Immigrants and Retirement Resources

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The extensive literature documenting differences in wages between immigrant and native-born workers suggests that immigrants may enter retirement at a significant financial disadvantage relative to workers born in the United States. However, little work has examined differences in retirement resources and retirement security between immigrants and natives. In this article, we use data from the Health and Retirement Study linked with restricted data from the Social Security Administration to compare retirement resources of immigrants and natives. Our results suggest that while immigrants have lower levels of Social Security benefits than natives, when holding demographic characteristics constant, immigrants have higher levels of net worth. The estimated immigrant differentials vary a great deal by number of years in the United States, with the most recent immigrants being the least prepared for retirement.

Introduction

An extensive literature in economics documents that immigrants receive lower wages than native-born workers with similar characteristics.[1] Those gaps in wages imply that immigrants may enter retirement at a significant financial disadvantage relative to US natives. However, much less work has examined differences in retirement resources and retirement security between immigrants and natives. This topic is important because immigration has often been suggested as a way to improve, at least temporarily, the finances of a pay-as-you-go Social Security program (see, for example, Lee and Miller (2000), Storesletten (2000), and Board of Trustees (2010)). This approach to improving the financial stability of Social Security can be particularly effective in a system with many illegal immigrants who may pay Social Security taxes but never claim benefits (Goss and others 2013). Understanding how immigrants as a whole fare when they reach retirement is an important consideration when evaluating the long-term costs and benefits of any changes in immigration policy. Although Social Security program rules are neutral in that they do

not insure one group differentially from another, it is important to understand the extent to which old-age outcomes might differ for a large immigrant population.

In this article, we use the Health and Retirement Study (HRS) to compare retirement resources of immigrants with those of the native born. Most research on the wealth of immigrants nearing retirement ages does not examine the potential role of Social Security. This is an important omission because Social Security benefits are the most important source of income for most retired Americans. We use HRS data linked with restricted-access data on earnings histories from Social Security administrative records to estimate future Social Security benefits for respondents who have not yet reached retirement age. Then, we supplement those estimated benefits with

Selected Abbreviations	
HRS	Health and Retirement Study
PIA	primary insurance amount

self-reported data on actual Social Security benefits for respondents aged 65 or older, as well as data on pension coverage, housing, and total net worth. We document differences in retirement resources between immigrants and natives and then explore the role of economic and demographic characteristics in explaining those differentials. Finally, we look at differences in retirement resources of immigrants based on the number of years they have spent in the United States.

We find that working-age immigrants have lower predicted Social Security benefits than natives and that immigrants over the age of 65 have lower self-reported actual Social Security benefits. These differentials are statistically significant and remain so even after controlling for a number of demographic and socioeconomic characteristics such as education, self-reported health, census division, and race and ethnicity. However, there is wide variation in duration of residence in the United States among HRS respondents, and we find that the immigrant differentials in expected resources from Social Security depend greatly on the number of years they have spent in the country. Although immigrants in the HRS who have been in the United States for the median number of years (about 36) or less have substantially lower expected resources from Social Security than natives, that gap decreases with additional years of US residency. Furthermore, we find that the gap is due to fewer quarters of work in Social Security–covered employment, rather than lower earnings during covered quarters.

The differences in Social Security income may not lead to lower retirement security if immigrants compensate for them with higher private wealth accumulation. We find that average net worth is substantially lower for immigrants. However, when we hold education, race, ethnicity, and other demographic characteristics constant, the foreign born have substantially *higher* net worth than native-born respondents with the same characteristics, suggesting that this wealth gap is due to differences in characteristics and not immigrant status per se. Our back-of-the-envelope calculations suggest that at the sample median years of residence in the United States, after controlling for individual characteristics, immigrants in our sample have amassed private wealth to offset about 50 percent of their lower predicted Social Security benefits.[2] These findings add to a growing literature that documents a great deal of variation in economic well-being within the immigrant population. They also identify a particularly vulnerable group with respect to retirement security—recent immigrants nearing retirement.

Why Might Immigrants Have Lower Retirement Resources?

Families rely on three main types of resources during retirement: (1) Social Security income, (2) pensions, and (3) private savings and wealth. Traditionally, this has been referred to as the "three-legged stool" of retirement security (Cutler 1996). There are a number of reasons why each of these resources might be expected to differ between immigrants and natives. Earnings are a primary determinant of both Social Security benefits and private wealth. Previous research documents significantly lower earnings for immigrants than for natives. A large fraction of this differential can be explained by differences in observable socioeconomic characteristics (Borjas 1999). In addition, country of origin has a large effect on immigrant/native earnings differentials (Duleep and Dowhan 2008; Abramitzky, Boustan, and Eriksson 2012). Finally, evidence suggests that entry earnings of more recent immigrants have been declining across cohorts. Some researchers have interpreted that decline as a decrease in immigrant quality (Borjas 1985, 1987, 1992), while others have argued that it reflects changes in the transferability of skills from the host country to the United States (Duleep and Regets 2002).

Under current Social Security rules, workers who have immigrated to the United States are likely to receive lower benefits than natives. Because Social Security requires 40 quarters of covered earnings before an individual is eligible to receive any benefits, many immigrants may not meet eligibility requirements. Those workers who are eligible for Social Security may have lower benefits either because they have earned fewer quarters of coverage than natives or because they have worked "off the books." Indeed, Cohen and Iams (2007) find that immigrants in the Survey of Income and Program Participation (SIPP) are less likely to receive Social Security benefits, and Favreault and Nichols (2011) find that about 20 percent of male immigrants have made contributions to the system but are not eligible for benefits.[3] In addition, because benefits are based on average earnings over the 35 years of highest earnings, even immigrants and natives with identical earnings at retirement may have large differences in Social Security benefits, if immigrants are more likely to have years without Social Security–covered earnings.

However, the redistributive nature of Social Security may mean that many immigrants realize a higher rate of return on payroll tax contributions than US natives because immigrants have fewer years of

covered earnings (Gustman and Steinmeier 2000). This is confirmed by Favreault and Nichols (2011), who find that immigrants who receive benefits are likely to receive higher replacement rates. Furthermore, recent work by Borjas (2011) suggests that immigrants who arrive in the United States at older ages may have higher employment rates than same-age, native-born workers, in part to accumulate the necessary work credits for Social Security.

Despite the fact that immigrants may have fewer quarters of Social Security–covered earnings and therefore lower Social Security benefits than natives, their retirement resources may still be adequate if they compensate for those differences with greater private wealth accumulation. Previous research notes that Social Security and private savings could be substitutes for each other (see Feldstein (1974) and CBO (1998) for a review of this literature). In addition, conditional on earnings, private wealth accumulation could vary between immigrants and natives because of differences in savings rates (resulting from differences in preferences for savings or differential consumption and expenditure patterns) or because of differences in rates of return.

