 55 or younger. This coefficient is insignificant in almost all our retirement and claiming regressions. The remaining age coefficients correspond to the interaction terms between the age and the foreign-born indicators, and they indicate the increase in the foreign-born hazard relative to the native-born hazard.

Figure 1a is based on the first definition of retirement (transition from working for pay to not working for pay) and Figure 1b is based on the second definition of retirement (transition from not retired to retired). The left panel of Figure 1a indicates that native born individuals are 15 percentage points more likely to transition to retirement at age 62 relative to age 55. The right panel of Figure 1b indicates that the increase in the probability of retiring at 62, compared to the omitted category of 55, is 9.5 percentage points lower for the foreign born than natives. Both coefficients are significant at the 5 percent level as the confidence intervals do not cross the vertical axis. In Figure 1b, natives are 22 percentage points more likely to retire at age 62 than at age 55 (left panel), but the increase in the hazard of retirement at that age is 11 percentage points less for immigrants (right panel). Overall, these figures suggest that immigrants are less likely to

retire in their late 50s and early 60s than U.S. natives. Point estimates suggest that immigrants may be more likely to retire in their late 60s than natives (conditional on still working at those ages), but sample sizes at these older ages are small and most differences are statistically insignificant.

Figure 2 shows a similar pattern when it comes to claiming Social Security. In the two left panels, the constant terms, and coefficients on ages 56 through 61, suggest that the probability of claiming Social Security before age 62 is very close to zero. This result is not surprising since 62 is the earliest eligibility age for a retired worker benefit (although survivor benefits can be claimed as early as 60). The two right panels suggest that immigrant status does not affect these pre-62 probabilities. The left panel of Figure 2a shows that, based on our first indicator of claiming, the probability of claiming at age 62 for natives jumps to 16 percent. The right panel shows that this probability is 5.9 percentage points lower for immigrants. It also shows that immigrants are 24 percentage points more likely than natives to claim at age 69 and 12 percentage points more likely than natives to claim at age 70 (conditional on not having claimed yet), possibly because natives who have not claimed by their late 60s are ineligible for Social Security. We find similar results using our second indicator of claiming, which is conditional on claiming within the sample period and being observed through age 70. However, immigrant-native differences at older ages are not statistically significant when we condition on claiming within the sample period.

The left panel of Figure 3 shows that U.S. natives are less likely to leave the sample at ages 64 and older relative to age 55. The right panel shows that while immigrants are more likely than natives to leave the sample at age 55 and younger (the coefficient on the foreign-born dummy is negative and significant), that gap narrows at traditional retirement ages in the late 50s and 60s. These results provide no evidence to suggest that immigrants are retiring abroad. These results are far from definitive, as there are many other reasons why people might leave the survey. However, given how little is known about where immigrants retire, it is useful to learn that this attrition indicator alone provides no evidence that immigrants leave the U.S. to retire in their country of origin or another country.

B. Analysis of Heterogeneity

Examining differences in retirement and claiming patterns by ethnicity and age at arrival can shed further light on the behavior of immigrants versus natives. Figures 4 and 5 report retirement and claiming hazards with both the foreign-born and native-born sample split by Hispanic ethnicity. Figures 6 and 7 report similar results with the foreign-born sample split by whether they arrived in the U.S. before or after age 40. Figure 8a shows results for attrition broken down by Hispanic ethnicity, and Figure 8b does the same for age of arrival. In each figure, the top left panel shows the coefficients on the age dummies from equation (1) for the omitted base group (native born non-Hispanic in Figures 4, 5, and 8a; and all native born in Figures 6, 7, and 8b). The omitted age category is 55 and younger, represented by the constant term. The remaining panels show coefficients on the interactions between the age dummies and other categories. In Figures 4, 5, and 8a, the other categories include native-born Hispanic, foreign-born Hispanic, and foreign-born non-Hispanic. In Figures 6, 7, and 8b, the other categories include foreign-born who entered before age 40 and foreign born who entered after age 40. The constant terms in these remaining panels represent the coefficient on the relevant foreign-born sub-category and corresponds to the impact of that category at the omitted age category of 55 and younger.

Figure 4a presents results for our first retirement indicator. The left panel shows that the probability of retiring for non-Hispanic U.S. natives rises sharply in the early 60s (relative to 55 and younger). There are no statistically significant differences in retirement behavior when non-Hispanic U.S. natives are compared to Hispanic U.S. natives or Hispanic immigrants. However, non-Hispanic immigrants are less likely than natives to retire at 62 (versus 55) and possibly more likely to retire after full retirement age (conditional on not having retired by then). Figure 4b shows results for our second retirement indicator, and again we find no statistically significant differences in retirement between non-Hispanic U.S. natives and Hispanic U.S. natives. However, Hispanic and non-Hispanic immigrants are less likely than non-Hispanic U.S. natives to retire in their late 50s and early 60s. Figure 5 shows that there are almost no statistically significant differences (at the 5 percent level) in Social Security claiming between non-Hispanic natives and Hispanic natives. Compared to these groups, Hispanic and non-Hispanic immigrants are less likely to claim before full retirement age.

Figure 6 suggests that regardless of age of arrival, immigrants are less likely than natives to retire in their late 50s or early 60s (relative to the omitted age group of 55 and below). These

results are stronger for the second definition of retirement. Figure 7 shows that regardless of the age when immigrants arrived, they are less likely than U.S. natives to claim at Social Security early. Thus, it appears that nativity status is more important than either age of arrival or ethnicity in driving retirement and claiming decisions.

Finally, Figures 8a and 8b suggest that the attrition gap between immigrants and natives either stays the same or narrows at traditional retirement ages regardless of age of arrival or Hispanic ethnicity.

5. Conclusion

This paper provides descriptive evidence of immigrant-native differences in the timing of retirement and Social Security claiming. We show that immigrants are less likely than natives to retire or claim Social Security early. Our analysis does not allow us to determine what causes these differences. In fact, there are several plausible explanations. First, immigrants may be less prepared for retirement. Our regressions control for household wealth in the baseline wave, and controlling for wealth does not alter our key results. This finding suggests that retirement preparedness may not be driving the differences we find. However, our measure of wealth is not comprehensive, as it does not include defined benefit pensions or Social Security wealth, or access to pre-Medicare non-employment-based health insurance. Second, because of the Social Security benefit formula – which is based on the highest 35 years of earnings – immigrants are more likely than natives to receive a substantial boost to their Social Security benefits from additional years of work. Third, immigrants may differ from natives in terms of health status. The generally lower self-reported health of immigrants would suggest that immigrants retire earlier than natives, which is contrary to our findings. Moreover, controlling for self-reported health does not alter our findings. We have obviously not controlled for all unobservable aspects of health. As noted earlier, immigrants do tend to have lower mortality than natives even after controlling for observables, and lower mortality may indicate an aspect of health that is not captured by our self-reported health measure. If immigrants retire later than natives, it is not surprising that they also claim Social Security later, as claiming Social Security upon retirement is a common practice. Delaying claiming is also consistent with the lower mortality experienced by immigrants. Finally, we show that immigrants are not more likely than natives to exit the survey at traditional retirement ages in the late 50s and 60s. In the absence of better data, these

attrition rates are a good starting point to better understand where immigrants are choosing to retire.

