How do Immigrants Fare in Retirement?[⊗]

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Abstract

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Synopsis

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Abstract

The extensive literature documenting differences in wages between immigrants and US-born workers suggests immigrant households may enter retirement at a significant financial disadvantage relative to households headed by the native-born. However, little work has examined differences in retirement resources and retirement security between immigrant and native households. In this paper, we use data from the Health and Retirement Study, linked with restricted data from the Social Security Administration, to compare retirement resources between immigrant and native-born households. Our results suggest that while immigrants have lower levels of Social Security benefits than natives, they have higher levels of private net worth after controlling for education, age, race, and ethnicity. The estimated immigrant differentials vary a great deal by years in the US, with the most recent immigrants the least prepared for retirement.

How do Immigrants Fare in Retirement?

I. Introduction

An extensive literature in economics has documented that immigrants receive lower wages than US-born workers with similar characteristics.[1]   However, much less work has examined differences in retirement resources and retirement security between immigrant and native households. Gaps in wages could imply that immigrant households may enter retirement at a significant financial disadvantage relative to households headed by the native-born. Immigration has often been suggested as a way to at least temporarily improve the finances of a pay-as-you-go Social Security system (e.g. Lee and Miller, 2000; Stonesletten, 2000; Sand and Razin, 2006, Board of Trustees, 2010). This can be particularly effective in a system with many illegal immigrants who may pay Social Security taxes but never claim benefits (Schumacher-Matos, 2010). Understanding how these immigrants themselves fare when they reach retirement is an important consideration when evaluating the long-term costs and benefits of such policies. Given that Social Security is a social insurance program, it is important to understand the extent to which it differentially insures against old age for a large immigrant population.

In this paper, we use the Health and Retirement Study (HRS) to compare retirement resources between immigrant and native-born households. Most work on the wealth of immigrants nearing retirement ages is unable to examine the potential role of Social Security. This is an important omission, since Social Security benefits are the most important source of income for most retired American households. We use restricted-access data on earnings histories from the Social Security Administration, linked with the HRS, to estimate potential Social Security benefits for respondents who have not yet reached retirement age. We

supplement this with self-reported data on actual Social Security benefits for those 65 and older, as well as data on private pension coverage, home ownership and home equity, and total net worth. We document differences in retirement resources between immigrant and native households, and then explore the role of economic and demographic characteristics in explaining these differentials. Finally, we look at heterogeneity in retirement resources of immigrants based on their years in the United States.

We find that working-age immigrants have significantly lower predicted Social Security benefits than native households, and that immigrants over the age of 65 have significantly lower reported actual Social Security benefits. These differentials remain even after controlling for a number of socioeconomic characteristics such as education, self-reported health, and race and ethnicity. While immigrants at the median years in the US and below have significantly lower expected resources from Social Security than native households, this gap decreases with additional years in the US. 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 with higher private wealth accumulation. We find that while average private net worth is significantly lower for immigrants, once we control for differences in education, race, ethnicity, and other demographic characteristics, immigrant households have significantly *higher* net worth than similarly situated native-born households. Our back-of-the-envelope calculations suggest that at the median years in the US, immigrants in our sample have amassed sufficient private wealth to just offset their lower predicted Social Security Benefits. However, these calculations ignore the annuity value of Social Security in

insuring against longevity risk. In addition, for more recent immigrants, even higher levels of net worth are not enough to offset the lower levels of Social Security income. These findings add to a growing literature that documents a great deal of heterogeneity in economic well-being within the immigrant population. They also identify a particularly vulnerable group with respect to retirement security – recent immigrants nearing retirement.

II. Background

Households rely on two main types of resources during retirement – Social Security income and private wealth. There are a number of reasons why each of these might be expected to differ between immigrants and natives. First, earnings are a primary determinant of both Social Security benefits and private wealth. To the extent that there exist significant differences in earnings between immigrants and natives, these differences are likely to affect both categories of retirement resources.

A large literature in labor economics summarizes wages of immigrants in the United States, and compares them to wages in the native-born population.[2] In 1990, immigrants earned 16% less than natives, and "new" immigrants, those in the US less than five years, earned 38% less. In each case, 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 et al., 2012).

The early literature found evidence of "assimilation" effects on immigrant earnings – immigrants initially had lower earnings than natives, but their wages grew at a faster rate and eventually converged with those of natives (Chiswick, 1978; LaLonde and Topel, 1992).

However, in a single cross-section of data it is impossible to separate assimilation effects from differences across cohorts immigrating at different periods of time (Borjas, 1985). Evidence suggests that entry earnings of new immigrants have been declining across cohorts. Some have interpreted this 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 US (Duleep and Regets, 2002).

Repeated cross-sections can be used to separate out assimilation from cohort effects. However, even in repeated cross sections, differential patterns of return migration can bias measured immigrant assimilation effects (Duleep and Dowhan, 2002; Lubotsky, 2007). Recent work by Abramitzky et al. (2012) constructs a panel of male migrants around the turn of the twentieth century, and finds evidence that measured "assimilation" effects in a single cross-section are significantly reduced in repeated cross-sections, and almost entirely disappear in panel analysis. These results suggest a very important role for both differences in immigrant cohorts and selective return migration for this cohort – if those immigrants with lower earnings are more likely to return migrate, they are not observed in repeated cross-sections, making it appear as if there is more convergence than actually exists. However, longitudinal data on Social Security-covered earnings for entry cohorts 1960-1992 do show higher earnings growth for immigrants than the native born for almost all cohorts (Duleep and Dowhan, 2002).[3]

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, either because they have not worked in the

US for 40 quarters or because they have worked "off the books." In addition, since 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 covered earnings. Cohen and

Iams (2007) project Social Security benefits using a microsimulation model and data from the

Survey of Income and Program Participation (SIPP), and find that immigrants are less likely

to receive Social Security benefits.   Favreault and Nichols (2011) use SIPP data linked to

Social Security Administration records and find that immigrants have lower Social Security

benefits than natives, but that this is primarily driven by immigrants from less developed

countries. They also find that immigrants are much more likely to have made contributions

but not be eligible for benefits.

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, due to the fact that

they have fewer years of covered earnings (Gustman and Steinmeier, 2000). This is

confirmed by Favreault and Nichols (2011), who find that those that receive benefits are more

likely to receive high replacement rates. Furthermore, recent work by Borjas (2011) suggests

that immigrants who arrive in the US at older ages may have higher employment rates, in part

to accumulate the necessary work credits for Social Security, potentially offsetting some of

the immigrant disadvantage in covered quarters worked earlier in their lives.

Despite the fact that immigrants may have a shorter vesting period in Social Security,

their retirement well-being may still be adequate if they compensate for this in greater private

wealth accumulation. Conditional on earnings, private wealth accumulation could differ

across groups due to differences in savings rates (either due to preferences for savings or differential consumption and expenditure patterns), or due to differences in rates of return.