However, evidence suggests that immigrants have lower savings rates than natives (Carroll, Rhee, and Rhee 1994). In addition, there may be measurement issues associated with comparing savings rates of immigrants with those of natives. For example, Hispanic immigrants are more than twice as likely as natives to have provided financial assistance to family members (both in and out of the United States), and they are more likely to expect their retirement years to be financed by income of other family members (Kamasaki and Arce 2000). Although these intergenerational transfers may be undocumented in standard data sets, for many immigrants these transfers may be a major component of retirement saving and planning.[4]

Furthermore, immigrants exhibit substantially different portfolio allocations than do natives, in ways that we would also expect to lead to differences in net worth. Previous research finds that immigrants are less likely to own a broad array of financial assets (including the simplest forms of assets—such as savings and checking accounts) than the native born (Osili and Paulson 2007), and that they hold a much higher proportion of their net worth in automobiles than in financial or housing assets (Cobb-Clark and Hildebrand 2006). Evidence on Hispanic immigrants suggests that they tend to save more for short-term goals such as a home purchase, and that they are extremely risk averse,

placing greater importance on safety than on the rate of return on investments (Kamasaki and Arce 2000). These differences in savings behavior and portfolio allocation across immigrant groups contribute to a great deal of observed variation in net worth and retirement well-being (see, for example, Cobb-Clark and Hildebrand (2006) and Favreault and Nichols (2011)).

Our research adds to the literature on immigrants and wealth with a focus on retirement security. We use data from the HRS linked to restricted-access Social Security administrative data, which allows us to examine a broader set of resources available to immigrants at retirement. We examine immigrant/native differentials in Social Security, looking at both *expected* benefits or primary insurance amounts (PIAs) for immigrant workers aged 51–61 and *actual* self-reported Social Security income for those aged 65 or older. The PIA is the benefit a person would receive if he or she chose to begin receiving Social Security benefits at his or her normal retirement age.[5] We also examine measures of private wealth accumulation, including pension coverage, housing, and net worth. We then explore whether the differentials in those measures can be explained by a number of demographic and socio-economic factors and whether they vary in magnitude by the number of years spent in the United States.

Data and Methodology

To examine immigrant differences in retirement resources and retirement timing, we use data from the HRS. In 1992, the HRS interviewed individuals born from 1931 through 1941 (aged 51–61) and their spouses or partners, and it has reinterviewed those respondents every 2 years since. In 1998 and every 6 years after that, additional birth cohorts were added to the HRS. Also in 1998, respondents in the Asset and Health Dynamics Among the Oldest Old (AHEAD) study were added to the HRS, making it a representative sample of US residents aged 51 or older. For most of our analysis, we use samples of respondents interviewed in 1998, 2000, 2002, or 2004 because the combination of HRS respondents and the newly added AHEAD respondents gives us a representative sample of people older than age 65. We restrict our sample differently when examining expected Social Security benefits because Social Security earnings histories were collected only for HRS respondents who were aged 51–61 when they were first interviewed in 1992 or 1998.

The HRS has a number of advantages for conducting this type of analysis relative to other data sets. In every wave, the survey asks about income from a

variety of sources, labor supply, and levels of different types of assets and financial accounts. In many surveys, respondents find questions on asset holdings difficult to answer, leading to significant problems with nonresponse and measurement error (Smith 1995). Respondents may believe that the surveyor wants an exact measure of their wealth, and they provide a precise but inaccurate estimate. Respondents may also find questions asking for a precise measure of their wealth too intrusive. As a result, the wealth data in many surveys are viewed with skepticism. As described in detail in Smith (1995), the HRS survey design specifically tried to minimize such biases by using unfolding brackets to obtain ranges of asset values when individuals refused to report exact values or said they did not know the exact value. Equally important is the fact that the HRS can be merged to respondents' actual Social Security earnings histories through restricted access, making it possible to estimate future Social Security benefits for respondents who have not yet started collecting them.

Our primary focus is on the financial resources that individuals will have access to in their retirement. Our unit of analysis in this article is the individual, and we stratify our analysis by both sex and marital status. This allows us to compare the financial resources of immigrants with those of natives for four distinct subgroups—married men, married women, unmarried men, and unmarried women. Because most of the married men in our sample are coupled with married women in the sample, in some sense we are double counting those families. However, by looking separately at the married men and the married women, we can estimate the relationships between wealth, immigrant status, and distinguishing traits by using individual characteristics of either the husband or the wife, and we can therefore examine differences in these relationships by sex.

Most control variables—including race, ethnicity, education, and self-reported health status—are for the individual in question. However, the HRS, like most data sets, measures wealth at the family level. As a result, our wealth measures for married individuals are at the family level rather than at the individual level. In addition, our unmarried subsamples include the never married, divorced, and widowed. In interpreting our results, it is important to keep in mind that the composition of these groups is affected by immigrant/native differences in mortality, marriage, and divorce. Sevak and Schmidt (2008) document lower age-specific mortality rates for immigrants than for natives.

Immigrants are less likely than natives to have never been married, are more likely to be married, and are less likely to divorce (Grieco and others 2012).

We examine three major sources of retirement income—Social Security benefits, pension coverage, and private wealth. To calculate future eligibility and expected benefits, we merge HRS data with Social Security administrative records on covered earnings. The records, which are available for roughly 75 percent of the sample, report annual earnings (up to a yearly maximum) in sectors covered by Social Security from 1951 through 1991 for respondents born in the 1931–1941 period and from 1951 through 1999 for respondents born in the 1942–1947 period.

We use self-reported data in the HRS for earnings beyond those years, and we then impute earnings into the future for individuals who have not reached age 62 by 2004 (that is, individuals born in the 1943–1947 period). To do so, we assume that the individual's labor force status remains the same as that in 2004; for those who were working, we use a flat inflation-adjusted earnings profile until age 62.[6] One concern is that the self-reported earnings may have measurement error that is lacking from the administrative data. However, as discussed earlier, the HRS was designed and updated with a great emphasis on accurate measurement of financial variables. Gustman and Steinmeier (1999) find that PIAs calculated from self-reported earnings in the HRS overstate those calculated from the restricted Social Security administrative earnings records by 5.8 percent on average. However, this varies largely by sex. PIAs for men calculated from self-reported earnings are only 1.4 percent overstated relative to those calculated from the administrative data, while for women they are overstated by 13.5 percent.

We apply the rules used by Social Security to calculate eligibility and the PIA formula. In reality, the actual benefits are a function of the PIA but will vary based on the exact year and age of entitlement, as well as on marital status. Because we want to compare potential benefits across individuals of different ages, holding constant birth year, marital status, any changes in Social Security eligibility age, and actual retirement age, we use the PIA itself rather than projected benefits and apply Social Security rules for individuals reaching age 62 in a fixed year (2006) to calculate the PIA. This allows us to isolate differences in PIA that are due to work history.

We calculate the PIA at the individual level, based on an individual's earnings history, even for married

respondents. As a result, our PIA measures are not confounded by the fact that some individuals may receive Social Security retirement benefits as dependent benefits from their spouses, rather than benefits based on their own earnings histories. For respondents older than age 65, we examine current self-reported Social Security income. Although the PIA is based solely on an individual's earnings history, actual self-reported Social Security benefits include dependent benefits received based on a spouse's earnings history as well.