These results have implications for the retirement security and general well-being of immigrants. While delaying both retirement and Social Security claiming can have a large impact on retirement standard of living, differences in the length of retirement may represent an inequity that policy makers care about. Retirement and claiming choices also have important implications for the finances of Social Security, and the public sector budget more generally. Finally, beginning to understand where immigrants might retire has important financial implications for both the host and source countries.

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Table 1: Sample Selection

Restriction	Individuals	Person-wave observations
Initial Processing		
Initial count from RAND HRS data file	37,495	
Drop individuals with unknown place of birth	37,457	
Drop individuals with missing race or ethnicity	37,346	
Drop individuals with missing gender	37,339	
Drop individuals with missing education	37,334	
Drop individuals not working at baseline	17,418	
Drop individuals with missing self-employment status at baseline	17,396	
Convert to person-wave	17,396	155,459
Drop observations with zero sampling weight	16,805	144,446
Retirement/Claiming Hazard Regressions:		
Initial count	16,805	144,446
Non-missing value for any dependent variable	15,218	68,040
Drop observations with missing marital or health status	15,215	67,939
Sample Breakdown		
Full Sample	15,215	67,939
Foreign Born	1,728	6,864
Foreign Born Hispanic	854	3,176
Attrition Regressions		
Initial count	16,805	144,446
Non-missing value for attrition indicator	16,192	96,087
Sample Breakdown		
Full Sample	16,192	96,087
Foreign Born	1,892	9,741
Foreign Born Hispanic	944	4,405

Source: Authors' calculations from the HRS.

Table 2: Summary Statistics

Variable	Full Sample			Foreign Born			Foreign Born Hispanic		
	Obs.	Mean	Std. Dev.	Obs.	Mean	Std. Dev.	Obs.	Mean	Std. Dev.
Dependent Variables									
P(Not Working | Working at t-1)	57,553	0.18	0.39	5,740	0.17	0.38	2,531	0.18	0.38
P(Self-Report Retired | Not Self-Report Retired at t-1)	57,398	0.18	0.38	6,261	0.14	0.35	2,990	0.12	0.33
P(Claimed | Not Claimed at t-1)	46,593	0.15	0.35	5,052	0.13	0.33	2,392	0.12	0.33
P(Claimed | Not Claimed at t-1 and Claim Eventually)	20,860	0.22	0.42	2,072	0.22	0.41	821	0.23	0.42
P(Left Survey but Alive | In Survey at t-1)	96,087	0.06	0.23	9,741	0.08	0.27	4,405	0.08	0.28
Foreign Born Indicators									
Native Born	67,939	0.90	0.30	-	-	-	-	-	-
Foreign Born	67,939	0.10	0.30	6,864	1.00	0.00	3,176	1.00	0.00
Native Born Non-Hispanic	67,939	0.86	0.35	-	-	-	-	-	-
Native Born Hispanic	67,939	0.04	0.19	-	-	-	-	-	-
Foreign Born Hispanic	67,939	0.05	0.21	6,864	0.46	0.50	3,176	1.00	0.00
Foreign Born Non-Hispanic	67,939	0.05	0.23	6,864	0.54	0.50	-	-	-
Foreign Born Entered before Age 40	67,939	0.08	0.27	6,864	0.76	0.43	3,176	0.77	0.42
Foreign Born Entered at Age 40+	67,939	0.02	0.13	6,864	0.18	0.38	3,176	0.20	0.40
Foreign Born Entry Age Unknown	67,939	0.01	0.08	6,864	0.06	0.24	3,176	0.03	0.17
Other Independent Variables									
Age	67,939	62.44	6.88	6,864	61.69	6.58	3,176	61.01	6.00
Reached Full Retirement Age	67,939	0.28	0.45	6,864	0.25	0.43	3,176	0.22	0.41
Female	67,939	0.51	0.50	6,864	0.48	0.50	3,176	0.47	0.50
Hispanic Ethnicity	67,939	0.08	0.28	6,864	0.46	0.50	3,176	1.00	0.00
Black Race	67,939	0.15	0.36	6,864	0.11	0.31	3,176	0.00	0.00
Other Race	67,939	0.05	0.22	6,864	0.27	0.44	3,176	0.32	0.47
Married or Living with Partner	67,939	0.73	0.45	6,864	0.75	0.44	3,176	0.73	0.44

Source: Authors' calculations from the HRS.

Notes: Summary statistics based on samples and variables used in regressions. See text for details. Data are unweighted.

Table 2: Summary Statistics, continued

Variable	Full Sample			Foreign Born			Foreign Born Hispanic		
	Obs.	Mean	Std. Dev.	Obs.	Mean	Std. Dev.	Obs.	Mean	Std. Dev.
HH Members Besides Respondent and Spouse	67,939	0.34	0.48	6,864	0.54	0.50	3,176	0.64	0.48
High School Diploma	67,939	0.34	0.47	6,864	0.22	0.41	3,176	0.21	0.41
Some College	67,939	0.24	0.43	6,864	0.18	0.38	3,176	0.14	0.35
College +	67,939	0.26	0.44	6,864	0.26	0.44	3,176	0.09	0.28
Household Wealth at Baseline / 1000	67,939	108.72	344.04	6,864	69.44	297.34	3,176	-1.72	259.60
Good Health	67,939	0.81	0.39	6,864	0.72	0.45	3,176	0.59	0.49
Change in Good Health (wave t-1 to t)	67,939	-0.02	0.37	6,864	-0.02	0.42	3,176	-0.02	0.48
Self Employed at Baseline	67,939	0.19	0.40	6,864	0.20	0.40	3,176	0.17	0.37
Change in Unemployment Rate	67,939	-0.20	1.64	6,864	-0.32	1.70	3,176	-0.38	1.75
Change in log(S&P 500)	67,939	0.14	0.24	6,864	0.15	0.24	3,176	0.15	0.23

Source: Authors' calculations from the HRS.

