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Articles

Perspectives

The Use of Longitudinal Data on Social Security Program Knowledge

by Laith Alattar, Matt Messel, David Rogofsky, and Mark A. Sarney*

The Social Security Administration (SSA) supplements a National Institute on Aging grant that funds a longitudinal Internet panel study to measure public knowledge about the Social Security programs. This article briefly reviews SSA's past efforts to gauge public knowledge of the programs, describes the Understanding America Study (UAS) panel used in the current effort, and presents results of wave 1 and wave 2 of the UAS surveys that focus on Social Security knowledge with detail by respondent age, education, and financial literacy level. Our findings indicate that younger workers with lower levels of education and financial literacy are logical targets for agency informational outreach and interventions.

Introduction

Many federal programs and services promote the health, safety, and economic security of the American public. Individuals must be knowledgeable about the programs and services offered to make the most use of them. Since the 1990s, the Social Security Administration (SSA) has regularly evaluated public knowledge of its retirement and disability programs. Most recently, the agency has funded a longitudinal study of program knowledge using the Understanding America Study (UAS). This longitudinal research may enable SSA to expand its understanding of the public's program knowledge in a number of ways. These include:

- The dynamics of program knowledge among individuals over the life course and between population subgroups (for example, by educational attainment).
- The tools people use to learn about Social Security programs.
- How interventions might increase public knowledge about Social Security, and how to measure their short- and long-term effectiveness.

In this article, we present results from the first two waves of the UAS survey on Social Security program knowledge. This research sheds light on how the level of program knowledge varies across the life cycle. We begin by documenting historical SSA efforts to gauge the public's program knowledge. We then provide an overview of the UAS, highlighting the opportunities offered by a longitudinal study of program knowledge. After presenting initial UAS results, we discuss SSA's possible next steps in using the longitudinal study to measure public knowledge and tailor effective communication efforts.

Literature Review

Along with pensions and private savings, Social Security forms the metaphorical three-legged stool of retirement security (DeWitt 1996). For many, Social Security is the primary source of retirement income (SSA 2016). Understanding whether one is eligible for Social Security benefits, when to claim those benefits, and how much income to expect from them affects work and savings decisions before retirement (Gustman and Steinmeier 1999; Rohwedder and van Soest

Selected Abbreviations

RCT	randomized controlled trial
SSA	Social Security Administration
UAS	Understanding America Study

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2006)—and those decisions in turn affect the level of income in retirement. Social Security program knowledge thus plays an important role in retirement security. For decades, SSA has worked to better inform the public about its retirement and disability programs.

Past Efforts

In 1995, SSA undertook the largest effort in its then-60-year history to inform the public about its retirement program by introducing the *Social Security Statement*. The annual *Statement* provides projected estimates of the monthly benefits that a worker will receive based on his or her earnings history and age at claiming, along with a summary explanation of the benefits.[1] SSA then commissioned the Gallup Organization to conduct a series of cross-sectional surveys between 1998 and 2001 to gauge public knowledge of the Social Security programs. These surveys widely expanded the agency's understanding of the public's program knowledge. For instance, Smith and Couch (2014) analyzed the Gallup surveys and found that many younger workers understood the basics of the retirement and disability programs but did not understand certain aspects such as how benefits are calculated.

The Gallup surveys also shed light on the effectiveness of the *Social Security Statement* in increasing program knowledge. Although the surveys were cross-sectional, different iterations took place before and after the *Statement* was introduced, providing researchers with a natural experiment to test changes in population-wide knowledge.[2] Cook, Jacobs, and Kim (2010) found evidence that the *Statement* increased program knowledge. Smith and Couch (2014) found that the *Statement* particularly improved knowledge among the population with low levels of education. Other researchers tested the effectiveness of the *Statement* using the Health and Retirement Study (HRS), which collects longitudinal data but provides limited measurement of program knowledge.[3] As in the Gallup-based studies, Mastrobuoni (2011) found that the *Statement* increased program knowledge. Conversely, Armour and Lovenheim (2016) found that some *Statement* recipients misunderstood the presentation of projected benefits. Biggs (2010) reported more ambiguous findings and suggested further research is needed to understand both the public's knowledge about Social Security and the effectiveness of the *Statement* in shaping that knowledge.

More recently, SSA further explored program knowledge using Internet panel studies. Funded by an SSA Retirement Research Consortium grant, Liebman and Luttmer (2015) conducted a randomized controlled trial (RCT) using a large Internet panel called Knowledge Networks (now known as the GfK KnowledgePanel) to see how an informational intervention might affect retirement behavior. They found that sending a brochure to persons aged 55–70 with information about the retirement earnings test (which applies to those who work after claiming benefits) increased employment by 4.2 percentage points. SSA also developed a program-knowledge survey as part of the American Life Panel (Greenwald and others 2010), which yielded substantial information about program knowledge.[4]

The UAS

In its latest effort, SSA is funding a program-knowledge survey as a component of the UAS, an Internet-based panel managed by the University of Southern California. The UAS panel is a representative sample of approximately 8,000 U.S. households.[5] Researchers use an address-based sample to recruit panel members. Tablet computers and Internet access are provided to participants who need them. Panel members may choose to participate in a number of surveys covering a wide range of topics, for which they receive nominal compensation. Researchers administer the Social Security program-knowledge survey on a rolling basis every 2 years. The protocol is to administer the survey to all new panel members or to any panel member who has not taken that survey for 2 years. Researchers use the Census Bureau's Current Population Survey Annual Social and Economic Supplement as the benchmark for weighting. The reference population for the UAS pool of respondents is the U.S. population aged 18 or older excluding military personnel and institutionalized individuals.[6]

The UAS offers a number of advantages for researching public knowledge of federal programs such as Social Security. For example:

- It provides a preconstructed nationally representative panel, which saves time and money in recruitment and retention.
- Because the UAS is Internet-based, researchers can receive survey results quickly, typically within a matter of months.
- Unlike other longitudinal studies, the UAS allows investigators to add survey questions or entire surveys to the Internet panel relatively easily.[7] Investigators may therefore use it to conduct RCTs.
- The UAS includes a wide array of surveys on numerous topics (for example, financial literacy, personality, and topics covered by Health and

Retirement Study modules), which are publicly available. Investigators may match these data to their own data sets to strengthen their studies.