We then examine differences in pension coverage as reported by respondents in the HRS. Lastly, we look at measures of private wealth, examining an indicator for home ownership, measures of home equity, and total net worth. Net worth includes home equity, other real estate, stocks, bonds, individual retirement accounts (IRAs), businesses, farms, balances in checking and savings accounts, certificates of deposit (CDs), automobiles, trusts, and other assets—net of debts. It is worth nothing that our data do not include information on the earnings or expected pension benefits of immigrants in their countries of origin, and as such, we might understate their total available retirement resources.

Approximately 2,900 age-representative HRS respondents (those born in 1947 or earlier), or roughly 10 percent of the sample, are foreign born. We plot the distribution of immigrants by the number of years they have been in the United States (Chart 1). The median number of years in the United States is 36. However, there is substantial variation across the sample. Some respondents immigrated as children, others in their working years, and others as seniors.

Table 1 provides a snapshot of how retirement resources vary between the US-born and foreign-born respondents in our HRS analysis sample. The first seven variables measure the various forms of retirement income or wealth that we focus on in this article: (1) the PIA for respondents who have not yet retired, (2) self-reported Social Security benefits for those older than age 65, (3) pension coverage rates, (4) family net worth, (5) home ownership, (6) home equity, and (7) nonhousing family net worth. However, because economic well-being at retirement is not strictly limited to those variables, we look at a number of additional factors. We compare family income to see whether and to what extent immigrants and natives differ in terms of the contributions of family members. We also compare the current labor force activity of immigrants with that of natives by examining own earnings and indicators for whether the respondent is retired or working. The sample for each of those comparisons differs depending on the variable of

Chart 1.
Distribution of immigrants in the HRS, by number of years in the United States, 2004
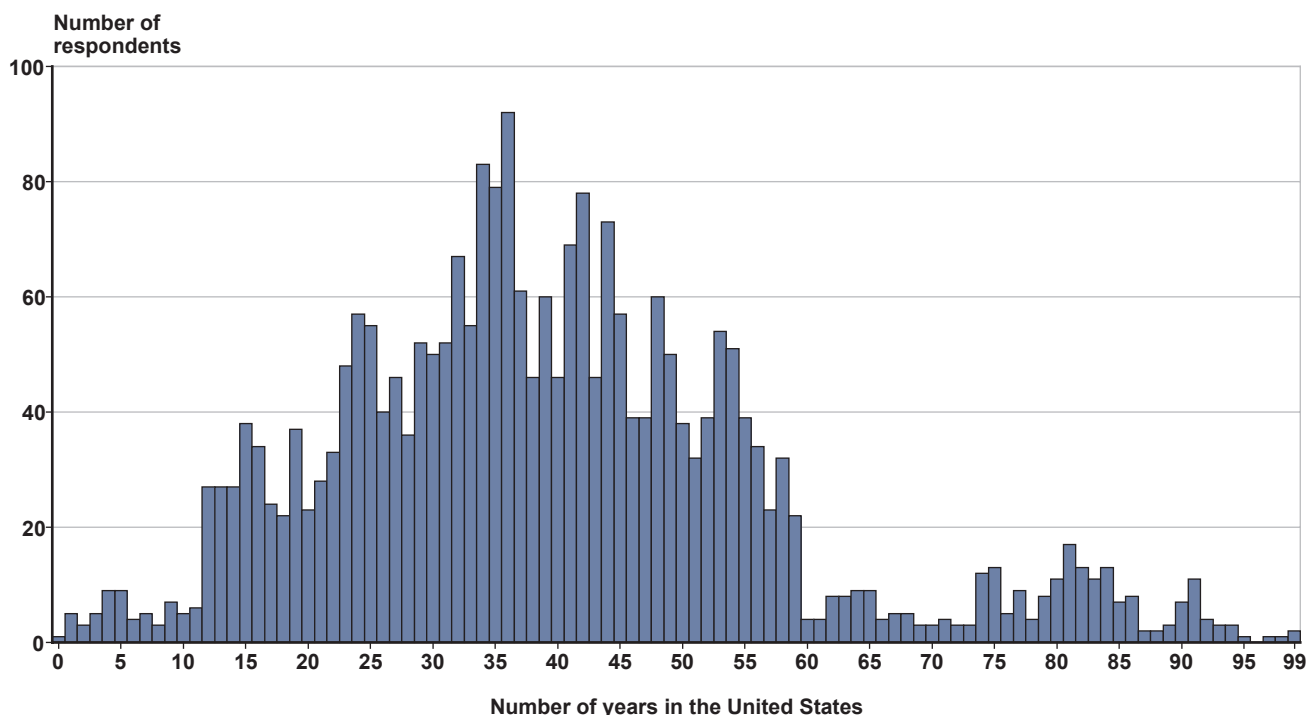
SOURCE: Authors' tabulations using the Health and Retirement Study.

interest. For most variables, the unit of observation is an HRS respondent older than age 51 in 1998, 2000, 2002, and 2004. For the PIA, the sample includes only respondents who were aged 51–61 in 1992 or 1998. Self-reported Social Security benefits are only calculated for respondents older than age 65, while pension coverage is only reported for those workers younger than age 65.

For almost all indicators of financial well-being, immigrants are worse off than the native born. Among the married male subsample, immigrants aged 51–61

have a forecasted monthly PIA that is $316 lower than that of native-born respondents. Similarly, married male immigrants aged 65 or older have realized annual Social Security benefits that are $3,069 lower than those of similar natives. Married male immigrants are 11 percentage points less likely to have pension coverage and 14 percentage points less likely to be homeowners. The net worth of immigrant families is almost $100,000 less than that of native families. The one exception to those patterns is in the area of home equity; conditional on home ownership, mean home

Table 1.

Comparison of US natives with immigrant HRS respondents aged 51 or older, by selected characteristics and years—1998, 2000, 2002, and 2004 (except where noted)

Selected characteristic	Men		Women	
	US native	Immigrant	US native	Immigrant
Married				
Social Security PIA ($) [a]	1,504	1,188 **	733	582 **
Actual annual (family) Social Security benefits ($) [b]	15,142	12,073 **	16,175	13,596 **
Pension coverage (%) [c]	60	49 **	56	47 **
Family net worth ($)	375,335	276,744 **	376,682	282,752 **
Homeowner (%)	88	74 **	88	75 **
Family home equity ($) [d]	137,679	143,204 *	138,923	146,674 **
Nonhousing family net worth ($)	331,106	218,217 **	323,714	241,440 **
Family income ($)	69,322	58,030 **	66,471	55,788 **
Own earnings ($)	24,947	22,525 *	10,330	8,458 **
Retired (%)	58	47 **	36	25 **
Working (%)	45	46	36	32 **
Unmarried				
Social Security PIA ($) [a]	1,227	955 **	855	580 **
Actual annual (family) Social Security benefits ($) [b]	9,960	8,503 **	8,861	7,164 **
Pension coverage [c] (%)	49	33 **	55	42 **
Family net worth ($)	208,500	158,852 **	167,751	139,904 **
Homeowner (%)	57	41 **	59	44 **
Family home equity ($) [d]	111,844	139,204 **	104,880	136,576 **
Nonhousing family net worth ($)	206,296	158,569	113,130	70,079 **
Family income ($)	41,427	30,507 **	24,324	20,105 **
Own earnings ($)	16,964	13,627	7,260	6,749
Retired (%)	59	58	49	39 **
Working (%)	33	32	26	23 **

SOURCE: Authors' tabulations using the Health and Retirement Study matched to Social Security administrative records.