However, evidence suggests that immigrants have lower savings rates than natives (Carroll et al. 1994, 1999). These savings rates differ by country of origin, although these differences do not appear to be consistent with differences in national savings rates in those countries of origin (Carroll et al., 1999). In addition, there may be measurement issues associated with comparing savings rates between immigrants and 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 US) and they are more likely to expect their retirement years to be financed by income of other family members (Kamasaki and Arce, 2000). These transfers to family members can be viewed as a form of investment or risk pooling (see, for example, Rosenzweig, 1988; and Foster and Rosenzweig, 2001). Although they may be unobservable in standard data sets, for many households these intergenerational transfers may be a major component of retirement saving and planning.[4]

Furthermore, immigrants exhibit significantly different portfolio allocation than do natives, in ways that would also be expected to lead to differences in net worth. Osili and Paulson (2007) find 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. Evidence on Hispanic immigrants suggests they tend to save more for short-term goals such as education or a home purchase rather than retirement, and are extremely risk averse, placing greater importance on safety than rate of return on investments, relative to others (Kamasaki and Arce, 2000). Cobb-Clark and Hildebrand (2006a) find that immigrants hold a much higher proportion of their net worth in vehicles compared with financial or

housing assets. These differences in savings rates and portfolio allocation across immigrant groups contribute to a great deal of observed heterogeneity in net worth and retirement well-being (e.g., Cobb-Clark and Hildebrand (2006a); Favreault and Nichols (2011)).

Finally, even if immigrants do compensate for lower Social Security benefits by accumulating higher wealth, this may not take into account the way in which the annuity provided by Social Security insures against longevity risk. Yaari (1965) originally showed that full annuitization of wealth was optimal in certain cases, and Davidoff et al. (2005) show that this is true under much more general conditions. Mitchell et al. (1999) note that the standard life-cycle model implies that consumers should be willing to give up a sizeable share of their total net worth (30-38%) to purchase an actuarially fair annuity at age 65. This could be particularly important for immigrants, since they experience lower age-specific mortality than the native born (Sevak and Schmidt, 2008).

Our research adds to the literature on immigrants and wealth with a focus on retirement security. We use data from the Health and Retirement Study (HRS) linked to restricted-access administrative data from the Social Security Administration, allowing us to examine a broader set of resources available to immigrants at retirement. We examine immigrant-native differentials in Social Security benefits (both *expected* benefits or PIA for those ages 51-61, and *actual* reported Social Security income for those ages 65 and older). We also examine measures of private wealth accumulation, including private pension coverage, home ownership and home equity, and private net worth. We then explore whether these differentials can be explained by a number of socioeconomic factors and whether there is heterogeneity in their magnitude by years in the United States.

III.   Data and Methodology

To examine immigrant differences in retirement resources and retirement timing, we use data from the Health and Retirement Study (HRS). The HRS has interviewed panels of households every two years since 1992. In 1992, HRS interviewed individuals born between 1931 and 1941 (ages 51-61) and their spouses or partners. In 1998, additional birth cohorts were added to the HRS, making it a representative sample of US residents ages 51 and older. For most of our analyses, we use samples of households interviewed in 1998, 2000, 2002 or 2004. We exclude earlier years because they do not have a representative sample of households over age 65. We restrict our sample differently when examining expected Social Security benefits, because Social Security earnings histories are collected only for HRS respondents who were ages 51-61 when they were first interviewed in 1992 or 1998.

The HRS has a number of advantages for 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 a number 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 non-response and measurement error (Smith, 1995). It may be the case that respondents believe the surveyor wants an exact measure of their wealth and they provide a precise but inaccurate estimate of their wealth. It could also be the case that they find questions asking for a precise measure of their wealth too intrusive. As a result, the data in wealth modules of many surveys are viewed with skepticism. As described in detail in Smith (1995), the HRS survey design specifically tried to minimize these issues of bias, by including the use of unfolding brackets to obtain ranges of asset values when individuals refused to

report exact values or said they did not know the exact value. The HRS survey design significantly improves the response rates and therefore provides a more complete picture of wealth than other data sets.[5] Equally important is the fact that HRS can be merged to respondents' actual Social Security earnings histories through restricted access, making it possible to calculate 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. However our analysis unit in this paper is the household, rather than the individual. This is because the HRS, like most datasets, measures wealth at the household level.[6] We further limit our sample to married households to simplify the interpretation of our results by avoiding comparisons across single, divorced, and widowed households. We examine three major sources of retirement income – Social Security benefits, private pension coverage, and private wealth.

For Social Security benefits, we examine current Social Security income for respondents over age 65 and expected future Social Security income (PIA) for younger respondents. To calculate future eligibility and expected benefits, we merge HRS to administrative data on covered earnings from the Social Security Administration. The records, which are available for roughly 75 percent of the sample, report annual income (up to a yearly maximum) in sectors covered by Social Security for the years 1951-1991 for respondents born in 1931-1941 and for the years 1951-1999 for respondents born in 1942-1947. We use self-reported data in HRS for earnings beyond those years and we impute earnings into the future for individuals who have not yet turned 62 during the HRS period.[7] We apply the formulas used by Social Security to calculate eligibility and PIA. In reality, the

actual benefits are a function of the PIA but will vary based on the exact year and age of retirement, as well as on marital status. Because we want to compare benefits across individuals of different ages, holding constant marital status and actual retirement age, we use the PIA itself and apply SSA rules for individuals reaching age 62 in 2006.

We then examine differences in private pension coverage, as reported by respondents in the HRS. Finally, 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, IRAs, businesses, farms, balances in checking and savings accounts, CDs, automobiles, trusts and other assets, net of debts.

Approximately 2,220 HRS respondents, or roughly 10 percent of the sample, are foreign born. Figure 1 plots the distribution of immigrants by the number of years they have been in the US. The median years in the US is 30 (as is the mode). However, there is substantial variation across the sample. Some respondents immigrated as children, others in their working years, and others as seniors. Ten percent of the sample has been in the US for less than ten years and about fifteen percent of the sample has been in the US for over 50 years.[8]

Table 1 compares mean and median values of variables of interest between the US-born and foreign-born households in our HRS analysis sample.[9] We provide both means and medians given the well-known skewed distribution of wealth. For all indicators of financial well-being, immigrant households appear significantly worse than native born households. Immigrants ages 51-61 have a monthly PIA that is $316 lower than that of native-born respondents, and will therefore have significantly lower Social Security benefits upon retirement. Similarly, immigrants 65 and older have realized annual Social Security benefits

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that are $3,072 lower than natives. On average, immigrants also have significantly lower

private resources than the native-born population. They are ten percentage points less likely

to have private pension coverage and fourteen percentage points less likely to be

homeowners.   The net worth of immigrant households is almost $100,000 less than that of

native households. The one exception to these patterns is in the area of home equity --

conditional on home ownership, mean home equity of immigrants is significantly higher than

that of non-immigrants.   Interestingly, the median level of home equity is identical for both

groups. The higher mean for immigrants reflects fewer immigrant households that are

underwater in their mortgages rather than higher values of home equity on the right tail.