In this study, we use the first two waves of the Social Security program-knowledge survey to extend previous research on how the public understands the programs. Wave 1 is designated by UAS as survey 16 (UAS 16) and wave 2 is designated as UAS 94. We address the following questions:

1. How knowledgeable is the population about basic aspects of Social Security?
2. Does populationwide knowledge change over time?
3. How does an individual's knowledge vary across the life course?
4. Within age groups, how does knowledge vary by individual characteristics such as education and financial literacy?

Methods

More than 5,000 UAS panel members completed the UAS 16 Social Security program-knowledge survey, providing an overall response rate of 85.4 percent of the total UAS panel. We restrict our sample to individuals aged 25–65 who completed both UAS 16 and UAS 94. At the time of analysis, we had access to complete second-wave data for one UAS sampling batch of 1,279 panel members.[8] Of the 929 participants who completed the first wave in 2015, 724 also completed the second wave in 2017 (a 77.9 percent follow-up response rate).[9] If the characteristics of panel members who completed both waves differ in meaningful ways from those of members who completed only the first wave, the measures of program knowledge may be biased. Table 1 compares the demographic characteristics of panel members who completed only the first survey wave with those

Table 1.
Weighted characteristics of UAS respondents (in percent) by survey-wave participation: 2015 and 2017

Characteristic	Wave 1 only	Both waves 1 and 2	Percentage-point difference
Respondents			
Number	205	724	. . .
Percent	22.1	77.9	. . .
Sex			
Men	47.2	50.2	-3.0
Women	52.8	49.8	3.0
Age			
25–35	29.3	18.9	10.4*
36–54	43.4	44.2	-0.8
55–65	27.3	36.9	-9.6
Education			
Less than high school diploma	10.4	8.1	2.3
High school diploma	34.5	29.9	4.6
Some college	23.7	24.2	-0.5
Bachelor's degree or higher	31.4	37.8	-6.4
Race/ethnicity			
White (non-Hispanic)	58.3	64.5	-6.2
Black (non-Hispanic)	14.9	15.9	-1.0
Other non-Hispanic	5.2	2.1	3.1
Hispanic or Latino	21.6	17.6	4.0
Marital status			
Married	54.9	63.1	-8.2
Other	45.1	36.9	8.2
Employment status			
Working	82.9	83.3	-0.4
Other	17.1	16.7	0.4
Mean annual income ($)	48,719	55,810	-7,091

SOURCE: UAS 16 and UAS 94; data on marital status and employment status are from UAS 1.

NOTES: Rounded components of percentage distributions do not necessarily sum to 100.0.

. . . = not applicable.

* = statistically significant at the 0.05 level.

who completed both waves. The demographic variables used in this analysis derive from UAS 1, which focused on cognitive abilities, financial literacy, and psychology. Only the age distribution of the groups differs significantly, in that younger panel members (aged 25–35) are less likely to have completed both waves.[10]

The program-knowledge survey covers respondents' understanding of Social Security program basics and of benefit-claiming age (and its effect on benefit amounts) in particular. In this study, we focus on knowledge of program basics in nine different subject areas. Box 1 shows the Social Security program aspects covered in the survey, the wording of the associated questions, the response options, and the correct responses.

We measure program knowledge among three age groups that correspond with the age ranges for which SSA provides different versions of the *Social Security Statement:* 25–35 (young workers), 36–54 (midcareer workers), and 55–65 (workers near retirement age). Within these age groups, we also investigate variation across two broad educational attainment categories (high school diploma or less and some college or more)[11] and two levels (high and low) of financial literacy as determined by a 14-item UAS assessment derived from questions developed by Lusardi and Mitchell (2017). Each of these variables derives from UAS 1. The financial literacy assessment tests respondents' knowledge of annuities, individual retirement accounts, and life insurance policies, among other topics. A score at or above the sample median indicates high financial literacy. We use descriptive statistics to present our findings.

Results

Table 2 shows relatively high levels of knowledge for many basic aspects of Social Security. For instance, more than 80 percent of respondents know of the availability of Social Security disability benefits, the adjustment of benefit amounts by claiming age, the option to wait after retirement to claim benefits, the funding of Social Security through payroll taxes, and the availability of benefits for the minor children of beneficiaries. Americans are less knowledgeable of some other aspects of Social Security, however. Relatively few individuals understand that Social Security benefits adjust with inflation and that spousal benefits may be available, including to a widow(er) with no children. Only one in five wave 1 respondents, when given a choice of answers, identified the way Social Security benefits are calculated.