NOTES: Financial variables are in 2006 dollars.

* Means/medians are significantly different from one another at the 10 percent level.

** Means/medians are significantly different from one another at the 5 percent level.

*** Means/medians are significantly different from one another at the 1 percent level.

a. Among respondents aged 51–61 in 1992 or 1998.

b. Among respondents aged 65 or older (includes spousal benefits if applicable).

c. Among respondents younger than age 65 in 1998 and 2000.

d. Among homeowners.

equity of immigrants is about $5,500 higher than that of nonimmigrants. Both family income and own earnings are lower for married male immigrants than for their native-born counterparts. Interestingly, married male immigrants are less likely to report being retired, but are not more likely to be currently working.[7] In most of these cases, the noted immigrant differences are statistically significant at the 5 percent level or higher.

The distinction between our measure of PIA (calculated at the individual level) and actual Social Security benefits (reported at the family level) shows up clearly when comparing patterns between married men and married women (Table 1). The PIAs for married women are roughly half those for married men, but actual Social Security benefits are higher for married women. This asymmetric treatment should be kept in mind when interpreting results for these variables.

Patterns for PIA, Social Security benefits, pension coverage, and private wealth are similar for the other subsamples (married women, unmarried men, and unmarried women). The major differences that emerge when stratifying by both sex and marital status pertain to employment. Both married and unmarried female immigrants are less likely to report retirement and less likely to be currently working than native-born women of the same marital status.[8] Unmarried male immigrants have similar rates of retirement and labor force participation to those of their native-born counterparts, and they also have similar levels of own earnings. Table 2 provides summary statistics for our sample across other variables used in this analysis. Immigrants are more likely to be Hispanic, to have fewer years of education, more children, and worse self-reported health[9] than natives.

Table 2.
Summary statistics for HRS respondents aged 51 or older, by selected characteristics and years—1998, 2000, 2002, and 2004

Selected characteristic	Immigrants	US natives
Number of years in the United States	38.04 (16.93)	. . .
Female	0.59	0.57
Age	67.97 ** (10.78)	68.31 (10.33)
Black	0.09 **	0.14
Hispanic	0.45 **	0.04
Education (years)	9.88 ** (4.96)	12.27 (3.10)
Number of children	3.49 ** (2.45)	3.20 (2.18)
Self-reported health	3.14 ** (1.15)	2.87 (1.15)
Family income (in 2006 $)	44,587 ** (117,878)	53,731 (85,494)
Currently working	0.34	0.36
Retired	0.39 **	0.49
Age at retirement (censored)	61.60 **	59.81
Number of observations	7,058	68,731

SOURCE: Authors' tabulations using the Health and Retirement Study.

NOTES: Selected standard errors are in parentheses.

. . . = not applicable.

* denotes significant differences between immigrants and natives at the 10 percent level.

** denotes significant differences between immigrants and natives at the 5 percent level.

*** denotes significant differences between immigrants and natives at the 1 percent level.

In one sense, the raw immigrant/native differentials presented in Table 1 tell much of the story. In the United States, immigrants have substantially lower levels of retirement resources. This has important implications for public policy. However, we know from previous research that there are large differences in wealth by sex (Schmidt and Sevak 2006; Edlund and Kopczuk 2009), race (Blau and Graham 1990; Barsky and others 2002), education (Behrman and others 2010), and self-reported health (Smith 1999; Attanasio and Hoynes 2000). Appropriate policies designed to improve immigrants' preparedness for retirement might depend on whether the raw wealth gaps are driven by differences in these characteristics or immigrant status per se. As a result, it is important to know to what extent the immigrant/native differences highlighted in Table 1 can be explained by differences in selected characteristics between the immigrants and natives in our sample.

To this end, we estimate a series of multivariate regressions for the different measures of retirement resources separately for each of the four sex/marital-status groups. We first estimate the following:

$$Outcome_i = \alpha + \beta_1\, Immigrant_i + X_i\, \gamma + \varepsilon_i\,,$$

where we regress our outcome measures on an indicator of whether the individual is an immigrant. The X vector controls for a number of additional variables correlated with both wealth and immigrant status. Those variables include a quadratic in age, number of children, and self-reported health status.[10] We also include a control for years of education as a proxy for permanent income, which should matter for savings decisions. We control for census division to account for spatial clustering of immigrants in particular areas of the country. We also control for race and Hispanic ethnicity. These characteristics are closely associated with country of origin among immigrants, and previous work has shown a significant amount of heterogeneity in immigrant outcomes depending on country of origin (for example, Cobb-Clark and Hildebrand (2006); Duleep and Dowhan (2008); Favreault and Nichols (2011); Abramitzky, Boustan, and Eriksson (2012)). However, we are unable to control directly for country of origin in our analysis.[11] The regressions also include survey year fixed effects. For most regressions, we calculate Huber-White robust standard errors that are clustered at the respondent level; this accounts for the fact that we have multiple observations for respondents within our sample in those regressions, and therefore our errors are likely to be correlated for a given individual across survey waves.[12]

Finally, we also exploit the fact that the HRS notes the year of immigration to test for differential effects for those immigrants who have been in the United States for longer periods. We reestimate our specification adding a quadratic in years in the United States.[13] There is some debate in the earnings literature on how to interpret the estimated effect of number of years in the United States. Some have interpreted the effect as evidence of assimilation, but in a cross-sectional analysis, it may be driven by changes in the characteristics or skills of successive cohorts of immigrants, or changes in the relationship between skills and US economic outcomes (see Borjas (1999) for a detailed discussion). Examining repeated cross-sectional data allows a researcher to differentiate between assimilation effects and cohort-of-arrival effects, but the availability of those data is restricted by the limited number of cohorts currently included in the HRS.[14] Because wealth is a function of earnings, consumption, and savings over all prior years, the estimated difference by number of years in the United States may reflect the effects of assimilation on earnings, consumption, and savings in each successive year the immigrant has been in the country. However, it could also reflect differences in the characteristics of immigrant cohorts. To the extent that those cohort differences are captured in differences in health status or education, we can control for them in our empirical work, but we cannot rule out the possibility that these estimates are driven by unobserved differences in the characteristics of immigrant cohorts over time.

As Borjas (2011) notes, it can be difficult to interpret the coefficients on a quadratic in number of years in the United States. To facilitate interpretation of our results, we evaluate the wealth gap implied by these coefficients at three specific points in the distribution of years in the United States—25th percentile, median, and 75th percentile. At each of those points, we perform a Wald test to determine whether our model predicts significant differences in a given outcome measure between natives and immigrants for the given number of years.

Results

Because the primary source of retirement income for most individuals in the United States is Social Security, we first look at differences in Social Security benefits between immigrants and natives and then examine pension coverage and wealth among immigrant and native workers, encompassing what has traditionally been referred to as the three-legged stool.