Notes: Summary statistics based on samples and variables used in regressions. See text for details. Data are unweighted.

Figure 1a: Hazard of Stopping Work
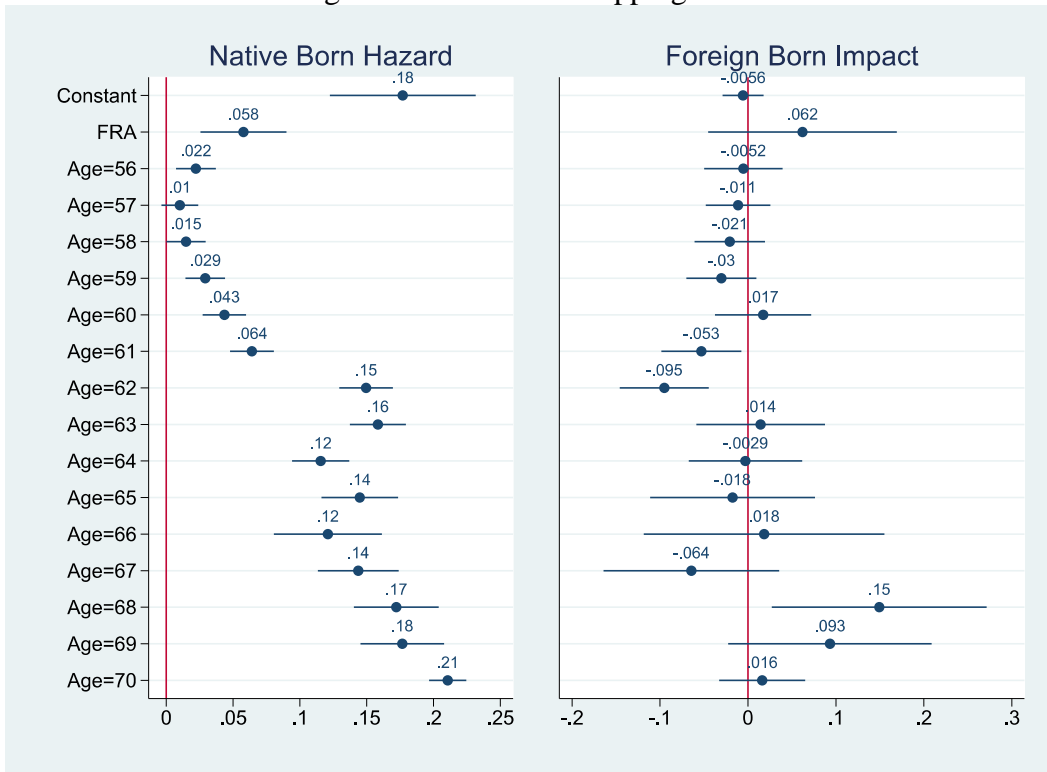
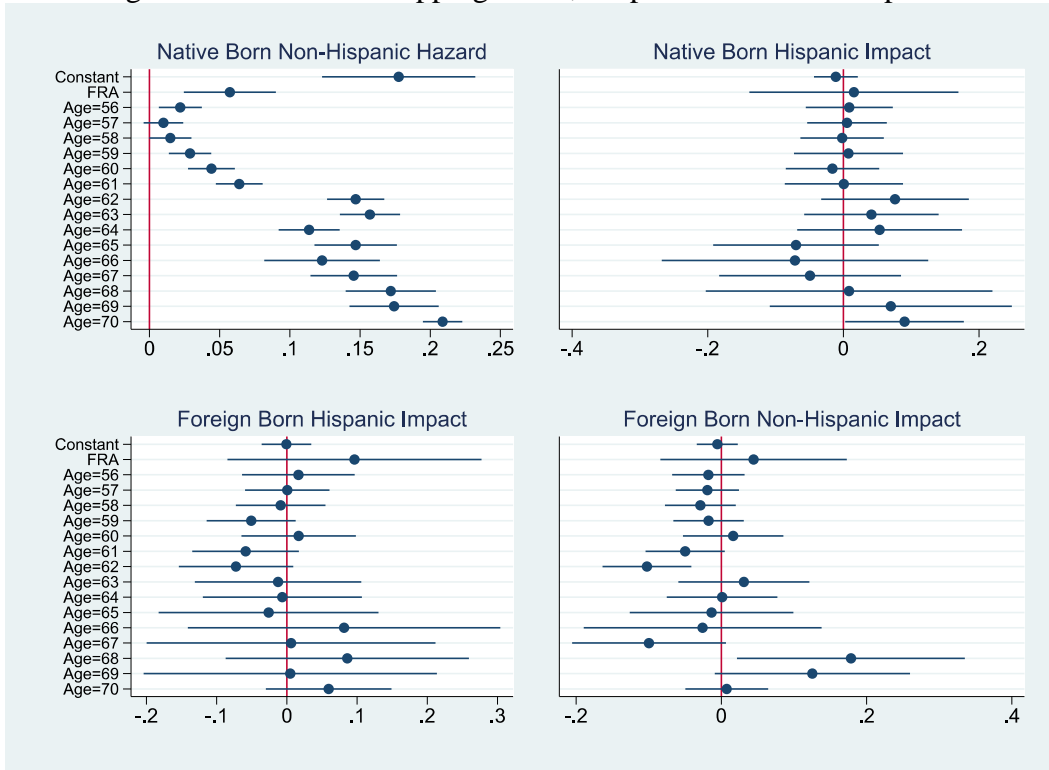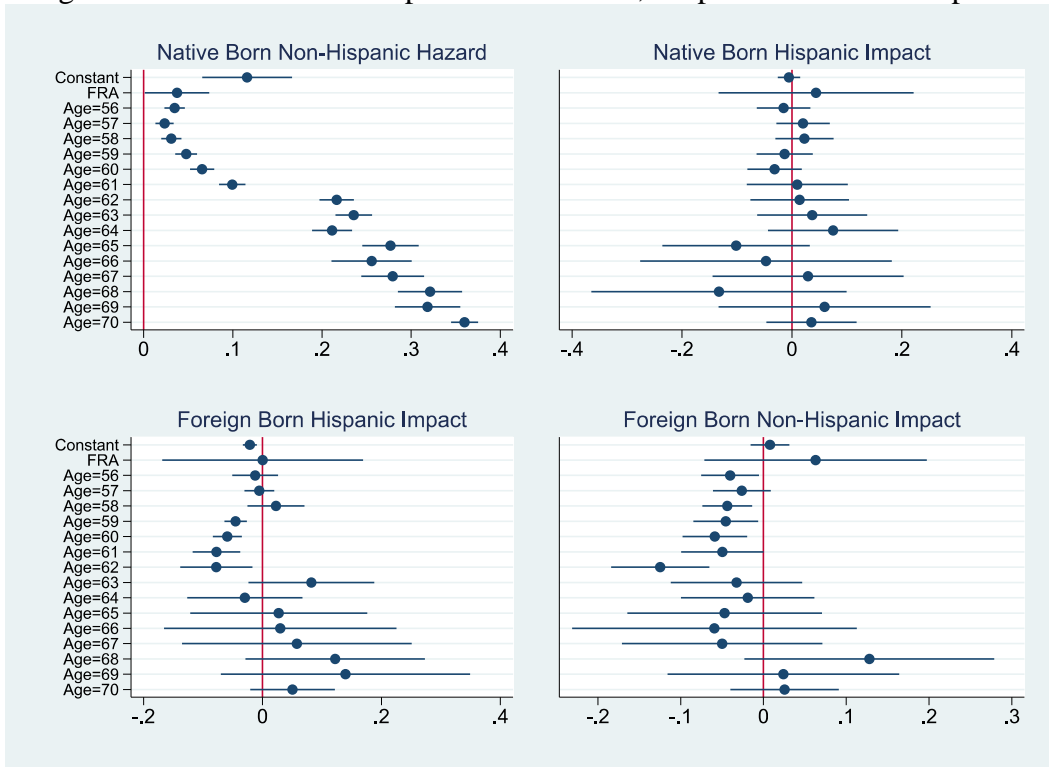## Figure 