Box 1.
Social Security program aspects and the specific survey questions that measure respondents' knowledge of them

Aspect	Question and answers
Age adjustment	*The amount of Social Security retirement benefits is not affected by the age at which someone starts claiming.* ☐ True ☑ False
Benefit calculation	*Which of the following best describes how a worker's Social Security benefits are calculated?* ☐ They are based on how long you work as well as your pay during the last five years that you are employed; ☑ They are based on the average of the highest 35 years of your earnings; ☐ They are based on how much Social Security taxes you paid; ☐ They are based on your income tax bracket when you claim benefits
Child survivor benefits	*If a worker who pays Social Security taxes dies, any of his/her children under age 18 may claim Social Security survivor benefits.* ☑ True ☐ False
Claiming upon retirement	*Social Security benefits have to be claimed as soon as someone retires.* ☐ True ☑ False
Disability benefits	*Workers who pay Social Security taxes are entitled to Social Security disability benefits if they become disabled and are no longer able to work.* ☑ True ☐ False
Inflation adjustment	*Social Security benefits are adjusted for inflation.* ☑ True ☐ False
Payroll tax	*Social Security is paid for by a tax placed on both workers and employers.* ☑ True ☐ False
Spousal benefits	*Someone who has never worked for pay may still be able to claim benefits if his or her spouse qualifies for Social Security.* ☑ True ☐ False
Widow(er) benefits	*If a worker who pays Social Security taxes dies, his/her spouse may claim Social Security survivor benefits only if they have children.* ☐ True ☑ False

SOURCE: UAS 16 and UAS 94 questionnaires.

NOTES: Some of the questionnaire's wording has been slightly modified for contextual clarity.

Correct answers indicated by ☑.

Table 2.
Levels of knowledge of selected Social Security program aspects in wave 1 (2015) and wave 2 (2017)

Aspect [a]	Percentage correct in—		Percentage-point change from wave 1 to wave 2
	Wave 1	Wave 2	
Disability benefits	88.1	93.5	5.4*
Age adjustment	84.2	91.7	7.5*
Claiming upon retirement	82.0	85.3	3.3
Payroll tax	81.4	85.7	4.3
Child survivor benefits	80.9	85.4	4.5
Spousal benefits	78.7	75.2	-3.5
Inflation adjustment	63.9	65.2	1.3
Widow(er) benefits	63.2	66.3	3.1
Benefit calculation	20.6	34.0	13.4*
Total	71.4	75.8	4.4*

SOURCE: Authors' calculations using UAS 16 and UAS 94 results.

NOTE: * = statistically significant at the 0.05 level.

a. See Box 1 for the survey question that measures knowledge of a given aspect.

For most Social Security program aspects, knowledge did not change significantly between survey waves. There were some notable exceptions, however. Knowledge of how benefits are calculated increased by 13.4 percentage points, knowledge of the age adjustment increased by 7.5 percentage points, and knowledge of the presence of disability benefits increased by 5.4 percentage points.

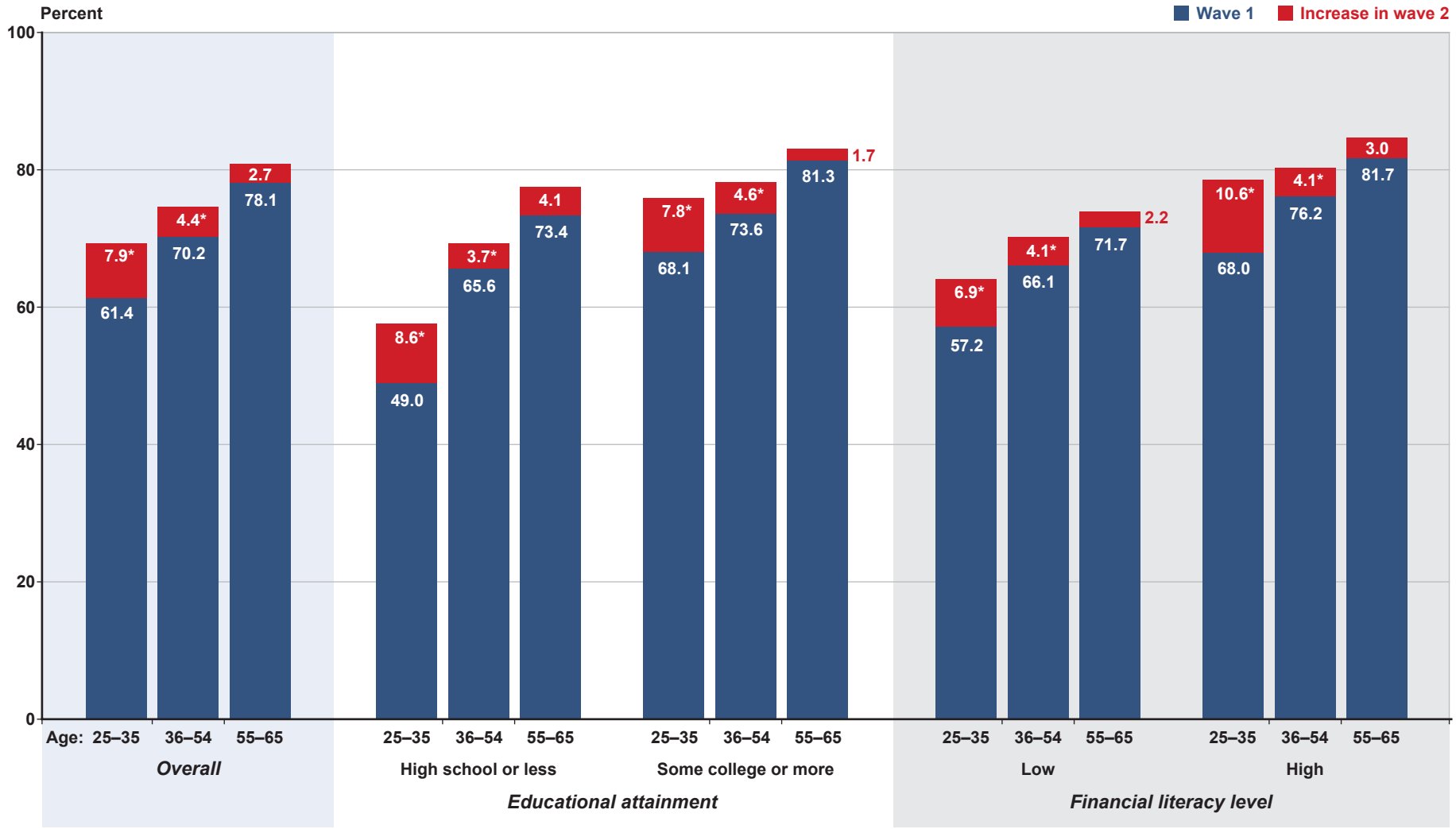
On average, respondents correctly answered 71.4 percent of all questions in wave 1 and 75.8 percent of all questions in wave 2. Chart 1 shows that individuals aged 25–35 had the lowest levels of knowledge in both waves 1 and 2, but exhibited a significant increase in knowledge between survey waves. The middle age group (36–54) also experienced a significant—although smaller—increase. Knowledge also increased, but not significantly so, among the group approaching retirement (ages 55–65).