Table 2 provides summary statistics for our sample across other variables used in these

analyses. About 9.8 percent of the households are immigrants. Average age is similar for

immigrants and native-born respondents, due primarily to the age restrictions used to

determine the HRS sample. Immigrants are significantly more likely to be Hispanic, have

fewer years of schooling, more children, worse self-reported health,[10] and lower levels of

income than the native born. There are no differences between the immigrants and natives in

our sample in current work status, but native-born respondents are significantly more likely to

report being retired than immigrants.

To examine the extent to which these differences can be explained by differences in

education and other characteristics, we estimate a series of regressions for the different

measures of retirement resources. Our main regression specification is as follows:

$$Outcome_i = \alpha + \beta_1 Immigrant_i + X_i\gamma + \varepsilon_i \qquad (1)$$

where we regress our outcome measures on an indicator for whether the household head is an

immigrant. The X vector controls for a number of additional variables correlated with both

wealth and immigrant status. These include a quadratic in age, number of children, and self-reported health status.[11] We also include a control for years of education as a proxy for permanent income, which should matter for savings decisions. Regressions also include year fixed effects. For most regressions, standard errors are clustered at the household level, to account for the fact that we have multiple observations for households within our sample in those regressions.[12]

We then estimate a specification that adds controls for race and Hispanic ethnicity. We add these variables separately, since these characteristics are closely associated with country of origin among immigrants, and as described above, previous work has shown a significant amount of heterogeneity in immigrant outcomes depending on country of origin (e.g. Cobb-Clark and Hildebrand, 2006a; Duleep and Dowhan, 2008; Favreault and Nichols, 2011; Abramitzky et al., 2012). However, we are unable to control directly for country of origin in our analysis.[13]

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. We estimate the following specification where we include a quadratic in years in the US: [14]

$$Outcome_i = \alpha + \beta_1 Immigrant_i + \beta_2 YearsinUS_i + \beta_3 YearsinUS_i^2 + X_i\gamma + \varepsilon_i \quad (2)$$

As discussed above, there is some debate in the literature on how to interpret the estimated effect of years in the US on earnings.[15] Some have interpreted it 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 economic outcomes in the US. Repeated cross-sectional data allow a researcher to differentiate between assimilation effects and cohort of arrival effects, but that is not possible with the limited

number of cohorts currently included in the HRS.[16] Because wealth is a function of earnings, consumption, and savings over all prior years, the estimated difference by years in the US may reflect the effects of assimilation on earnings, consumption and savings in each successive year the immigrant has been in the US. However, it could also reflect differences in the characteristics of immigrant cohorts. To the extent that these 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 noted by Borjas (2011), it can be difficult to interpret the coefficients on a quadratic in years in the US. 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 US – 25th percentile, median, and 75th percentile. At each of these points, we do a Wald test to determine whether the immigrant wealth gap as evaluated at that point is statistically different from zero.

IV. Results

Differences in Social Security Benefits

Since 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. Table 1 showed that immigrants have significantly lower monthly PIAs, and therefore significantly lower expected Social Security benefits than do natives. Table 3 looks at these differences in a regression framework. Column 1 includes controls for age, education, self-rated health, and number of children. Estimated coefficients on these

variables are in the expected direction.[17] Each additional year of schooling is associated with a $31 increase in PIA. Self-rated health, which ranges from one for "excellent health" to five for "poor health" is also correlated with PIA, such that those in worse self- reported health have lower expected benefits. This is not surprising given the well-documented relationship between health and earnings (e.g. Smith, 1999). When these covariates are included, the estimated expected monthly benefit is $261 less for immigrants than for natives (compared with a raw gap of $316 without covariates as seen in Table 1). The magnitude of this differential remains large, given mean expected monthly Social Security benefits of approximately $1500 for native born households.   Column 2 adds controls for race and Hispanic ethnicity. The immigrant-native gap in PIA falls further in magnitude, but is still large and statistically significant.

We next examine how the immigrant-native differential in PIA varies by years in the US based on estimation of Equation (2), above. This regression includes all control variables found in Column 2, including race and ethnicity. We present this estimated differential evaluated at the 25th, 50th, and 75th percentiles of years in the US. These estimates suggest that the immigrant differential in PIA is negative and significant throughout a good part of the distribution in years in the US. Immigrants in the US for the 25th percentile number of years (19 years) have a PIA that is $293 lower than that of natives. At the median (26.5 years), the immigrant gap in PIA is much smaller, at $75, but still statistically significant. At the 75th percentile (35 years), the gap actually turns positive, but is not statistically different from zero. These results, illustrated graphically in Figure 2, suggest that while there are large and statistically significant differences in PIA between 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 above, this could be due to assimilation, or to changes in the characteristics of immigrant cohorts over time. [18]

Our PIA results suggest that immigrants nearing retirement are likely to have lower Social Security benefits than natives, even after controlling for a wide array of socioeconomic characteristics. One explanation for our findings is that due to their later arrival in the US, immigrants simply have fewer quarters of covered earnings. Another possibility is that they have the same number of quarters of covered earnings, but that these earnings are lower. Taking advantage of our restricted data, we re-estimate our PIA regressions controlling for the number of covered quarters. These results, in Column 4 of Table 3, show that controlling for quarters of covered earnings makes the overall immigrant coefficient no longer statistically different from zero. However there are striking differences by years in the US. After controlling for quarters of covered earnings, immigrants at the 25th percentile of years in US have a PIA that is $195 *higher* than that of natives, while those at the 50th (75th) percentile have PIAs that are $210 ($171) higher (all statistically significant at the one percent level). This implies the lower PIA found in the earlier regressions is completely explained by fewer quarters of covered earnings.   Furthermore, during quarters in which immigrants were working in covered employment in the US, their contributions to Social Security were higher, on average.

In results not presented here, we further examine the relationship between immigrant status, years in the US, and covered quarters. As would be expected, we find that immigrants have significantly fewer covered quarters. Those at the 25th percentile of years in the US (19 years in the US) have approximately 52 quarters fewer covered earnings (13 years). Those at the 50th percentile (26 years in US) have 30 quarters fewer covered earnings (7.5 years), and

those at the 75th percentile (35 years in US) have 13 quarters fewer (3+ years). This suggests that the lower PIA for immigrants is primarily due to fewer quarters of covered earnings in the US, and these fewer quarters of covered earnings are mostly explained by the fewer working years they've been in the US, as opposed to years in the US working in the uncovered sector.