1b: Hazard of Self-Reported Retirement
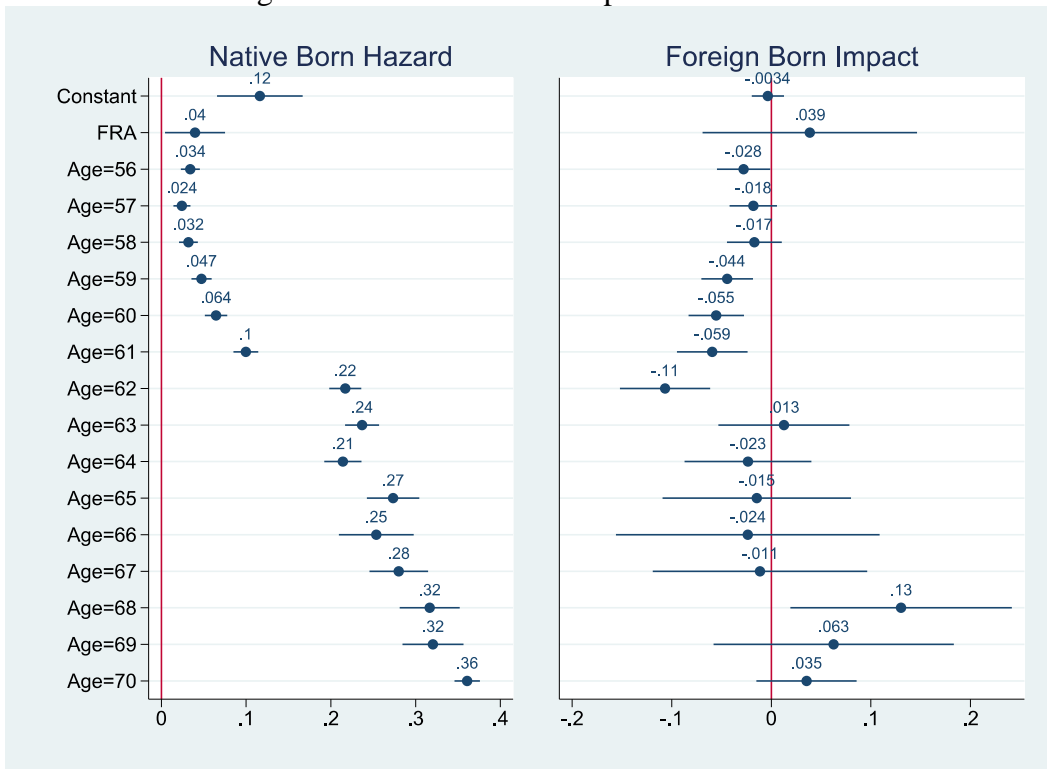
Source: Authors' calculations from HRS. Dots represent point estimates for equation (1) with controls, and horizontal lines represent 95 percent confidence intervals based on robust standard errors.