Within age groups, knowledge levels varied by education and financial literacy. Chart 1 shows that individuals with higher educational attainment had higher levels of Social Security knowledge and Table 3 shows that the differences by educational attainment are significant for all age groups and survey waves except for individuals approaching retirement (ages 55–65) in wave 2. Increases in knowledge *between* survey waves, however, were similar regardless of education. Among the youngest group, knowledge increased substantially, both for individuals who attended college and for those who did not. Yet, the knowledge gap by educational attainment remains by wave 2. Only for the group approaching retirement (ages 55–65) did individuals with no college close the knowledge gap with their college-educated peers by more than 1 percentage point (although still not significantly).

Knowledge patterns by financial literacy largely mirrored those by education. With the exception of younger individuals (ages 25–35) in wave 1, differences by financial literacy were significant in all age groups. Increases in knowledge did not vary substantially by an individual's level of financial literacy. In no age group did those with less financial literacy close the knowledge gap between waves. For the youngest group (ages 25–35), the difference in knowledge was not significant in wave 1, but became significant by wave 2.

One possible explanation for the relatively strong growth in program knowledge among young adults is that they are first encountering basic aspects of Social Security (such as the availability of disability benefits or the funding of the program through a payroll tax) that are more widely known by older individuals. Individuals may tend to learn less widely understood program aspects (such as spousal benefits) later. Evidence for this theory is limited, however, as Table 4 suggests. The youngest age group (25–35) shows the smallest increase in knowledge of the least understood concept (the benefit calculation). On nearly every other program aspect, however, the younger individuals exhibit an increase in knowledge similar to or larger than that of the older age groups. In all cases, differences between age groups for individual survey items were statistically significant.

Chart 1.
Social Security program knowledge, by age group, educational attainment, and financial literacy level: Average percentage of correct answers in wave 1 (2015) and percentage-point increase in wave 2 (2017)



SOURCE: Authors' calculations using UAS 16 and UAS 94 results.

NOTE: * = statistically significant at the 0.05 level.

Table 3.
Changes within age groups in Social Security program knowledge, by survey wave, educational attainment, and financial literacy level (average percentage of correct responses overall): 2015 and 2017

Age group and wave	Total	Educational attainment			Financial literacy level		
		High school or less	Some college or more	Percentage-point difference	Low	High	Percentage-point difference
Ages 25–35							
Wave 1	61.4	49.0	68.1	19.1*	57.2	68.0	10.8
Wave 2	69.3	57.6	75.9	18.3*	64.1	78.6	14.5*
Percentage-point change	7.9*	8.6*	7.8*	. . .	6.9*	10.6*	. . .
Ages 36–54							
Wave 1	70.2	65.6	73.6	8.0*	66.1	76.2	10.1*
Wave 2	74.6	69.3	78.2	8.9*	70.2	80.3	10.1*
Percentage-point change	4.4*	3.7*	4.6*	. . .	4.1*	4.1*	. . .
Ages 55–65							
Wave 1	78.1	73.4	81.3	7.9*	71.7	81.7	10.0*
Wave 2	80.8	77.5	83.0	5.5	73.9	84.7	10.5*
Percentage-point change	2.7	4.1	1.7	. . .	2.2	3.0	. . .

SOURCE: Authors' calculations using UAS 16 and UAS 94 results.

NOTES: . . . = not applicable.

* = statistically significant at the 0.05 level.

Table 4.
Change in levels of knowledge of selected Social Security program aspects between wave 1 (2015) and wave 2 (2017), by age group (in percentage points)

Aspect [a]	Overall	25–35	36–54	55–65
Disability benefits	5.4*	10.8	3.9	4.6
Age adjustment	7.5*	6.1	8.5	6.8
Claiming upon retirement	3.3	12.4	2.7	-0.7
Payroll tax	4.3	6.7	4.5	3.5
Child survivor benefits	4.5	12.5	5.2	-0.8
Spousal benefits	-3.5	-2.4	-3.4	-5.2
Inflation adjustment	1.3	4.7	-2.7	3.9
Widow(er) benefits	3.1	8.8	6.2	-3.5
Benefit calculation	13.4*	10.3	13.1	15.1

SOURCE: Authors' calculations using UAS 16 and UAS 94 results.

NOTES: All differences between age groups are statistically significant at the 0.05 level.

* = statistically significant at the 0.05 level.

a. See Box 1 for the survey question that measures knowledge of a given aspect.

Discussion, Limitations, and Future Research

For more than two decades, SSA has worked to gauge public knowledge of its retirement and disability programs. Investing in the UAS' longitudinal survey of program knowledge is the most recent of these efforts.