Differences in Social Security Benefits

Table 1 shows that, in each subsample, immigrants have substantially lower monthly PIAs, and therefore they have lower expected Social Security benefits than do natives. Table 3 looks at those differences in a regression framework, with controls for age, education, self-rated health, number of children, census division, and race and ethnicity. Estimated coefficients on those control variables are in the expected direction.[15] For all subgroups, each additional year of education is associated with an increase in the PIA. Self-rated health, which ranges from 1 for "excellent health" to 5 for "poor health," is also correlated with the PIA, such that respondents in worse self-reported health

have lower expected benefits, consistent with the well-documented relationship between health and earnings (for example, Smith (1999)). For married men, when all covariates are included, the estimated expected monthly benefit is $231 lower for immigrants than for natives (compared with a raw gap of $316 without covariates, as shown in Table 1). The magnitude of this differential remains large, given mean expected monthly Social Security benefits of approximately $1,500 for native-born married men.

Similar patterns are evident for the other subgroups. For married women, the raw PIA gap shown in Table 1 is $151 and falls to $77 after including all control variables. For unmarried men and women, the raw gaps

Table 3.

Estimated monthly Social Security benefit for HRS respondents aged 51–61 in 1992 or 2008, overall and by percentile number of years in the United States (in dollars)

Characteristic	Married		Unmarried	
	Men	Women	Men	Women
	Without controlling for quarters of covered earnings			
US native (reference category)	1,505	734	1,227	854
Model-predicted immigrant difference	-231 **	-77 **	-169 **	-158 **
	(30)	(32)	(69)	(44)
Model-predicted immigrant difference at given percentile number of years in the United States:				
25th	-298 **	-121 **	-473 **	-235 **
	(36)	(40)	(87)	(54)
50th	-97 **	-21	-133	-116 **
	(36)	(37)	(82)	(55)
75th	16	12	29	-61
	(35)	(38)	(80)	(53)
	Controlling for quarters of covered earnings			
US native (reference variable)	1,505	734	1,227	854
Model-predicted immigrant difference	136 **	93 **	159 **	89 **
	(17)	(15)	(37)	(24)
Model-predicted immigrant difference at given percentile number of years in the United States:				
25th	187 **	114 **	168 **	118 **
	(21)	(19)	(49)	(30)
50th	199 **	111 **	167 **	114 **
	(21)	(18)	(44)	(29)
75th	158 **	94 **	164 **	86 **
	(20)	(18)	(43)	(28)

SOURCE: Authors' tabulations using the Health and Retirement Study matched to Social Security administrative records.

NOTES: The model predicts differences in PIA between US natives and immigrants. It includes a measure for number of years since immigration and its quadratic—controlling for age, race, education, census division, year of immigration, number of children, and health. Standard errors are in parentheses.

* denotes significant differences between immigrants and natives at the 10 percent level.

** denotes significant differences between immigrants and natives at the 5 percent level.

*** denotes significant differences between immigrants and natives at the 1 percent level.

in PIAs are similar in magnitude, at roughly $273. Adding controls in each case reduces the monthly PIA gap by over $100—$169 for the men and $158 for the women.

In Table 3, we also examine how the immigrant/native estimated differential in the PIA varies by number of years in the United States—evaluated at the 25th, 50th, and 75th percentiles of years spent in the country. These estimates suggest that for married men, the immigrant differential in the PIA is negative and significant throughout a good part of the distribution of years spent in the United States. Immigrants in the United States at the 25th percentile number of years have a PIA that is $298 lower than that of natives. At the median, the immigrant gap in the PIA is much smaller, at $97, but still statistically significant at the 5 percent level (throughout the remainder of the text, references to statistical significance signify the 5 percent level). At the 75th percentile, the gap actually turns positive, but is not statistically different from zero. These results suggest that while there are large and statistically significant differences in PIAs between married male immigrants and natives, there is a great deal of heterogeneity across immigrants depending on how long they have been in the United States. As noted earlier, this could be due to assimilation or to changes in the characteristics of immigrant cohorts over time. Results are qualitatively similar for the other subgroups. Years spent in the United States appear to be most important for unmarried men, where the PIA for immigrant men at the 25th percentile of years in the United States is 61 percent of the mean benefit for the native born.

Our PIA results suggest that immigrants nearing retirement are likely to have lower future Social Security benefits than natives, even after controlling for a wide array of socioeconomic characteristics. One explanation for our findings is that because of their later arrival in the United States, immigrants simply have fewer quarters of Social Security–covered earnings. Another possibility is that immigrants have the same number of quarters of covered earnings, but that those earnings are lower. Taking advantage of our restricted data, we reestimate our PIA regressions controlling for the number of covered quarters. The bottom panel of Table 3 shows that controlling for quarters of covered earnings turns the overall immigrant coefficient for all groups (after adjusting for all control variables) *positive* and significant, suggesting that the differences in PIAs between immigrants and natives discussed earlier can be entirely explained by quarters of covered earnings. After controlling for quarters of covered earnings, there are no longer significant differences in PIAs by number of years spent in the United States. This suggests that the larger gap in PIA of more recent immigrants observed in the top panel of Table 3 is due to a shorter history of Social Security–covered employment rather than differences in earnings between different immigrant cohorts.

In Table 4, we conduct the same exercise for actual self-reported annual Social Security benefits for respondents aged 65 or older. The immigrant patterns are very similar to those for expected Social Security benefits presented in Table 3. For married men, the raw immigrant/native differential without control variables as presented in Table 1 is $3,069. Adding all controls reduces the differential by half, to $1,495; however, the remaining gap is still statistically significant and large in magnitude. When we evaluate the immigrant effect by years spent in the United States, again, differences in average Social Security benefit levels emerge. The gap is negative and significant at the 25th percentile and not statistically different from zero at the median, but turns positive and statistically significant at the 75th percentile. The patterns found for married men are extremely similar to those for the other three subgroups, with negative and significant gaps at lower number of years in the United States, combined with positive and significant gaps at higher number of years in the country.

A major difference between Tables 3 and 4 is that actual, self-reported Social Security benefits for immigrants at the 75th percentile of years spent in the United States are about $800 to $1,400 higher than those for natives, although this is not the case for PIAs among the younger HRS respondents. We think there are two main potential explanations for that difference. Differences between cohorts—either in age or in year of immigration—is the simplest explanation. The subsample with actual, self-reported Social Security benefits consists of respondents aged 65 or older, while the PIA sample only includes respondents aged 51–61. An alternative explanation for the difference could be that immigrants may work longer than natives and retire later (there is some evidence of this for married men in Table 1), which would, conditional on covered earnings history, lead to higher Social Security benefits relative to their US-born counterparts. If this is the case, we would not see the difference for the younger cohort in projected PIAs because they have not yet retired.

Table 4.
Actual self-reported annual Social Security benefit for HRS respondents aged 65 or older, overall and by percentile number of years in the United States, 1998–2004 (in dollars)

Characteristic	Married		Unmarried	
	Men	Women	Men	Women
US native (reference category)	15,148	16,187	9,996	8,851
Model-predicted immigrant difference	-1,495 **	-1,085 **	-680	-661 **
	(346)	(381)	(460)	(232)
Model-predicted immigrant difference at given percentile number of years in the United States:				
25th	-2,583 **	-1,917 **	-1,705 **	-1,346 **
	(352)	(416)	(486)	(282)
50th	-398	-119	85	27
	(379)	(452)	(497)	(300)
75th	821 **	805 *	1,410 **	566 *
	(385)	(473)	(505)	(303)

SOURCE: Authors' tabulations using the Health and Retirement Study.