Figure 2a: Hazard of Claiming Social Security
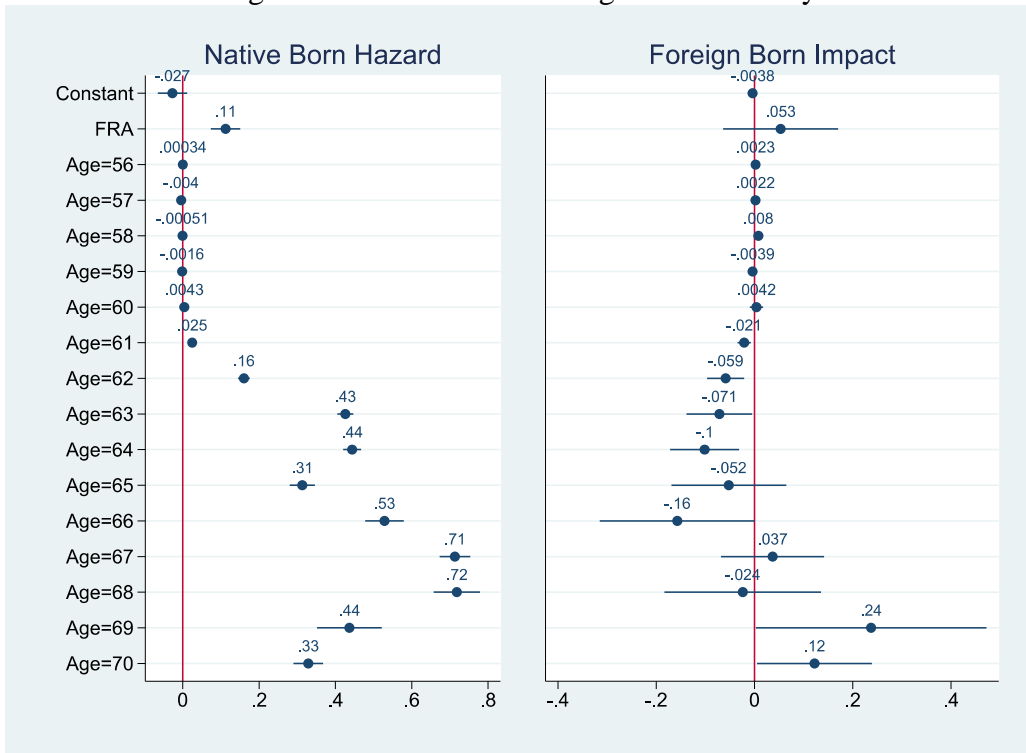
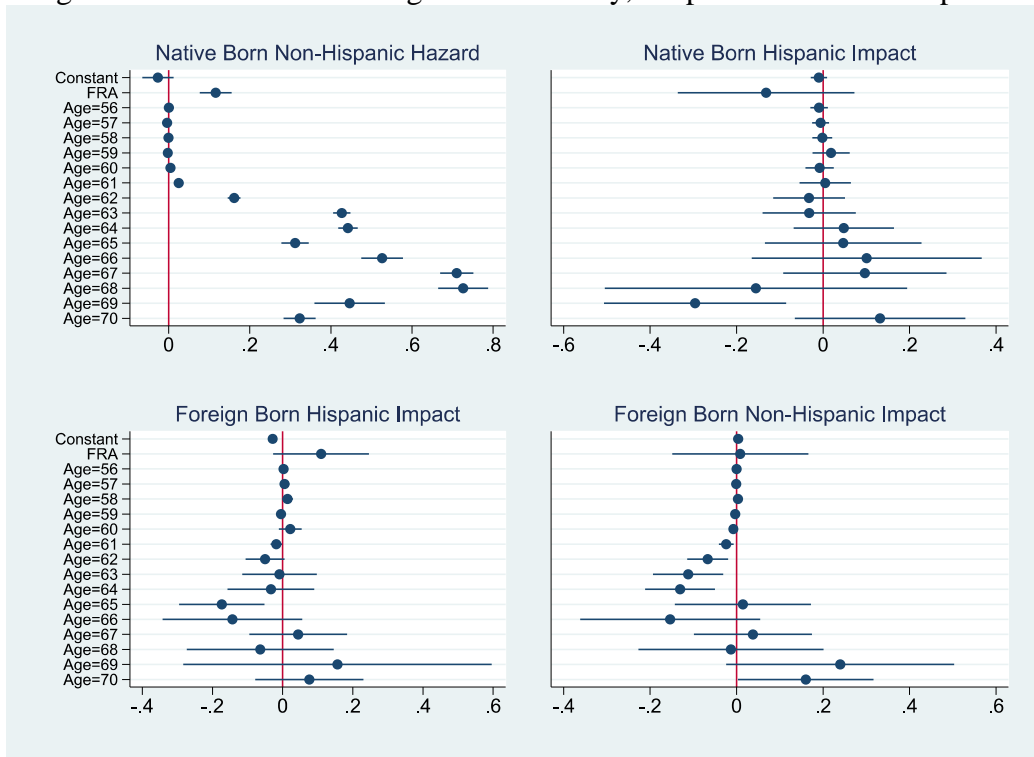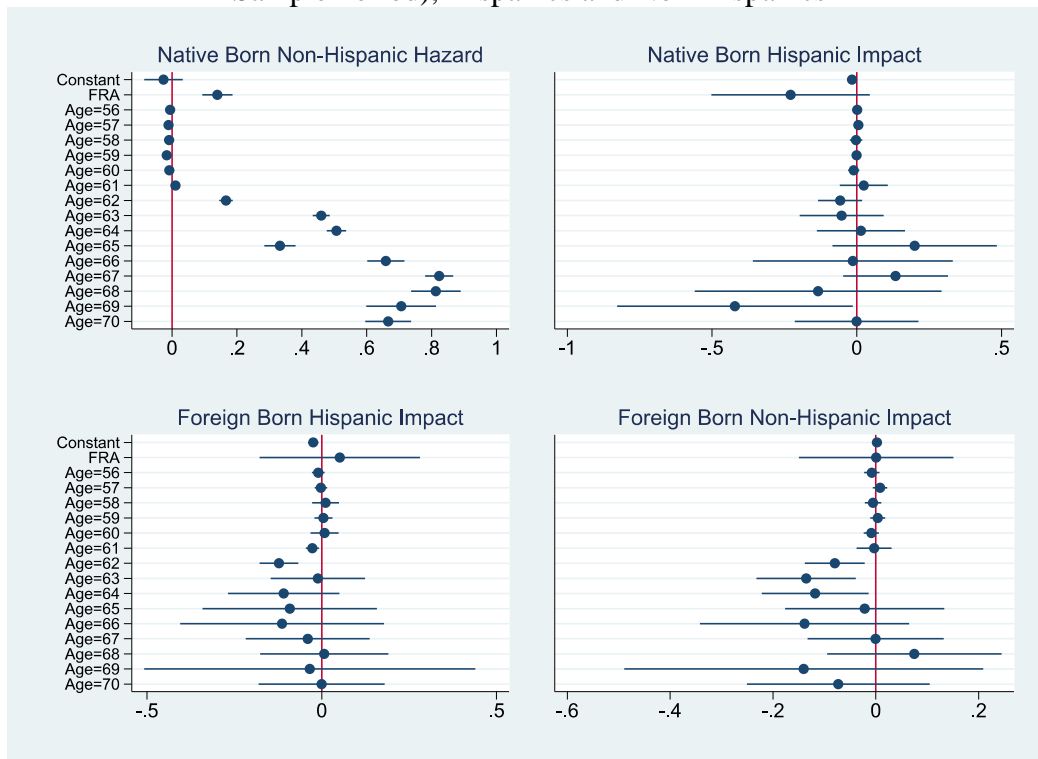Figure 2b: Hazard of Claiming Social Security (Conditional on Claiming within Sample Period)
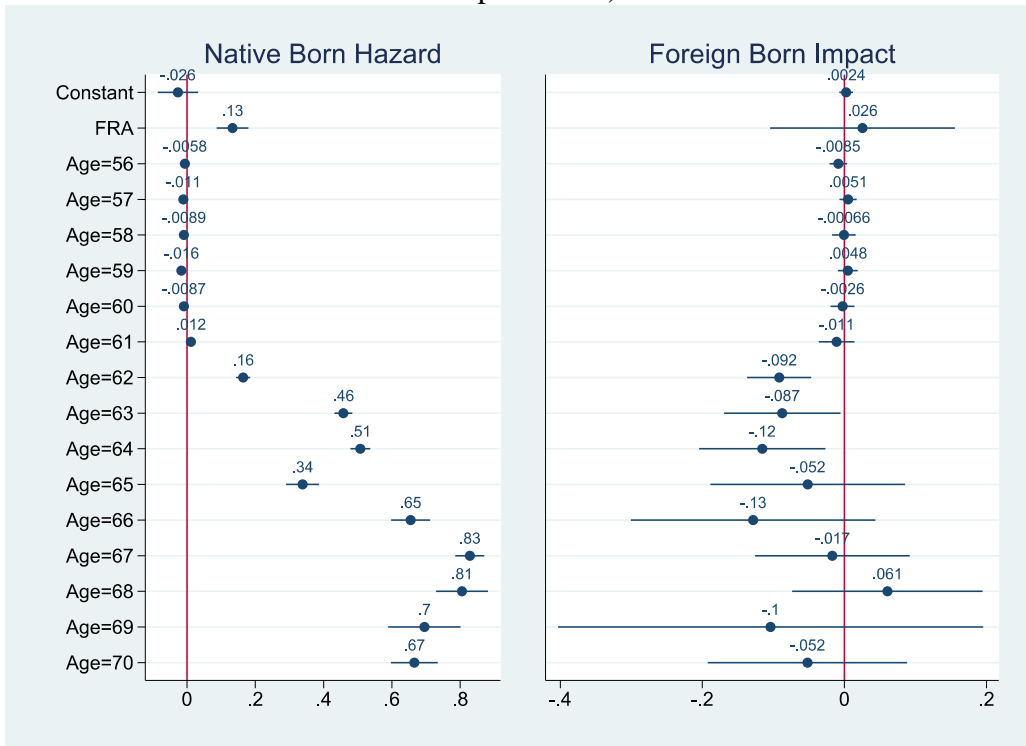
Source: Authors' calculations from HRS. Dots represent point estimates for equation (1) with controls, and horizontal lines represent 95 percent confidence intervals based on robust standard errors.