Our study is the first attempt to use longitudinal program-knowledge data to build on existing research and provide improved insights on what people know and how that knowledge changes over time. We measure Social Security program knowledge at different time points and examine differences by age, educational attainment, and level of financial literacy. We find that, for example, knowledge increases most among young individuals (ages 25–35). This finding echoes research by Smith and Couch (2014), who emphasize the importance of targeting informational outreach efforts to younger workers.

Although knowledge about Social Security increases among young individuals of varying levels of educational attainment and financial literacy, their knowledge still lags significantly relative to that of older individuals. Our findings suggest that young individuals with no postsecondary education or low levels of financial literacy are potential targets for informational interventions. For such individuals, who are more likely to rely predominantly on Social Security benefits for their future retirement income, these interventions could prove particularly important.

Our study faces a number of limitations. One challenge is that testing itself may affect the statistical validity of the findings. That is, knowledge may increase simply because panel members complete the survey multiple times and not because of agency outreach or by comparatively organic means such as learning from employers, peers, or family members. However, because panel members do not receive the correct answers upon completing the survey and only take the survey every 2 years, the potential learning effect is minimal.

Another limitation is that this study does not identify the means by which respondents learned program aspects. Future research could identify which factors and processes drive knowledge gains.

The availability and use of longitudinal program-knowledge data from the UAS will continue to expand. Chard, Rogofsky, and Yoong (2017) used UAS data to develop a sophisticated measure of Social Security program knowledge and retirement preparedness, which researchers may use in future studies to measure changes in knowledge and preparedness over time. In addition, SSA researchers are conducting RCTs to evaluate the effectiveness of alternative communications to improve program knowledge—especially on topics for which knowledge has consistently been low, such as the retirement earnings test and the effects of choosing a retirement claiming age. The use of RCTs in combination with longitudinal survey data on program knowledge can guide agency efforts to better inform the public about its programs.

Notes

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[1] The *Statement* emphasizes that the benefit projections assume the continuation of the terms of the Social Security Act as currently amended and that future legislation can change those terms.

[2] Initial *Statement* mailings went only to recipients in targeted age groups. The agency phased in wider mailings over several years. Not until fiscal year 2000 did all adults aged 25 or older receive a *Statement.*

[3] To measure program knowledge in the HRS, researchers have generally tested whether an individual's expected Social Security benefit matches projections based on their earnings history. A reasonable alignment of expected and projected benefit amounts is deemed to signal a high level of program knowledge.

[4] Along with the Internet-based survey, the researchers conducted a parallel telephone survey.

[5] At the time of analysis, the UAS panel was a representative sample of approximately 6,000 U.S. households.

[6] For more information on the UAS, see Alattar, Messel, and Rogofsky (2018).

[7] Fielding a survey costs $3.00 per respondent per survey minute for the first 500 respondents, $2.50 for the next 500 respondents, and $2.00 for all additional respondents. Postproject services, including data delivery and documentation, cost an additional $2,000. Thus, a 15-minute survey administered to 1,000 respondents would cost approximately $43,250. More information on the pricing of survey administration is available at https://cesr.usc.edu/sites/files/UAS_Brochure.pdf.

[8] The UAS panel consists of 21 sampling batches. This article uses data from the ASDE 2014-01 Nationally Representative sample, the initial sampling batch. The program-knowledge surveys for subsequent batches in wave 2 either remain in the field or are yet to be administered. More information about each sampling batch is in the "Methodology: Response and Attrition" section of the UAS website (https://uasdata.usc.edu/index.php).

[9] Because wave 2 is still in the field, the final response rate should exceed 77.9 percent.

[10] We also find no significant differences by age in conjunction with other characteristics except that non-Hispanic black respondents aged 55–65 were more likely than members of other race/ethnicity groups in that age range to complete both survey waves (not shown). Because changes in program knowledge between waves did not vary by race/ethnicity, however, that difference should not bias the results.

[11] We used only these two broad categories because using additional categories would have raised sample-size concerns.

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Hispanics' Knowledge of Social Security: New Evidence

by Janice Peterson, Barbara A. Smith, and Qi Guan*

Research has shown that Hispanics are more likely to rely on Social Security benefits in retirement but are less knowledgeable about Social Security than other population groups. In this article, we examine gaps in what Hispanics know about Social Security to identify the kinds of information they most need to ensure their retirement security. Using data from a large Internet survey panel, we identify differences in Social Security knowledge between Hispanics and non-Hispanic whites. We extend findings from earlier focus group–based research suggesting that Social Security knowledge differs across Hispanic ancestry and primary-language groups and test the statistical significance of the findings. The results offer insights for further research and guidance for policy that aims to promote retirement security for U.S. Hispanics.

Introduction

There is growing concern about the adequacy of retirement planning and saving in the United States. Although many Americans may face economic insecurity in retirement (Government Accountability Office 2015; Rhee and Boivie 2015; Williams and Jackson 2015), studies suggest that certain demographic groups are at particular risk. Hispanics are one such group, facing challenges that include comparatively low-wage jobs, low levels of wealth, limited health insurance coverage, and longer life expectancy (Hopkins 2014). As a result, Hispanics are at greater risk than the general population of having low levels of retirement savings and, therefore, of relying on Social Security benefits as a major source of retirement income (Rabinovich, Peterson, and Smith 2017).