Table 4 conducts the same exercise for actual, reported annual Social Security benefits for those 65 and older. The patterns are very similar to those for expected Social Security benefits presented in Table 3. The raw immigrant-native differential without control variables as presented in Table 1 was $3072. Adding a basic set of control variables reduces the differential by 26%, to $2260. The gap falls to $1370 once race and ethnicity are included. However, the remaining gap is still statistically significant and large in magnitude. When we evaluate the immigrant effect by years in the US, again, some significant heterogeneity emerges. The gap is negative and significant at the 25th percentile (29 years in the US), not statistically different from zero at the median, and positive and statistically significant at the 75th percentile.

Differences in Private Pension Coverage and Wealth

We next examine private pension coverage among immigrant and native workers. These regressions are run on the sample of HRS households where the head is under age 65 and currently working for pay.   As shown in Table 1, immigrants are 11 percentage points less likely than their native-born counterparts to report that they have a pension. Again, these differentials are large in magnitude, given a mean of pension coverage of 58%. Results in Columns 1 and 2 of Table 5 show that controlling for age, health, and education reduces the

gap in pension coverage to 4.2 percentage points but that additional controls for race and ethnicity have little effect on the gap. Results in Column 3 show that additional years in the United States reduce the immigrant gap in pension coverage. Immigrants in the US for the 25th percentile number of years were 9.9 percentage points less likely to report pension coverage, but by the median years in the US this has fallen by half. Immigrants in the US for the 75th percentile number of years no longer exhibit a statistically significant gap in private pension coverage.

Beginning in Table 6, we turn to measures of private wealth. Table 6 examines immigrant-native differentials in total net worth among all married households in the HRS. As was illustrated in Table 1, there is a large raw wealth differential between immigrants and natives in total net worth of almost $100,000. This differential is roughly 1/3 of the average level of net worth for married households in this age group.   However, adding controls for age, education, self-rated health, and the number of children (Column 1 in Table 6) completely eliminates the estimated immigrant-native gap in net worth. Adding controls for race and ethnicity in Column 2 leads to a positive and significant differential, where immigrants have net worth that is $34,465 *greater* than that of the native born. Together, these estimates suggest that the observed mean immigrant-native difference in wealth is due to underlying differences in demographics, education and family structure, and that within racial or ethnic groups, immigrant households have more wealth than those headed by the native-born. Regression results in Column 3 again show effects that vary significantly by length of time in the United States. Immigrants in the US for the 25th percentile number of years have net worth that is $13,331 higher than that of natives (but this difference is not

statistically different from zero). At the 50$^{\text{th}}$ and 75th percentile years in the US, the wealth premium among immigrants is large and statistically significant.

Table 7 moves on to examine the incidence of homeownership among immigrants versus natives. As noted in Table 1, married immigrant households are 14 percentage points less likely to report homeownership than natives. Controlling for our basic set of covariates in Column 1 reduces this differential to 11 percentage points, and including controls for race and ethnicity reduces it by an additional percentage point. As in the previous regressions, we again see evidence of assimilation effects. Immigrant households are 16.1 percentage points less likely to own a home at the 25$^{\text{th}}$ percentile years in the US, compared with 7.6 percentage points at the median and only 1.7 percentage points at the 75$^{\text{th}}$ percentile.

Table 8 looks at levels of home equity for those who are homeowners. Here, even the raw differential between immigrants and natives is positive and statistically significant, and the differential grows in magnitude with both the inclusion of covariates as well as with years in the US. One explanation for why immigrant home owners 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.

Given the higher levels of home equity for immigrants relative to natives (conditional on homeownership), one possibility is that the higher conditional levels of net worth we found 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 non-housing wealth (total net worth minus home equity). Throughout the distribution of years in the US, immigrants have higher non-housing wealth than natives, and the differential is roughly half that of total net worth. This

suggests that the immigrant advantage in private wealth (after controlling for a number of socioeconomic factors as well as race and ethnicity) shows up in both housing and non-housing wealth.

VI. 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 possible similar differences in retirement resources. In this paper we examine differences in the retirement resources of immigrants versus the native born. Our results suggest that pre-retirement 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 these 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 significantly less likely to have private pension coverage and that immigrants on average have lower private wealth than natives. However the gap in private wealth is entirely explained by differences in education, age, and self-reported health. Once we include additional controls for race and ethnicity, immigrant households have significantly *higher* net worth than similarly situated native-born households.

A logical next 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 do back-of-the-envelope post-estimation calculations to compare the net present value of future Social Security payments to private net worth for both immigrants and natives. Given the heterogeneity of immigrant effects based on years in the US, we do this comparison at the 25th, 50th, and 75th percentile of years in the US.

Among the sample of younger respondents (those ages 51 to 61), our analysis using the restricted Social Security earnings data suggests that immigrants in the US for fewer than the median number of years (26.5 years) have significantly lower expected Social Security benefits than natives. A comparison of the net present value of these benefits to the significantly higher levels of net worth amassed by immigrants in this age group relative to natives suggests that those in the US just over the median number of years have amassed private wealth sufficient to just offset their relatively (to natives) lower Social Security benefits. At the median number of years in the US, immigrants have private net worth that is approximately $16,000 higher than that of natives, while the present value of the Social Security benefits they would receive as a married couple are $19,000 lower than natives. [19] Immigrants in the US for fewer years have not accumulated enough private wealth relative to natives to offset their lower Social Security benefits.

Among those ages 65 and older, we do a similar comparison looking at reported Social Security benefits. For this group, at just over the 25th percentile of years in the US (30), the greater relative private wealth amassed by immigrants just offsets their lower Social Security benefits. Immigrants in the US for greater than 30 years have net worth that more than offsets their lower Social Security benefits, relative to natives. In addition, immigrants in the US for greater than 40 years have both higher Social Security benefits and private net worth, relative to natives. [20]

These results are subject to a number of caveats. First, with the single cohort available in the HRS, 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 heterogeneity in differences due to country of origin, which the existing literature suggests are quantitatively important. In addition, any patterns found in the Health and Retirement Study cohort may not be representative of differences in retirement security among future generations approaching retirement.

That 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 heterogeneity across immigrant groups. Our results suggest that throughout most of the distribution, immigrants might be more prepared for retirement than previously thought by the literature, compensating for lower Social Security benefits by higher private savings. However, as with the distribution of retirement security among the native-born, there is a sizeable tail of the distribution that is less well-prepared for retirement. Further research is necessary to fully understand this segment of the population, and to inform appropriate policies.