Figure 3. Hazard of Attrition
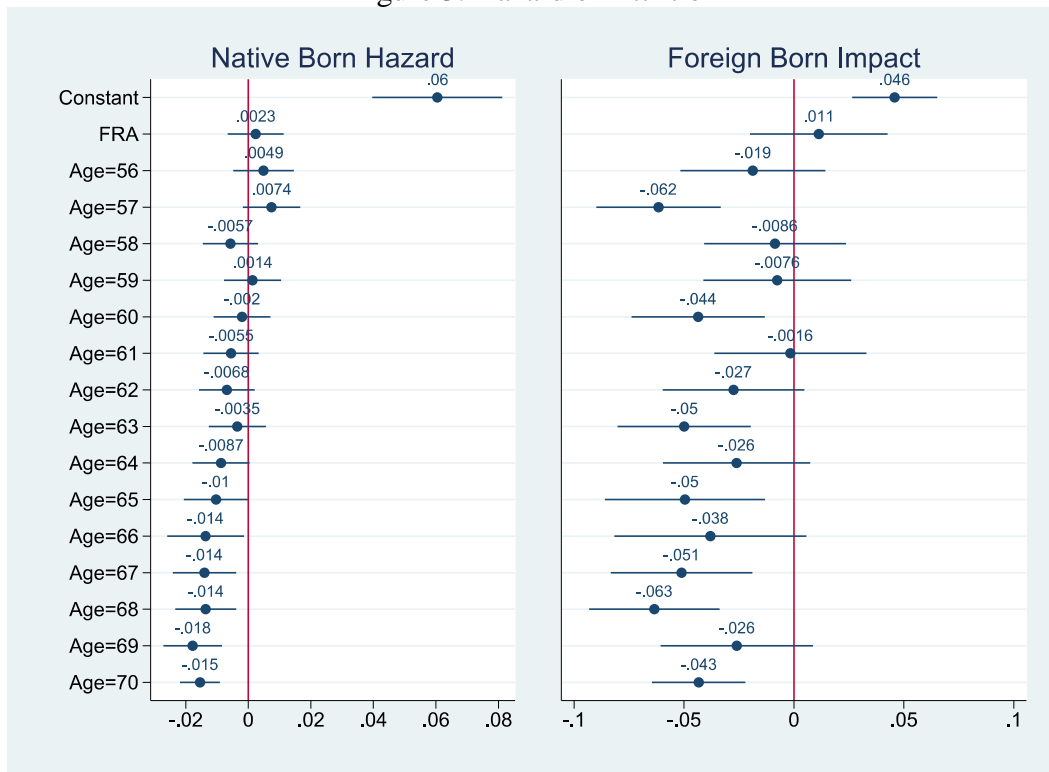
Source: Authors' calculations from HRS. Dots represent point estimates for equation (2) with controls, and horizontal lines represent 95 percent confidence intervals based on robust standard errors.