Because Hispanics are likely to rely on Social Security income in retirement, it is important that they be well-informed about program provisions. However, recent research has shown that Hispanics are less knowledgeable than other groups about Social Security (Yoong, Rabinovich, and Wah 2015; Rabinovich, Peterson, and Smith 2017). Increasing Hispanics' understanding of Social Security is important not only for individual Hispanics but also for the Social Security Administration (SSA) and for all organizations supporting the financial and retirement needs of Hispanics. Because Social Security benefits represent a substantial part of Hispanics' retirement income, adequate knowledge of the program and its benefits can support decisions that lead to a secure retirement. Research shows that providing information about Social Security benefits and other financial matters improves financial literacy and that higher levels of financial literacy are correlated with better financial decisions.[1]

This article updates and extends the findings of Rabinovich, Peterson, and Smith (2017), which explored these same topics using data from focus groups. By contrast, this article uses data from a large Internet survey panel to explore Hispanics' knowledge of aspects of Social Security both at the broad program

Selected Abbreviations

SSA	Social Security Administration
UAS	Understanding America Study

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level and at the narrower benefit-specific level. Our research makes important contributions to the study of Hispanics and Social Security by identifying and statistically testing differences in Social Security program- and benefits-level knowledge between non-Hispanic whites and Hispanics as well as among Hispanics across ancestry and primary-language groups. We also examine respondents' perceptions of their retirement preparedness and the helpfulness of different SSA information sources and delivery methods. Our findings should be of interest to researchers, financial advisors, and policymakers interested in improving retirement security for U.S. Hispanics. In this article, we use the term "Hispanic" to refer to any "person of Cuban, Mexican, Puerto Rican, South or Central American, or other Spanish culture or origin regardless of race," as defined by the Office of Management and Budget (Census Bureau 2018).

Characteristics of the U.S. Hispanic Population

According to the Census Bureau's *QuickFacts* interactive data feature (https://www.census.gov/quickfacts/fact/table/UAS#), Hispanics constitute the nation's largest minority group, at 18 percent of the population as of July 2018. That share is projected to increase to 27 percent by 2050 (Census Bureau 2014b, Table 11). In addition, the Hispanic population aged 65 or older is projected to quintuple from 2012 through 2050. By 2050, the share of Americans aged 65 or older who are Hispanic will exceed 18 percent (Hummer and Hayward 2015, 21). Consequently, the share of Hispanics among Social Security beneficiaries is expected to increase (Rabinovich, Peterson, and Smith 2017).

The Hispanic community is not homogeneous in terms of ancestry or language. According to studies by the Pew Research Center, about 62 percent of Hispanics in America are of Mexican ancestry, almost 10 percent are Puerto Rican, and Cubans and Salvadorans each constitute about 4 percent (Krogstad and Noe-Bustamante 2019).[2] Among Hispanic Social Security beneficiaries, the three largest ancestry groups are Mexicans, Puerto Ricans, and Cubans, accounting for 52 percent, 14 percent, and 10 percent, respectively (Martin 2007).

In addition to the cultural differences between Latin American places of origin, these U.S. Hispanic subgroups differ in terms of key demographic characteristics, such as age, educational attainment, and income. For example, in 2011, of the three largest subgroups, Mexicans had the youngest median age and Cubans had the oldest; Cubans were most likely to have at least a bachelor's degree, and Mexicans were least likely; and Cubans had the highest median income, and Puerto Ricans had the lowest (Lopez, Gonzalez-Barrera, and Cuddington 2013).

Language preference and proficiency also vary among U.S. Hispanics. According to the Pew Research Center, 36 percent are bilingual, 38 percent speak mainly Spanish, and 25 percent speak mainly English (Krogstad and Gonzalez-Barrera 2015). Further, language preferences vary substantially across first-, second-, and third-generation U.S. Hispanics. Among first-generation families, 61 percent consider Spanish their primary language; that figure falls to 8 percent among second-generation Hispanics and to 1 percent among the third generation (Taylor and others 2012, Chapter IV).

Hispanics tend to be socioeconomically disadvantaged relative to other racial/ethnic groups in the United States. Hispanic adults have the lowest rates of high school and college graduation, are more concentrated in low-wage jobs, and have lower incomes and health insurance coverage rates (Gassoumis, Wilber, and Torres-Gil 2008; Hummer and Hayward 2015). In 2013, the median wealth of a Hispanic family ($14,000) was only one-tenth the median wealth of a non-Hispanic white family ($134,000) (Boshara, Emmons, and Noeth 2015, 7–9).

Despite their socioeconomic disadvantages, Hispanics' life expectancy is greater than that of other population groups. Hispanic men aged 65 in 2014 can expect to live to age 85, versus 83 for non-Hispanic white men; Hispanic women aged 65 in 2014 can expect to live to age 87, versus 86 for non-Hispanic white women (Census Bureau 2014a, Table 2). Higher life expectancy places additional financial burdens on older Hispanics, which in the context of low incomes and lack of savings "predictably lead[s] to aggravated economic problems in old age" (Gassoumis, Wilber, and Torres-Gil 2008, 3), with clear implications for retirement income security.

Hispanics and Retirement Saving

Studies find that Hispanic workers are less likely than other workers to be covered by employer-sponsored retirement plans and Hispanic households are less likely than other households to have dedicated retirement savings (Rhee 2013). Prudential Research (2014) found that only 19 percent of surveyed Hispanics had

an individual retirement account (IRA), compared with 39 percent of the general population. In addition, 38 percent of Hispanics participated in a workplace-based retirement plan, such as a 401(k), 403(b), or 457, compared with 51 percent of the general population; and 16 percent of Hispanics had a workplace pension plan, compared with 23 percent of the general population. The National Council of La Raza (2015) found that Hispanics were more likely than other groups to work for an employer that did not offer a retirement plan.[3] That study also found that Hispanics who have access to retirement plans at work are less likely to participate in them than other groups are.

Studies on retirement preparedness suggest that Hispanics may place a lower priority on saving for retirement and that they engage less in retirement planning than other demographic groups, often because of competing near-term financial goals such as reducing debt or saving to send their children to college or to buy a home (Prudential Research 2014). Some analysts emphasize the importance of interpreting findings about Hispanics' financial priorities and goals in the contexts of economic realities and core cultural values. They advise observers to recognize that the importance of retirement planning is "a culturally derived concept" and that many Hispanics may "hold on to the value that retirement is a step in life where they will be supported by the children they raised with so much care" (Korzenny 2015).