References

Abramitzky, Ran, Leah Platt Boustan, and Katherine Eriksson. 2012. "A Nation of Immigrants: Assimilation and Economic Outcomes in the Age of Mass Migration." NBER Working Paper 18011

Amuedo-Dorantes, Catalina and Susan Pozo. 2002. "Precautionary Savings by Young Immigrants and Young Natives." *Southern Economic Journal* 69(1): 48-71.

Blau, Francine D., Lawrence M. Kahn, Joan Y. Moriarty, and Andre P. Souza. 2003. "The Role of the Family in Immigrants' Labor-Market Activity: An Evaluation of Alternative Explanations: Comment." *The American Economic Review* 93(1):429-47.

Board of Trustees of the Federal Old-Age and Survivors Insurance and Disability Insurance [OASDI] Trust Funds. 2010. *2010 Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Disability Insurance Trust Funds*. Washington, DC.

Borjas, George J. 2011. "Social Security Eligibility and the Labor Supply of Older Immigrants*." Industrial and Labor Relations Review* 64(3), article 4.

Borjas, George J. 2002. "Homeownership in the Immigrant Population." *Journal of Urban Economics* 3(52): 448-76.

Borjas, George J. 1999. "The Economic Analysis of Immigration." *Handbook of Labor Economics*, vol. 3A, Orley Ashenfelter and David Card. North Holland.

Borjas, George J. 1992. "National Origin and the Skills of Immigrants," in George J. Borjas and Richard B. Freeman, Eds., *Immigration and the Work Force*. Chicago: The University of Chicago Press.

Borjas, George J. 1987. "Self Selection and Immigrants." *American Economic Review* 77: 531-553.

Borjas, George J. 1985. "Assimilation, Changes in Cohort Quality, and the Earnings of Immigrants." *Journal of Labor Economics* 3(4): 463-89.

Carroll, Christopher D., Byung-Kun Rhee, and Changyong Rhee. 1994. "Are There Cultural Effects on Saving? Some Cross-Sectional Evidence." *The Quarterly Journal of Economics* CIX(3):685-99.

———. 1999. "Does Cultural Origin Affect Saving Behavior? Evidence From Immigrants." *Economic Development and Cultural Change* 48(1):33-50.

Casanova, Maria. 2012. "Wage and Earnings Proles at Older Ages: Implications for the Estimation of Labor Supply Elasticities." UCLA Unpublished Draft.

Chiswick, Barry R. 1978. "The Effect of Americanization on the Earnings of Foreign-Born Men." *Journal of Political Economy* 86(5): 897-921.

Cobb-Clark, Deborah A. and Vincent A. Hildebrand. 2006a. "The Wealth and Asset Holdings of US-Born and Foreign Born Households." *Review of Income and Wealth*. 52(1): 17-42.

Cobb-Clark, Deborah A. and Vincent A. Hildebrand. 2006b. "The Wealth of Mexican Americans." *Journal of Human Resources* 41(4): 841-68.

Cohen, Lee and Howard Iams. 2007. "Income Adequacy and Social Security Differences Between the Foreign-Born and US-Born." *International Migration Review* 41(3): 553-578.

Davidoff, Thomas, Jeffrey Brown, and Peter Diamond. 2005. "Annuities and Individual Welfare." *American Economic Review* 95(5): 1573-1590.

Duleep, Harriet Orcutt and Daniel Dowhan. 2008. "Research on Immigrants' Earnings." *Social Security Bulletin* 68(1): 31-50.

Duleep, Harriet Orcutt and Daniel Dowhan. 2002. "Insights from Longitudinal Data on the Earnings Growth of U.S. Foreign-Born Men." *Demography* 39: 485–506.

Duleep, Harriet Orcutt and Mark Regets. 2002. "The Elusive Concept of Immigrant Quality: Evidence from 1970-1990." IZA Discussion Paper #631.

Favreault, Melissa M. and Austin Nichols. 2011. "Immigrant Diversity and Social Security: Recent Patterns and Future Prospects." Center for Retirement Research at Boston College Working Paper CRR 2011-8.

Foster, Andrew D. and Mark R. Rosenzweig. 2001. "Imperfect Commitment, Altruism, and the Family: Evidence from Transfer Behavior in Low-Income Rural Areas." *Review of Economics and Statistics* 83(3): 389-407.

Gentry, William M. and Casey G. Rothschild. 2010. "Enhancing Retirement Security Through the Tax Code: The Efficacy of Tax-Based Subsidies in Life Annuity Markets." *Journal of Pension Economics and Finance* 9(2): 185-218.

Gustman, Alan, and Thomas Steinmeier. 2000. "Social Security Benefits of Immigrants and US-Born." In George Borjas, editor, *Issues in the Economics of Immigration,* University of Chicago Press, pp. 309-350.

Honig, Marjorie and Giora Hanoch. 1985. "'True' Age Profiles of Earnings: Adjusting for Censoring and for Period and Cohort Effects." *Review of Economics and Statistics* 667) 3: 383-394.

Johnson, Richard and David Neumark. 1996. "Wage Declines Among Older Men." *Review of Economics and Statistics*: 740-48.

Kamasaki, Charles and Laura Arce. 2000. *Financial Services and Hispanic Americans*. Washington, D.C.: National Council of La Raza.

LaLonde, Robert J. and Robert H. Topel. 1992. "The Assimilation of Immigrants into the U.S. Labor Market." In: George J. Borjas and Richard B. Freeman, eds, *Immigration and the Work Force: Economic Consequences for the United States and Source Areas.* Chicago: University of Chicago Press, p 67-92.

Lee, Ronald and Tim Miller. 2000. " Immigration, Social Security, and Broader Fiscal Impacts." *American Economic Review* 90(2): 350-354.

Lillard, Lee A. and Robert J. Willis. 1978. "Dynamic Aspects of Earning Mobility," *Econometrica* 46(5): 985-1012.

Lubotsky, Darren. 2007. "Chutes or Ladders? A Longitudinal Analysis of Immigrant Earnings." *Journal of Political Economy* 115(5): 820-67.

Mitchell, Olivia S., James M. Poterba, Mark J. Warshawsky, and Jeffrey R. Brown. 1999. "New Evidence on the Money's Worth of Individual Annuities." *American Economic Review* 89(5): 1299-1318.

Murphy, Kevin M. and Finis Welch. 1990. "Empirical Age-Earnings Profiles." Journal of Labor Economics 8(2): 202-229.

Osili, Una Okonkwo and Anna Paulson. 2007. "Immigrants' Access to Financial Services and Asset Accumulation." National Poverty Center Working Paper.

Rosenzweig, Mark R. 1988. "Risk, Implicit Contracts, and the Family in Rural Areas of Low-income Countries." *Economic Journal* 98(393): 1148-70.