NOTES: The model predicts differences in benefits between US natives and immigrants—controlling for age, race, education, census division, year of immigration, number of children, and health. Standard errors are in parentheses.

* denotes significant differences between immigrants and natives at the 10 percent level.

** denotes significant differences between immigrants and natives at the 5 percent level.

*** denotes significant differences between immigrants and natives at the 1 percent level.

Differences in Pension Coverage and Wealth

We next examine pension coverage among immigrant and native workers. Those regressions are run on the sample of HRS respondents younger than age 65 who were currently working. As shown in Table 1, married male immigrants have an 11 percentage point lower probability than their native-born counterparts of reporting that they have a pension. Again, those differentials are large in magnitude, given a mean probability of pension coverage among the married male native born of 60 percent. Results in the "Married" section of Table 5 show that controlling for age, health, education, census division, and race and ethnicity reduces the difference in the probability of pension coverage by 7 percentage points. Furthermore, additional years spent in the United States reduce the immigrant/native gap in pension coverage among married men. Immigrants in the United States for the 25th percentile number of years show a 10 percentage point lower probability of reporting pension coverage, but as time spent in the country increases to the median number of years, that gap in coverage decreases by half (5 percentage points). Immigrants in the United States for the 75th percentile number of years no longer exhibit a statistically significant gap in pension coverage. For married women, the significant raw gap in pension coverage shown in Table 1 is completely eliminated once controls are included. For unmarried men and women, the pattern of results is more similar to that of married men—a significant raw differential in pension coverage is reduced in magnitude once controls are included, but remains large and economically significant. However, these significant differentials are entirely driven by immigrants with the fewest number of years in the United States.

We now turn to measures of private wealth and examine immigrant/native differentials in total net worth, measured at the family level (Table 6). As shown in Table 1, large raw wealth differentials exist between immigrants and natives in all subgroups. For married men, married women, and unmarried men, the gaps are between 24 and 26 percent of the average level of net worth for natives in those subgroups. For unmarried women, the gap is smaller—roughly 17 percent. However, adding controls for age, education, self-rated health, number of children, census division, and race and ethnicity completely eliminates the estimated immigrant/native gap in net worth for all subgroups. In fact, for three of the four subgroups, the adjusted differentials are significant and *positive*. Among married men, immigrants (after controlling for those variables) have total net worth

Table 5.
Estimated pension coverage of HRS respondents younger than age 65 and working, overall and by percentile number of years in the United States, 1998–2004

	Married		Unmarried	
Characteristic	Men	Women	Men	Women
US native (reference category)	0.60	0.56	0.49	0.56
Model-predicted immigrant difference	-0.07 **	-0.03	-0.12 **	-0.08 **
	(0.02)	(0.03)	(0.06)	(0.03)
Model-predicted immigrant difference at given percentile number of years in the United States:				
25th	-0.10 **	-0.03	-0.15 **	-0.12 **
	(0.03)	(0.03)	(0.07)	(0.04)
50th	-0.05 **	0.00	-0.00	-0.04
	(0.02)	(0.03)	(0.07)	(0.04)
75th	-0.03	0.00	-0.05	-0.02
	(0.03)	(0.03)	(0.07)	(0.04)

SOURCE: Authors' tabulations using the Health and Retirement Study.

NOTES: The linear probability model predicts differences in pension coverage between US-native and immigrant workers—controlling for age, race, education, census division, year of immigration, number of children, and health. Standard errors are in parentheses.

* denotes significant differences between immigrants and natives at the 10 percent level.

** denotes significant differences between immigrants and natives at the 5 percent level.

*** denotes significant differences between immigrants and natives at the 1 percent level.

Table 6.
Estimated net worth of HRS respondents aged 51 or older, overall and by percentile number of years in the United States, 1998–2004 (in dollars)

	Married		Unmarried	
Characteristic	Men	Women	Men	Women
US native (reference category)	376,875	378,255	210,396	168,339
Model-predicted immigrant difference	27,005 **	52,694 **	22,217	37,861 **
	(10,516)	(10,599)	(15,583)	(7,307)
Model-predicted immigrant difference at given percentile number of years in the United States:				
25th	7,660	51,541 **	41,598 **	41,049 **
	(12,666)	(12,862)	(19,101)	(9,217)
50th	55,241 **	70,943 **	56,748 **	50,585 **
	(12,451)	(12,287)	(19,345)	(9,024)
75th	78,481 **	76,285 **	51,774 **	48,677 **
	(13,288)	(13,117)	(21,167)	(9,539)

SOURCE: Authors' tabulations using the Health and Retirement Study.

NOTES: The model predicts differences in net worth (measured at the family level) between US natives and immigrants—controlling for age, race, education, census division, year of immigration, number of children, and health. Standard errors are in parentheses.

* denotes significant differences between immigrants and natives at the 10 percent level.

** denotes significant differences between immigrants and natives at the 5 percent level.

*** denotes significant differences between immigrants and natives at the 1 percent level.

that is $27,000 *higher* than that of the native born. The positive differentials are even larger for women (both married and unmarried)—$52,694 and $37,861, respectively. Together, these estimates suggest that the raw mean immigrant/native difference in wealth shown in Table 1 is due to underlying differences in demographics, education, and family structure as well as race and ethnicity. Within groups defined by those characteristics, immigrants have more wealth than the native born. Regression results again show that differences between immigrants and natives vary substantially by length of time spent in the United States. Among married men, US immigrants at the 25th percentile number of years have net worth that is not statistically different from that of their US-native counterparts. At the 50th and 75th percentile number of years in the country, the wealth premium among immigrant married men is large and statistically significant. For the other three subgroups, these positive, sizable, and statistically significant differentials exist even at the 25th percentile number of years in the country.

We move on to examine the prevalence of home ownership among immigrants versus natives (Table 7). As shown in Table 1, immigrants in all subgroups are less likely to report home ownership than natives. All four groups have rates of home ownership between 13 and 16 percentage points lower than those of natives (although the rates of home ownership are substantially higher for married couples than for individuals, meaning that immigrant gaps in home ownership are smaller in percentage terms among the married). Table 7 presents home ownership gaps adjusted for our set of control variables, and controlling for all covariates reduces that differential by 7–8 percentage points. As in the previous regressions, we again see evidence of assimilation effects. For married men, the probability of home ownership for immigrants is 14 percentage points lower at the 25th percentile of years in the United States, compared with 6 percentage points lower at the median. There are no statistically significant differences in home ownership between immigrant and native married men at the 75th percentile. Results for other subgroups present a largely similar pattern. These findings (lower home ownership rates among immigrants, but significant assimilation) are consistent with findings in Borjas (2002).