Importance of Social Security to Hispanics

Social Security benefits constitute a significant proportion of retirement income for Hispanic individuals and households. Among Hispanic beneficiaries aged 65 or older in 2014, 42 percent of married couples and 59 percent of unmarried persons relied on Social Security for 90 percent or more of their income. By comparison, among non-Hispanic white beneficiaries aged 65 or older, 20 percent of married couples and 41 percent of unmarried persons relied on Social Security for 90 percent or more of their retirement income in 2014 (SSA 2016a, Table 9.A3).[4]

Social Security benefits are particularly important for Hispanics in large part because that group is less likely to receive retirement income from other sources such as employer-sponsored retirement plans, as noted earlier. Additionally, because Hispanics tend to have lower average lifetime earnings than do workers overall, they are helped by the progressive formula that determines an individual's Social Security benefit levels because it replaces a larger percentage of preretirement earnings for low earners than it does for high earners.[5] Further, with their longer life expectancy, Hispanics benefit from guaranteed Social Security income that is adjusted annually for inflation (SSA 2016b). Finally, unlike savings in other retirement plans, Social Security accruals cannot be diverted to other uses. This is important because supporting other members of multigenerational Hispanic families often competes with retirement saving as a financial priority (Prudential Research 2014).

Hispanics' Knowledge About Social Security

Studies such as Greenwald and others (2010) have found that many people do not know enough about the Social Security program to make informed retirement decisions. Previous research that noted disparities in Social Security knowledge across different racial/ethnic groups found Hispanics to be among those at the greatest disadvantage (Yoong, Rabinovich, and Wah 2015). Rabinovich, Peterson, and Smith (2017, Table 1), using Internet panel data, found that Hispanics were less knowledgeable than non-Hispanic whites about Social Security's retirement program and benefits. Using focus groups, that study examined differences in Social Security knowledge across Hispanic ancestry (Mexican, Puerto Rican, and Cuban) and primary-language (English and Spanish) groups. Although no clear pattern of differences emerged across the ancestry groups, English speakers were more knowledgeable than Spanish speakers about Social Security programs and benefits. Regardless of language and ancestry groups, focus-group participants were more knowledgeable about Social Security program-level aspects than about benefit-specific aspects (Rabinovich, Peterson, and Smith 2017). We update that study and contribute to the literature by using Internet panel data to see if differences across ancestry and language groups are statistically significant.

Conceptual Framework and Research Questions

Financial-literacy research shows that providing individuals with information about retirement issues can affect both their knowledge and their behavior. Lusardi and Mitchell (2014) emphasized the link between financial literacy and economic behavior, particularly in making retirement-related decisions. Allen and others (2016) demonstrated that workers who attend employer-provided retirement seminars increase their financial literacy and subsequently change their retirement plans.

Smith and Couch (2014) and Smith (2015) showed that workers who received SSA's annual benefits and earnings statement were more knowledgeable about Social Security programs and benefits than workers who did not. To improve Hispanics' knowledge of Social Security, policymakers and providers of financial and retirement advice will have to identify the types of Social Security information that Hispanics most need and the means by which they prefer to receive it.

With data from the 2017 Understanding America Study (UAS) Internet panel, we seek to extend previous research by determining whether differences in Social Security knowledge between Hispanics and non-Hispanic whites, and across Hispanic ancestry and language groups, are statistically significant. We also examine the Internet panel participants' perceptions of their retirement preparedness and the helpfulness of different SSA information sources and delivery methods, and assess the significance of any cross-subgroup differences.

Research Questions

- Are there significant differences in the perceptions of retirement readiness between Hispanics and non-Hispanic whites?
- What do Hispanics know about Social Security?
  - —Are there significant differences in Social Security knowledge between Hispanics and non-Hispanic whites? Across Hispanic ancestry and language groups?
  - —Are there significant differences between Social Security program-level knowledge and knowledge specific to Social Security benefits?
- Are there significant differences between Hispanics and non-Hispanic whites and across Hispanic ancestry and language subgroups in views of the helpfulness of information from SSA and the means by which SSA provides it?

Method

We examine the Internet panel participants' answers to three sets of questions. The first set addresses the perceived adequacy of the participants' own knowledge of financial issues related to retirement. The second set addresses participants' knowledge of selected aspects of Social Security programs and benefits. The third set addresses participants' perceptions of the helpfulness of SSA information and delivery strategies. We list the questions verbatim below; in the tables and in the discussion of our findings, we paraphrase the wording of some of the questions.

Questions on Perceived Adequacy of Own Knowledge

How knowledgeable do you feel about the following financial issues? Do you feel very knowledgeable, somewhat knowledgeable, not too knowledgeable, or not at all knowledgeable when it comes to…?

1. How inflation will affect your retirement
2. How much you will need to have saved to retire comfortably
3. How the Social Security system works
4. How long you might live in retirement
5. How to invest your retirement money
6. How to manage your spending in retirement

Questions on Social Security Programs and Benefits [with correct answers appended]

Program-level aspects. True or false:

1. Someone who has never worked for pay may still be able to claim benefits if one's spouse qualifies for Social Security. [true]
2. Social Security is paid for by a tax placed on both workers and employers. [true]
3. Workers who pay Social Security taxes are entitled to Social Security disability benefits if they become disabled and are no longer able to work. [true]
4. If a worker who pays Social Security taxes dies, any of his/her children under age 18 may claim Social Security survivor benefits. [true]

Benefit-level aspects. True or false:

1. Social Security benefits are not affected by the age at which someone starts claiming. [false]
2. Social Security benefits are adjusted for inflation. [true]
3. Social security benefits have to be claimed as soon as someone retires. [false]
4. Retired people who continue to earn income from working or investments may have to pay tax on their Social Security benefits. [true]

Questions on Helpfulness of SSA Information

Listed below are some ways the Social Security Administration could provide information to working Americans. Please indicate how helpful each of the

following would be to you: very helpful, somewhat helpful, not too helpful, or not at all helpful.