Sand, Edith and Assaf Razin. 2006. "Immigration and the Survival Of Social Security: A Political Economy Model." National Bureau of Economic Research Working Paper #12800.

Schumacher-Matos, Edward. 2010. "How Illegal Immigrants are Helping Social Security." *Washington Post*, September 3.

Sevak, Purvi and Lucie Schmidt. 2008. "Immigrant-Native Fertility and Mortality Differentials in the United States." Michigan Retirement Research Center WP 2008-181.

Smith, James P. 1999. "Healthy Bodies and Thick Wallets: The Dual Relation between Health and Economic Status." *Journal of Economic Perspectives.* 13(2): 145-66.

Smith, James. 1995. "Racial and Ethnic Earnings Differentials in Wealth in the HRS." *Journal of Human Resources* 30 (supplement) S158-183.

Storesletten, Kjetil. 2000. "Sustaining Fiscal Policy through Immigration", *Journal of Political Economy*, 108(2), 300-24.

Yaari, Menahem. 1965. "Uncertain Lifetime, Life Insurance, and the Theory of the Consumer." *Review of Economic Studies* 32: 137-150.

Figure 1: Distribution of Immigrants in the HRS, by Number of Years in US
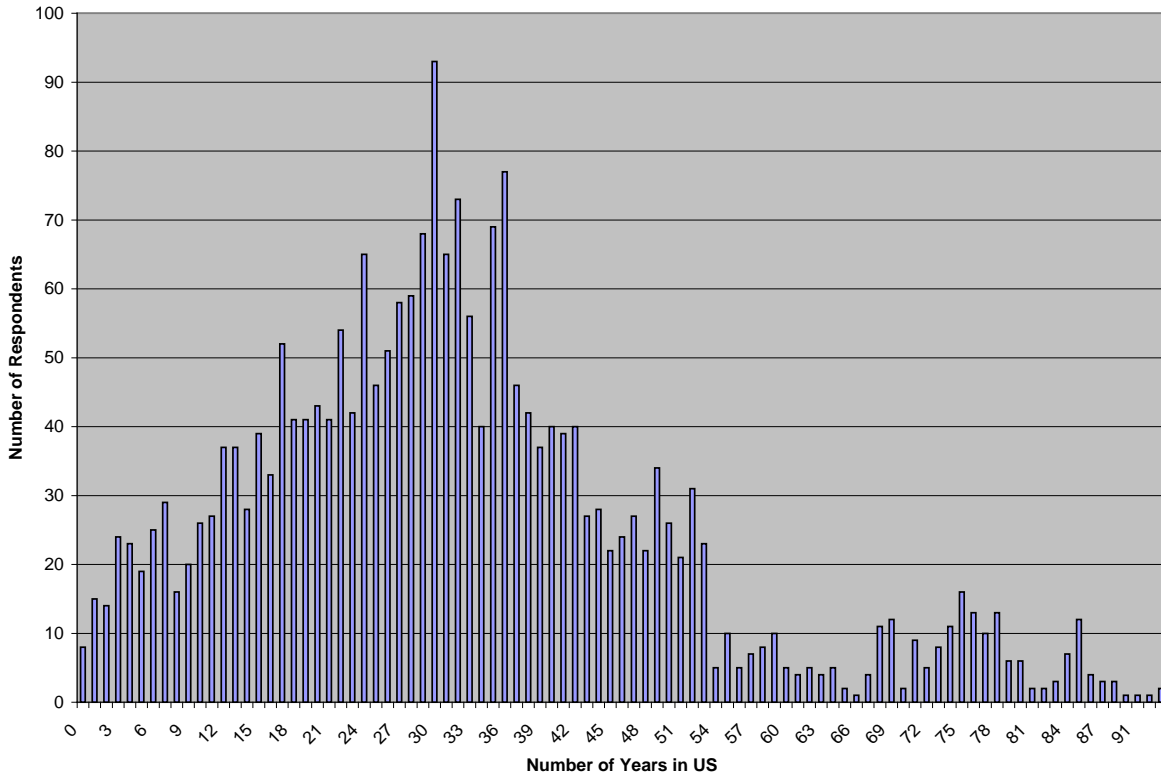
Note: Based on responses at the time of first interview, among respondents ever interviewed in HRS 1992-2004.

**Figure 2: Immigrant-Native Differentials in Social Security PIA,
by Years in the U.S.**

(1992 and 1998 married HRS men, ages 51-61)
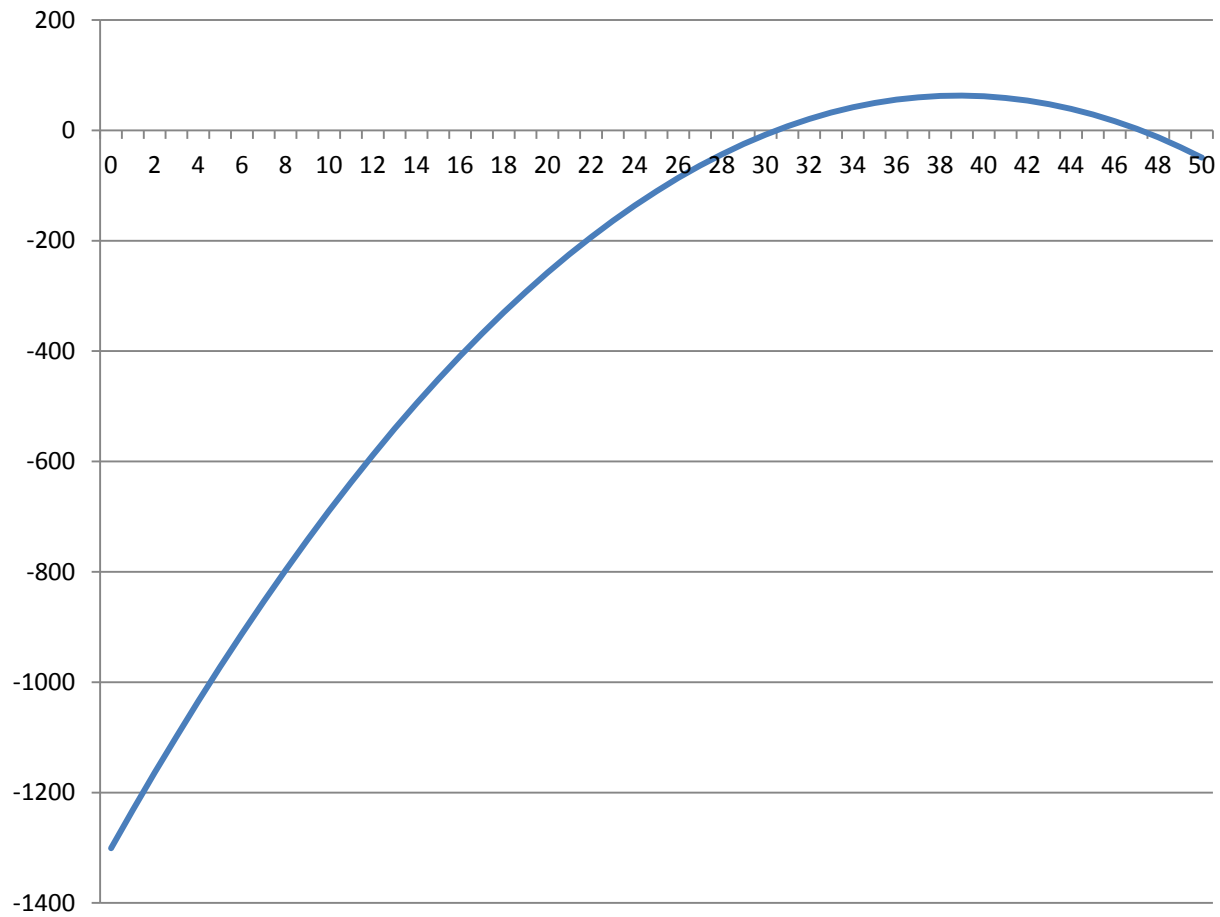
Table 1: Comparison of U.S. Born to Immigrants
Married HRS Households in Years 1998, 2000, 2002, and 2004 except where noted