Table 8 shows levels of home equity for respondents who are homeowners. As Table 1 shows, average home equity conditional on home ownership is higher among immigrants than natives for all subgroups. Estimates in Table 8 show that the differential grows in magnitude with both the inclusion

Table 7.
Estimated prevalence of home ownership among HRS respondents aged 51 or older, overall and by percentile number of years in the United States, 1998–2004

Characteristic	Married		Unmarried	
	Men	Women	Men	Women
US native (reference category)	0.89	0.88	0.57	0.60
Model-predicted immigrant difference	-0.08 **	-0.07 **	-0.08 **	-0.07 **
	(0.01)	(0.01)	(0.02)	(0.01)
Model-predicted immigrant difference at given percentile number of years in the United States:				
25th	-0.14 **	-0.11 **	-0.09 **	-0.13 **
	(0.01)	(0.01)	(0.03)	(0.02)
50th	-0.06 **	-0.03 **	-0.04	-0.05 **
	(0.01)	(0.01)	(0.03)	(0.02)
75th	0.00	0.01	-0.01	0.00
	(0.01)	(0.01)	(0.03)	(0.02)

SOURCE: Authors' tabulations using the Health and Retirement Study.

NOTES: The linear probability model predicts differences in home ownership between US natives and immigrants—controlling for age, race, education, census division, year of immigration, number of children, and health. Standard errors are in parentheses.

* denotes significant differences between immigrants and natives at the 10 percent level.

** denotes significant differences between immigrants and natives at the 5 percent level.

*** denotes significant differences between immigrants and natives at the 1 percent level.

of covariates as well as number of years in the United States, particularly for married respondents. These results are consistent with two additional studies on immigrants and home ownership. Drew (2002), using data from the American Housing Survey, found that the median value of first-time home purchases among the foreign born was 50 percent higher than that of the native born, and as a result, immigrants were making larger down payments. Chatterjee and Zahirovic-Herbert (2011) find evidence of higher home equity among immigrants, conditional on home ownership, in the National Longitudinal Survey of Youth (NLSY). In both studies, much of this effect was due to the spatial clustering of immigrants in high housing-cost areas like California and New York. Our results include controls for census division of residence, so they account for this clustering. As an additional robustness test, we reestimate those regressions excluding the Mid-Atlantic census region (which includes New York) and the Pacific census region (which excludes California). Our coefficients are slightly smaller in magnitude, but the main results all still hold. One possible explanation for why immigrant homeowners may have greater home equity is that they may be more risk averse, investing a greater share of their wealth in their homes relative to assets like stocks, which they might find riskier. Alternatively, Chatterjee and Zahirovic-Herbert (2011) suggest that immigrants may have credit constraints and lack information about the formal banking sector, and as a result make higher down payments when purchasing a home.

Given the higher levels of home equity for immigrants relative to natives (conditional on home ownership), it is also possible that the higher levels of net worth adjusted for the control variables, as shown in Table 6, might be entirely driven by housing equity. This could be exacerbated by the fact that our sample period includes a number of years of rising housing prices in most parts of the country. In Table 9, we report estimates using only nonhousing wealth (total net worth minus home equity). For all subgroups, throughout the distribution of number of years in the United States, immigrants have higher levels of nonhousing wealth than do natives, and the differential averages out to roughly half that of their total net worth. This suggests that the immigrant advantage in private wealth (conditional on a number of socioeconomic factors as well as race and ethnicity) is driven by differences in both housing and nonhousing wealth.

Table 8.
Estimated levels of home equity among HRS respondents aged 51 or older, overall and by percentile number of years in the United States, 1998–2004 (in dollars)

	Married		Unmarried	
Characteristic	Men	Women	Men	Women
US native (reference category)	137,662	138,921	111,696	105,048
Model-predicted immigrant difference	16,683 **	23,340 **	38,338 **	34,062 **
	(3,158)	(3,168)	(7,403)	(3,603)
Model-predicted immigrant difference at given percentile number of years in the United States:				
25th	18,555 **	19,462 **	54,466 **	38,129 **
	(3,763)	(3,844)	(8,990)	(4,419)
50th	27,369 **	26,366 **	41,705 **	36,710 **
	(3,755)	(3,681)	(9,030)	(4,366)
75th	28,164 **	29,801 **	22,702 **	34,662 **
	(4,066)	(3,986)	(10,840)	(4,688)

SOURCE: Authors' tabulations using the Health and Retirement Study.

NOTES: The model predicts differences in home equity between US-native and immigrant homeowners—controlling for age, race, education, census division, year of immigration, number of children, and health. Standard errors are in parentheses.

* denotes significant differences between immigrants and natives at the 10 percent level.

** denotes significant differences between immigrants and natives at the 5 percent level.

*** denotes significant differences between immigrants and natives at the 1 percent level.

Table 9.

Estimated nonhousing net wealth of HRS respondents aged 51 or older, overall and by percentile number of years in the United States, 1998–2004 (in dollars)

Characteristic	Married		Unmarried	
	Men	Women	Men	Women
US native (reference category)	241,764	242,730	135,495	96,836
Model-predicted immigrant difference	18,168 **	37,354 **	4,780	18,980 **
	(8,822)	(8,876)	(12,803)	(14,625)
Model-predicted immigrant difference at given percentile number of years in the United States:				
25th	6,980	39,435 **	14,407	25,815 **
	(10,603)	(10,780)	(15,718)	(7,353)
50th	35,133 **	50,707 **	30,878 *	26,163 **
	(30,441)	(10,301)	(15,872)	(7,206)
75th	49,039 **	53,108 **	30,749 *	19,672 *
	(11,516)	(10,996)	(17,417)	(7,618)

SOURCE: Authors' tabulations using the Health and Retirement Study.

NOTES: The model predicts differences in nonhousing net worth between US natives and immigrants—controlling for age, race, education, census division, year of immigration, number of children, and health. Standard errors are in parentheses.

* denotes significant differences between immigrants and natives at the 10 percent level.

** denotes significant differences between immigrants and natives at the 5 percent level.

*** denotes significant differences between immigrants and natives at the 1 percent level.

Discussion and Conclusion

An extensive literature in labor economics has focused on wage differentials between immigrants and natives, but much less attention has been paid to differences in retirement resources and retirement security. In this article, we examine differences in the retirement resources of immigrants versus those of the native born. Our results suggest that preretirement immigrants have lower expected Social Security benefits than natives, and that retired immigrants have lower actual Social Security benefits. These lower benefits reflect fewer years of Social Security–covered employment rather than lower average contributions in those years. Our findings present an alternative focus on immigrant differences in Social Security to those of Gustman and Steinmeier (2000) and Favreault and Nichols (2011) who highlight the higher relative replacement rates among immigrants.

In addition, we find that working immigrants are substantially less likely to have pension coverage and that immigrants on average have lower private wealth than do natives. However, after controlling for various demographic differences—education, age, self-reported health, census division, and race and ethnicity—immigrants have substantially *higher* net worth than their similarly situated native-born counterparts.

A logical question is whether the higher private wealth exhibited by immigrants is sufficient to offset the lower levels of Social Security benefits in terms of aggregate retirement security. To assess this, we perform back-of-the-envelope postestimation calculations for our subsample of married men to compare the net present value of future Social Security benefits with net worth for both immigrants and natives. Given the differences in immigrant effects based on the number of years immigrants have lived in the United States, we make that comparison at the 25th, 50th, and 75th percentiles of years spent in the country.