Figure 4a: Hazard of Stopping Work, Hispanics and Non-Hispanics
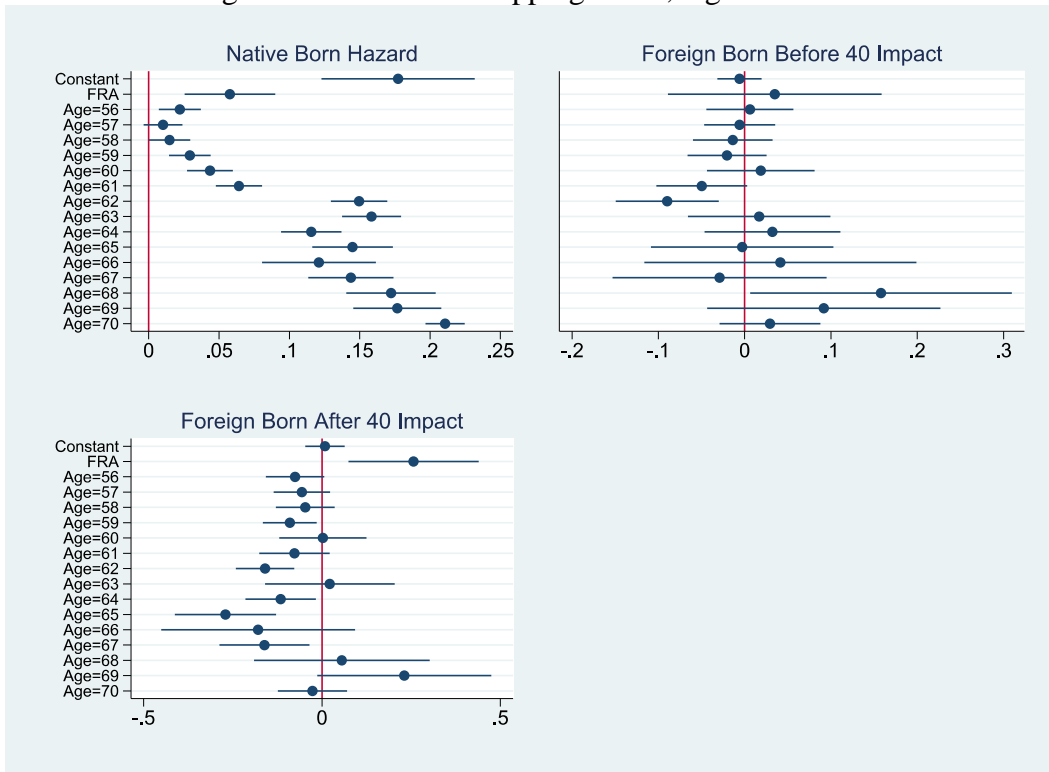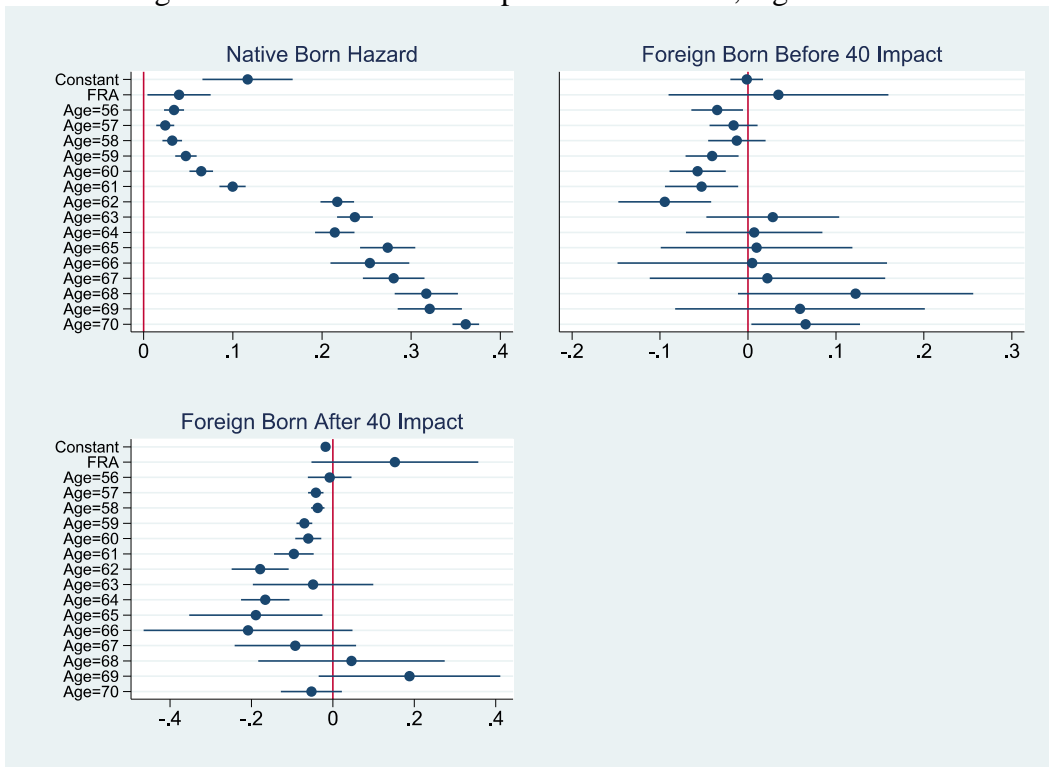