Variable	Mean			Median		
	U.S. Born	Immigrants		U.S. Born	Immigrants	
Social Security PIA[1]	1,504	1,188	***	1,657	1,215	***
Actual annual SS benefits[2]	15,145	12,073	***	15,600	12,300	***
Pension coverage[3]	0.60	0.49	***			
Net worth	375,415	276,895	***	220,000	119,000	***
Is home owner	0.88	0.74	***			
Home equity[4]	137,680	143,200	*	100,000	100,000	

Notes: *** Means/medians are significantly different from one another at the 1% level, ** at the 5% level.

Financial variables are in 2006 dollars.

[1] Among married men ages 51-61 in 1992 or 1998.

[2] Among married men 65 and older.

[3] Among working men under age 65, 1998 & 2000

[4] Among home owners.

Table 2: Summary Statistics

Married HRS Households with Heads Ages 51+, 1998, 2000, 2002, and 2004

	Immigrants	Natives
Years in U.S.	37.11	
	(16.07)	
Age*	66.93	67.52
	(9.32)	(9.2)
Black*	0.08	0.10
Hispanic*	0.48	0.04
Years of schooling*	10.33	12.55
	(5.19)	(3.23)
Number of children*	3.71	3.38
	(2.41)	(2.1)
Self-reported health*	3.03	2.81
	(1.12)	(1.13)
Log income*	10.38	10.75
	(1.02)	(0.83)
Currently working	0.46	0.45
Retired*	0.48	0.58
Num. Observations	2,117	21,687

Notes: Financial variables are in 2006 dollars.

* Denotes means are significantly different from one another.

Table 3: Immigrant Effects on Expected Monthly Social Security Payment (PIA)

(among married male respondents ages 51-61 in 1992 or 1998)

	(1)		(2)		(3)		(4)	
Immigrant	-261.3	***	-211.2	***	-1,301	***	-56.17	
	(26.68)		(29.25)		(95.88)		(56.58)	
Black race			-211.3	***	-204.7	***	-82.30	***
			(24.15)		(23.59)		(13.49)	
Hispanic ethnicity			-162.0	***	-186.3	***	-70.44	***
			(33.20)		(32.57)		(18.56)	
Quarters of Covered Earnings							9.45	***
							(0.12)	
Immigrant effect evaluated at								
25th %ile of years in U.S.					-293.4	***	194.77	***
(19 Years)					(35.16)		(20.86)	
50th %ile of years in U.S.					-75.3	**	210.54	***
(26.5 Years)					(35.08)		(20.24)	
75th %ile of years in U.S.					48.9		171.41	***
(35 Years)					(35.14)		(20.02)	
Controls for Race/Ethinicity	No		Yes		Yes		Yes	
Assimilation Effects Included	No		No		Yes		Yes	
Controls for Quarters of Covered Earnings	No		No		No		Yes	
Num. Observations	3,185		3,178		3,175		3,175	
R-squared	0.157		0.180		0.221		0.749	

Notes: *** Significant at the1% level, ** at the 5% level, * at the 10% level.

Financial variables are in 2006 dollars. Regressions include dummy variables for year of interview,

and age, education, self-rated health and number of children.

Table 4: Immigrant Effects on Annual Social Security Income

(among married male respondents ages 65+, 1998-2004)

	(1)		(2)		(3)	
Immigrant	-2,260	***	-1,370	***	-15,414	***
	(306.1)		(343.2)		(1,053)	
Black race			-1,945	***	-1,806	***
			(274.3)		(270.1)	
Hispanic ethnicity			-2783.0	***	-2,468	***
			(364.1)		(348.5)	
Immigrant effect evaluated at						
25th %ile of years in U.S.					-2733.7	***
(29 Years)					(346)	
50th %ile of years in U.S.					-232.8	
(40 Years)					(373)	
75th %ile of years in U.S.					998.2	***
(51 Years)					(381)	
Controls for Race/Ethinicity	No		Yes		Yes	
Assimilation Effects Included	No		No		Yes	
Num. Observations	14,398		14,244		14,204	
R-squared	0.140		0.151		0.166	

Notes: *** Significant at the1% level, ** at the 5% level, * at the 10% level.

Financial variables are in 2006 dollars. Regressions include dummy variables for year of interview,

and age, education, self-rated health and number of children.

Table 5: Immigrant Effects on Pension Coverage

(among married male workers less than ages 65, 1998 & 2000)

	(1)		(2)		(3)	
Immigrant	-0.0421	*	-0.046	**	-0.282	
	(0.019)		(0.021)		(0.091)	
Black race			0.038	*	0.038	
			(0.0192)		(0.0193)	
Hispanic ethnicity			0.012		0.009	
			(0.0229)		(0.0230)	
Immigrant effect evaluated at						
25th %ile of years in U.S.					-0.099	**
(19 Years)					(0.027)	
50th %ile of years in U.S.					-0.052	**
(26.5 Years)					(0.026)	
75th %ile of years in U.S.					-0.017	
(35 Years)					(0.025)	
Controls for Race/Ethinicity	No		Yes		Yes	
Assimilation Effects Included	No		No		Yes	
Num. Observations	7,419		7,419		7,407	
R-squared	0.053		0.053		0.055	

Notes: *** Significant at the1% level, ** at the 5% level, * at the 10% level.

Financial variables are in 2006 dollars. Regressions include dummy variables for year of interview,

and age, education, self-rated health and number of children.