Among the sample of married male respondents aged 51–61, our analysis using the restricted Social Security earnings data suggests that the net present value of the lower Social Security benefits of immigrants in the United States for the median number of years (26) is about $25,000. The estimated immigrant premium in net worth evaluated at the same median number of years is about $14,000—suggesting that these immigrants have amassed private wealth sufficient to offset just over half of their relatively lower Social Security benefits.[16] Married male immigrants in the United States for fewer years have not accumulated enough private wealth relative to natives to offset their lower Social Security benefits, although those in the

United States for the 75th percentile number of years have amassed private wealth substantially greater than that of natives.

Among respondents aged 65 or older, we perform a similar comparison by looking at reported Social Security benefits. For that group, at the 25th percentile of years (30) in the United States, the greater relative private wealth amassed by immigrants (roughly $30,000) offsets 75 percent of the net present value of their lower Social Security benefits. Immigrants in the country for more than 30 years have net worth that sufficiently offsets their lower Social Security benefits relative to natives. In addition, immigrants in the United States for more than 40 years have both higher Social Security benefits and net worth relative to natives.[17]

These results are subject to a number of caveats. First, in interpreting the effects of number of years in the United States, it is impossible for us to disentangle true assimilation effects from cohort differences in either immigrant quality or transferability of skills. We are unable to identify differences that are due to country of origin, which the existing literature suggests is quantitatively important. In addition, any patterns found in the HRS cohort may not be representative of differences in retirement security among future generations approaching retirement.

Furthermore, the mobility of immigrants brings additional complications to an analysis of retirement resources not found with the native born. Our data provide no information on earnings or retirement benefit eligibility for immigrants in their countries of origin, so we could be systematically understating the resources available.

In addition, our analysis implicitly assumes no permanent return to the country of origin among US immigrants, which is clearly unrealistic. Estimates of emigration among immigrants range from 15 to 30 percent (Borjas and Bratsberg 1996; Mayr and Peri 2008), and those rates vary by age at immigration, number of years spent in the United States, conditions in the country of origin, and eligibility for Social Security benefits. Remigration rates would be expected to decrease with number of years in the United States and increase with age at immigration (Duleep 1994). That pattern of return migration may mitigate some of the potential hardship among recent US immigrants. We find that those immigrants have lower levels of predicted and actual Social Security benefits, but returning to a home country with additional resources and lower cost-of-living expenses might make those benefits go farther.

Our interpretations of the results also do not account for totalization agreements, which are bilateral agreements between the United States and other countries that allow individuals' eligibility for Social Security benefits to be based on a combination of their work under the United States Social Security system and their work under the system of their home country (Barrick and Kestenbaum 2013). Currently, 24 countries have those agreements with the United States. Because most of the countries with totalization agreements are industrialized countries in Europe and Asia (including Japan and Korea), we would expect that the immigrants affected by those agreements have higher levels of human capital and income, relative to immigrants from countries without such agreements. Therefore, we might be underestimating the retirement resources at the upper end of the immigrant wealth distribution relative to the lower end.

That being said, our results suggest that the truth about immigrants' retirement security is, at a minimum, much more nuanced than the conventional wisdom regarding their preparation for retirement. Our results are consistent with a growing literature on immigrant effects on wages that highlights differences across immigrant groups. These findings suggest that immigrants might be more prepared for retirement than previously indicated in the literature, compensating for lower Social Security benefits with higher private savings. However, as with the distribution of retirement security among the native born, a sizable tail of the distribution is less well-prepared for retirement. That tail is primarily made up of recent immigrants, who, given the age restrictions in the HRS, must be those respondents who migrated to the United States at older ages. Further research is necessary to understand fully this segment of the population and to inform appropriate policies.

Notes

[1] See Borjas (1999), Blau and others (2003), and Duleep and Dowhan (2008) for a review of this literature.

[2] However, these calculations ignore the annuity value of Social Security in protecting individuals from outliving their savings.

[3] An estimated 11 million undocumented immigrants reside in the United States (Passel and Cohn 2010), and many of them participate in the labor force and contribute to Social Security. The Social Security Administration

estimated that taxes paid into Social Security by undocumented immigrants exceeded benefits paid out by $12 billion in 2007 (Goss and others 2013).

[4] Amuedo-Dorantes and Pozo (2002) also note intergenerational transfers with respect to precautionary savings.

[5] The PIA is calculated as the sum of three separate percentages of portions of the worker's average indexed monthly earnings. See http://www.socialsecurity.gov/oact/cola/piaformula.html for the calculation formula and other details.

[6] The HRS sample contains individuals at ages where the earnings profile is often thought to be flat or declining (see, for example, Lillard and Willis (1978), Hanoch and Honig (1985), Murphy and Welch (1990), and Johnson and Neumark (1996)). However, recent evidence suggests that the earnings profile continues to increase at older ages as long as individuals continue to work full time (Casanova 2012). Given the mixed evidence, we assume a flat earnings profile when performing these imputations. The Social Security Administration follows a similar approach when projecting individual retirement benefits in its Social Security statements, but with a flat nominal earnings profile.

[7] Calculations of average retirement age must deal with censoring, as some fraction of the sample will not yet have retired. However, regardless of sample used, immigrants appear to be retiring 1 year later on average than natives. Among respondents aged 75 or older in the 2004 HRS, the average retirement age was 64.18 for immigrants and 63.24 for natives.

[8] Working and reporting being retired are not mutually exclusive or exhaustive categories.

[9] Self-rated health is reported on a scale of 1 to 5, where 1 represents excellent health and 5 represents poor health.

[10] We do not include a control for income because it is clearly endogenously determined. However, adding controls for log income does not qualitatively change our results.

[11] Country of origin is available in the HRS as restricted data, but it is prohibited to link country of origin with Social Security's restricted earnings history data.

[12] The PIA is only estimated once for each respondent because it is based on one's earnings history.

[13] We have also estimated regressions where we control for number of years in the United States in a linear specification and where we allow for a nonlinear spline specification. Results are qualitatively similar and are available from the authors upon request.

[14] However, repeated cross-sectional analyses are also biased by differential return migration (Duleep and Dowhan 2002; Lubotsky 2007). Our analysis is not subject to that bias.

[15] The full set of estimates is available from the authors upon request.

[16] To simplify our calculations, we assume all couples claim benefits at the normal retirement age and that both partners live for 18 years after that.

[17] However, these calculations do not take into account the way in which the annuity provided by Social Security insures against risks associated with longevity, including outliving one's savings. Mitchell and others (1999) note that the standard life-cycle model implies that consumers should be willing to give up a sizable share of their total net worth (30 to 38 percent) to purchase an actuarially fair annuity at age 65. That could be particularly important for immigrants because they experience lower age-specific mortality than the native born (Sevak and Schmidt 2008). A full analysis would take into account differential longevity risks and a measure of annuity-equivalent wealth (see, for example, Gentry and Rothschild (2010)). This, however, is beyond the scope of the current article.

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