Figure 4b: Hazard of Self-Reported Retirement, Hispanics and Non-Hispanics

Source: Authors' calculations from HRS. Dots represent point estimates for equation (1) with controls, and horizontal lines represent 95 percent confidence intervals based on robust standard errors.

Figure 5a: Hazard of Claiming Social Security, Hispanics and Non-Hispanics

Figure 5b: Hazard of Claiming Social Security (Conditional on Claiming within Sample Period), Hispanics and Non-Hispanics

Source: Authors' calculations from HRS. Dots represent point estimates for equation (1) with controls, and horizontal lines represent 95 percent confidence intervals based on robust standard errors.

Figure 6a: Hazard of Stopping Work, Age of Arrival

Figure 6b: Hazard of Self-Reported Retirement, Age of Arrival

Source: Authors' calculations from HRS. Dots represent point estimates for equation (1) with controls, and horizontal lines represent 95 percent confidence intervals based on robust standard errors.

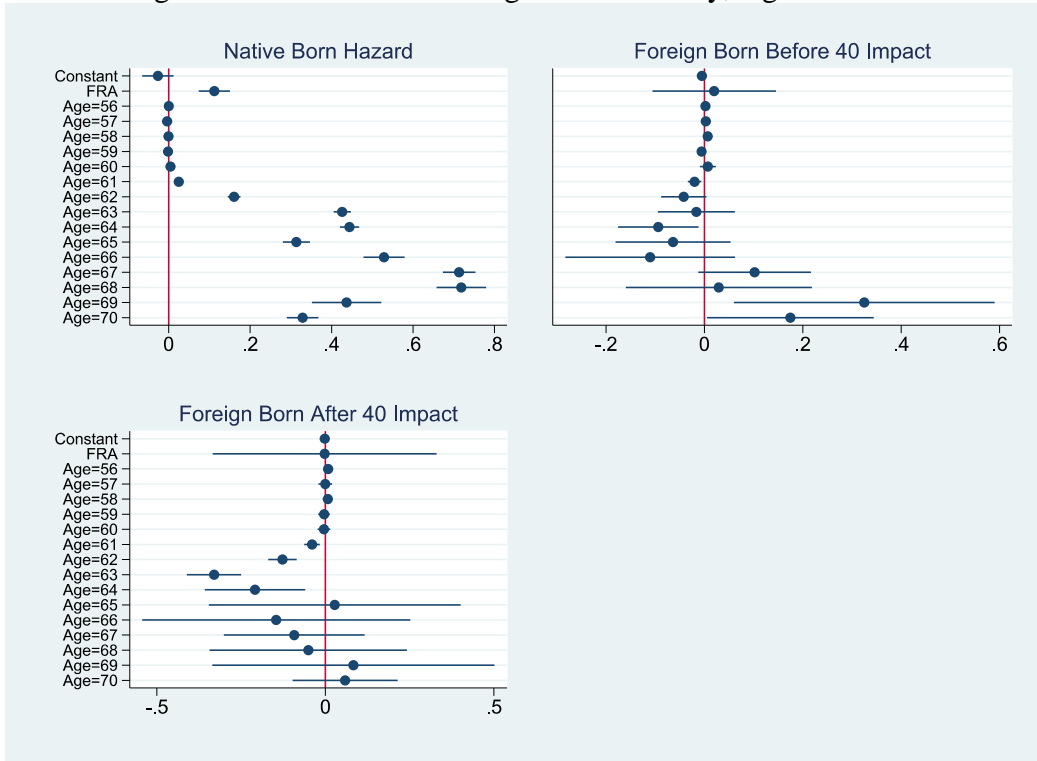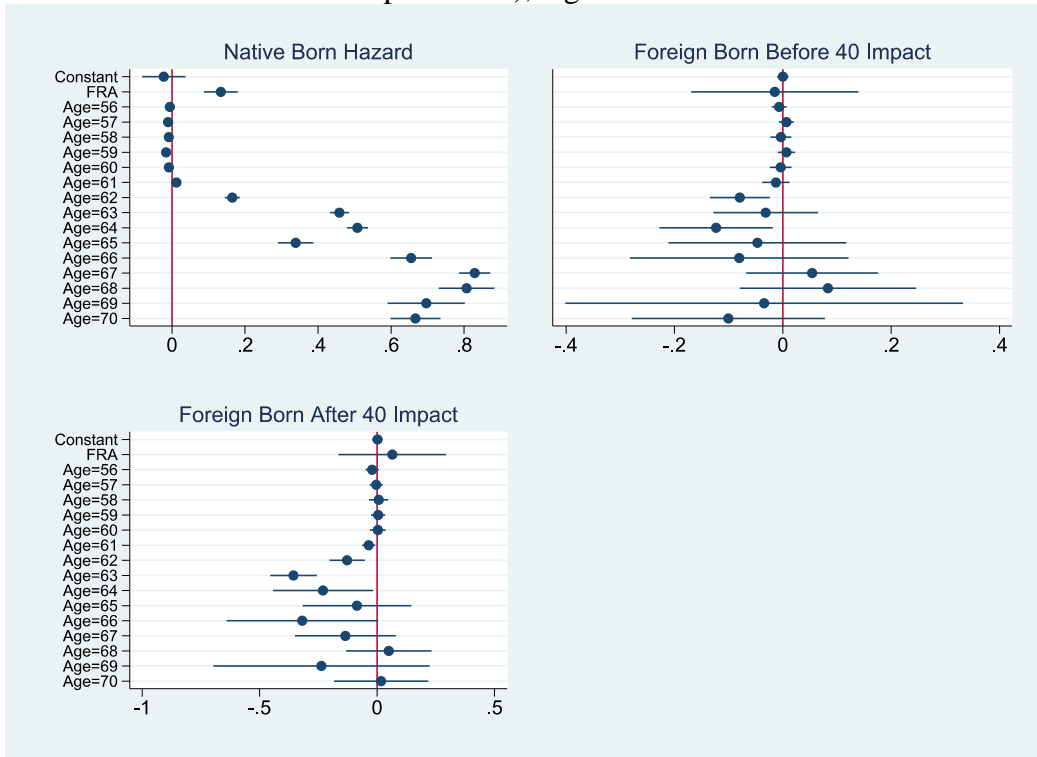Figure 7a: Hazard of Claiming Social Security, Age of Arrival

Figure 7b: Hazard of Claiming Social Security (Conditional on Claiming within Sample Period), Age of Arrival

Source: Authors' calculations from HRS. Dots represent point estimates for equation (1) with controls, and horizontal lines represent 95 percent confidence intervals based on robust standard errors.

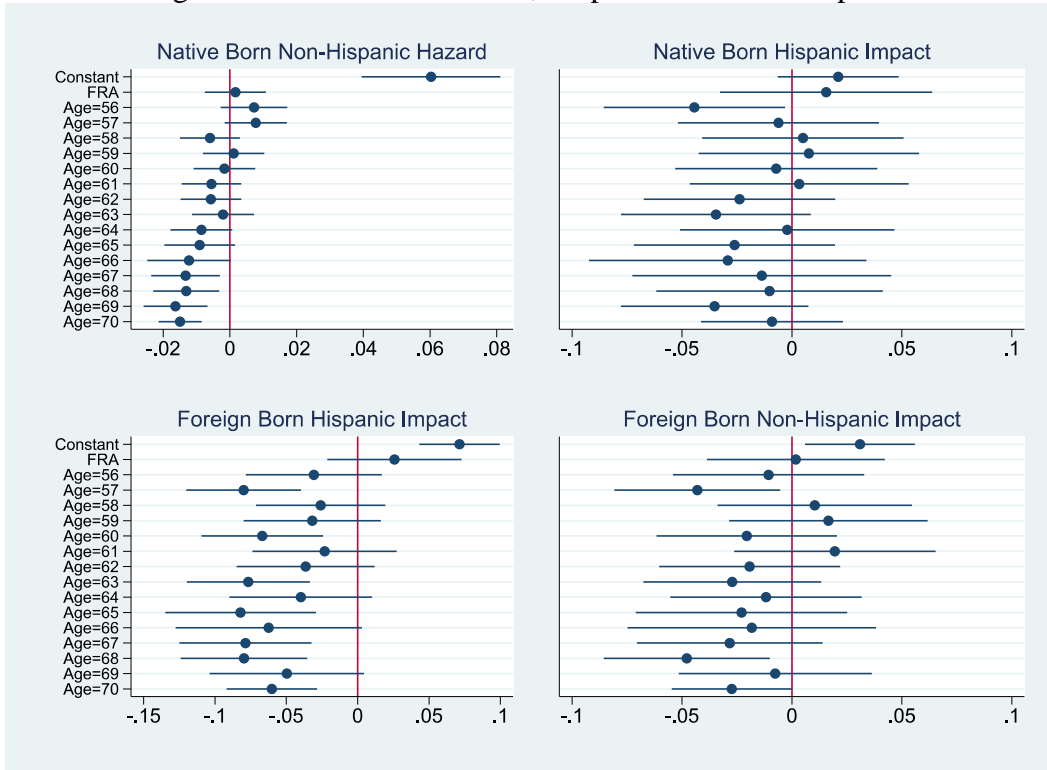Figure 8a: Hazard of Attrition, Hispanics and non-Hispanics

Figure 8b: Hazard of Attrition, Age of Arrival