Table 6: Immigrants Effects on Net Worth

(among married households, with heads ages 51+, 1998-2004)

	(1)	(2)		(3)	
Immigrant	9,186	34,465	***	-227,002	***
	(9,466)	(10,367)		(41,466)	
Black race		-148,888	***	-146,288	***
		(9,087)		(9,104)	
Hispanic ethnicity		-91,951	***	-93,156	***
		(11,732)		(11,852)	
Immigrant effect evaluated at					
25th %ile of years in U.S.				13,331	
(26 Years)				(12523)	
50th %ile of years in U.S.				62,237	***
(36 Years)				(12313)	
75th %ile of years in U.S.				86,960	***
(46 Years)				(13171)	
Controls for Race/Ethinicity	No	Yes		Yes	
Assimilation Effects Included	No	No		Yes	
Num. Observations	23,858	23,858		23,804	
R-squared	0.148	0.158		0.159	

Notes: *** Significant at the1% level, ** at the 5% level, * at the 10% level.

Financial variables are in 2006 dollars. Regressions include dummy variables for year of interview,

and age, education, self-rated health and number of children.

Table 7: Immigrants Effects on Home Ownership

(among married households, with heads ages 51+, 1998-2004)

	(1)		(2)		(3)	
Immigrant	-0.113	***	-0.101	***	-0.513	***
	(0.007)		(0.008)		(0.032)	
Black race			-0.046	***	-0.041	***
			(0.007)		(0.007)	
Hispanic ethnicity			-0.041	***	-0.037	***
			(0.009)		(0.009)	
Immigrant effect evaluated at						
25th %ile of years in U.S.					-0.161	***
(26 Years)					(0.010)	
50th %ile of years in U.S.					-0.076	***
(36 Years)					(0.010)	
75th %ile of years in U.S.					-0.017	*
(46 Years)					(0.010)	
Controls for Race/Ethinicity	No		Yes		Yes	
Assimilation Effects Included	No		No		Yes	
Num. Observations	24,549		24,549		24,492	
R-squared	0.042		0.044		0.053	

Notes: *** Significant at the1% level, ** at the 5% level, * at the 10% level.

Financial variables are in 2006 dollars. Regressions include dummy variables for year of interview, and age, education, self-rated health and number of children.

(among married homeowner households, with heads ages 51+, 1998-2004)

	(1)		(2)		(3)	
Immigrant	27,465	***	30,012	***	-66,143	***
	(2,987)		(3,213)		(15,360)	
Black race			-35,105	***	-34,517	***
			(2,755)		(2,759)	
Hispanic ethnicity			-13,504	***	-14,322	***
			(3,612)		(3,640)	
Immigrant effect evaluated at						
25th %ile of years in U.S.					24,609	***
(26 Years)					(4112)	
50th %ile of years in U.S.					40,079	***
(36 Years)					(3773)	
75th %ile of years in U.S.					44,753	***
(46 Years)					(4090)	
Controls for Race/Ethinicity	No		Yes		No	
Assimilation Effects Included	No		No		Yes	
Num. Observations	20,783		20,783		20,746	
R-squared	0.135		0.141		0.143	

Notes: *** Significant at the1% level, ** at the 5% level, * at the 10% level.

Financial variables are in 2006 dollars. Regressions include dummy variables for year of interview,

and age, education, self-rated health and number of children.

Table 9: Immigrants Effects on Non-housing Wealth

(among married households, with heads ages 51+, 1998-2004)

	(1)	(2)		(3)	
Immigrant	-8,623	12,523		-138,363	***
	(7911)	(8685)		(34,526)	
Black race		-109,330	***	-107,809	***
		(7589)		(7606)	
Hispanic ethnicity		-73,768	***	-74,947	***
		(9803)		(9906)	
Immigrant effect evaluated at					
25th %ile of years in U.S.				810	
(26 Years)				(10,468)	
50th %ile of years in U.S.				29,203	**
(36 Years)				(10,312)	
75th %ile of years in U.S.				43,631	***
(46 Years)				(11,043)	
Controls for Race/Ethinicity	No	Yes		Yes	
Assimilation Effects Included	No	No		Yes	
Num. Observations	23,438	23,438		23,384	
R-squared	0.113	0.122		0.122	

Notes: *** Significant at the1% level, ** at the 5% level, * at the 10% level.

Financial variables are in 2006 dollars. Regressions include dummy variables for year of interview,

and age, education, self-rated health and number of children.

₁ However, a number of recent papers have pointed to a significant degree of heterogeneity in the immigrant-native wage gap across immigrant groups defined by a number of characteristics. See Section II for details.

[2] See Borjas (1999), Blau et al. (2003), and Duleep and Dowhan (2008) for reviews of this literature.

[3] The one exception is the cohort of immigrants who arrived between 1965-1969, immediately after the major 1965 change in immigration policy.

[4] This is also noted by Amuedo-Dorantes and Pozo (2002) with respect to precautionary savings.

[5] For example, ownership nonresponse rates on assets in the SIPP are twice that of other surveys. For stocks, conditional nonresponse rates were 9% in the HRS compared with 42% in the SIPP (Smith, 1995). Favreault and Nichols (2011) work with the SIPP, in which net worth data is missing for between 10-20% of the sample, depending on age and immigrant/native status.

[6] For variables that are measured at the individual level, including immigrant status, education and age, we use the characteristics of the male when observing a married household.

[7] The HRS sample is of the ages where the age earnings profile is often thought to be flat or declining (see, for example, Lillard and Willis (1978), Honig and Hanoch (1985), Murphy and Welch (1990) Johnson and Neumark (1996). However, recent evidence suggests increasing wages as long as individuals continue to work full time (Casanova, 2012). Given the mixed evidence, we assume a flat earnings profile when doing these imputations.

[8] These values differ slightly for our regression sample, which is limited to married households.

[9] The sample for each of these comparisons differs depending on the variable of interest. See footnotes in Table 1 for details.

[10] Self-rated health is reported on a scale of one to five, where one represents excellent health and five represents poor health.

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

[12] PIA is only estimated once for each respondent, since it is based on earnings histories.

[13] Country of origin is available in the HRS as restricted data, but it is prohibited to link country of origin with the restricted Social Security Administration Earnings Histories.

[14] We have also estimated regressions where we control for years in the US in a linear specification, and where we allow for a nonlinear spline specification. Results are qualitatively similar, and available from the authors.

[15] See Borjas (1999) for a detailed discussion.

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

[17] The full set of estimates is available upon request.

[19] 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.

[20] However, as noted above, these calculations do not take into account the annuity value of Social Security. A full analysis would take into account differential longevity risks and a measure of Annuity Equivalent Wealth (see Gentry and Rothschild, 2010). This is beyond the scope of the current paper.