1. Provide written advice and material (via the website or mailed directly) on how to plan for retirement
2. Develop webinars or online video about how to plan for retirement or apply for Social Security benefits
3. Provide worksheets online or by mail to people when they turn age 60 to help them figure out how much they need to be able to afford to stop working or earn less money
4. Provide more information about the financial solvency of the Social Security system and the amount of money in the Social Security trust fund
5. Provide information via the website or statement about how much people can expect to be deducted from their Social Security retirement in order to pay for Medicare premiums
6. Provide a calculator on the Social Security website to help people estimate how much in taxes will be owed on their benefits after they start claiming, based on their expected assets and earnings at the time
7. Provide public-service announcements for television or radio on retirement planning issues

Data

We use data from the UAS, an ongoing Internet panel managed by the Center for Economic and Social Research at the University of Southern California. To establish the pool of respondents, the UAS uses postal codes to draw a nationwide random sample of individuals and invites them to join the study. Invited individuals then choose whether to participate in the study and, if so, whether to answer particular UAS surveys. The panel is recruited by means of address-based sampling. Because the UAS is an Internet panel, respondents answer the surveys wherever they are and whenever they wish to participate, using a computer, tablet, or smart phone. Tablets and broadband Internet are provided to anyone willing to participate but lacking a computer or Internet access. UAS surveys are administered in both English and Spanish.

The full UAS panel comprises adults nationwide aged 18 or older who respond to surveys once or twice a month. The UAS includes a number of different surveys on a variety of topics. Data from all the surveys in the UAS are linked so that a large amount of information is available about panel members. This information includes financial behavior and financial literacy, cognitive ability, personality traits, and knowledge of Social Security.[6]

We use 2017 results of the Social Security–related UAS survey 16 (UAS16), which focused on Social Security program and benefit knowledge and included questions on preferred means of receiving SSA information.[7] The 5,288 participants who had responded to the 2017 UAS16 survey at the time of our research included 4,245 non-Hispanic whites and 410 Hispanics, including 260 Mexicans, 37 Puerto Ricans, and 13 Cubans. We focus on those three groups because, as noted earlier, they are the three largest ancestry groups among Hispanic Social Security beneficiaries (Martin 2007). Of the Hispanic respondents indicating a primary language, there were 333 English speakers and 70 Spanish speakers. Table 1 provides descriptive statistics for our study sample.

Analysis and Discussion

Table 2 shows that non-Hispanic whites felt more knowledgeable than Hispanics about each of six retirement-related financial issues in 2017. Between 51 percent and 67 percent of non-Hispanic whites felt knowledgeable about these issues; for Hispanics, the percentages ranged from 35 percent to 50 percent. For each issue, the difference between the groups is statistically significant. Both groups felt least knowledgeable about how long they might live in retirement and how to invest their retirement money. Similarly, English-speaking Hispanics perceived themselves as more knowledgeable than Spanish-speaking Hispanics did, and for each issue, the difference in self-assessed knowledge is statistically significant.

Table 3 compares levels of knowledge about Social Security program- and benefit-level aspects between Hispanics and non-Hispanic whites and across Hispanic ancestry and language groups. For each aspect, knowledge is assessed as the percentage of respondents who correctly identify whether a statement is true or false. Large percentages of both non-Hispanic whites and Hispanics (ranging from 75 percent to 91 percent) knew the Social Security program aspects. Hispanics, however, scored much lower than non-Hispanic whites on the benefit-specific aspects. Although 78 percent of Hispanics knew that benefit amounts are affected by claiming age, the percentages with knowledge of the other benefit aspects ranged from 58 percent to 70 percent.

Table 1.
Study sample characteristics, by ethnicity, Hispanic ancestry, and primary language, 2017 (in percent)

Characteristic	Non-Hispanic white	Hispanic					
			Ancestry			Primary language	
		Overall [a]	Cuban	Mexican	Puerto Rican	English	Spanish
Number of respondents	4,245	410	13	260	37	333	70
Sex							
Men	45	37	46	37	39	37	37
Women	55	63	54	63	61	63	63
Age							
25–39	29	55	31	59	45	54	57
40–55	32	28	23	27	34	29	26
56–65	39	17	46	14	21	17	17
Education							
High school or less	25	32	38	36	10	27	54
Some college, no degree	23	28	8	27	39	30	14
Associate's or bachelor's degree	37	30	38	29	37	32	21
Graduate studies	15	10	15	7	13	10	10
Marital status							
Married	63	55	54	54	55	55	54
Divorced	16	15	23	14	16	16	11
Widowed	5	2	0	3	1	2	3
Never married	16	28	23	29	29	26	31
Employment status							
Employed							
Full-time	51	54	62	57	51	56	40
Part-time	12	14	15	15	5	13	19
Unemployed							
Looking for work	5	11	23	9	14	10	19
Not looking for work	6	8	0	9	8	8	13
Disabled	9	8	0	6	16	9	4
Retired	18	4	0	4	5	5	3

SOURCE: 2017 UAS16.

NOTE: Rounded components of percentage distributions do not necessarily sum to 100.

a. Includes members of ancestry and primary-language groups not shown.

Across the Hispanic ancestry and primary-language groups, there is greater knowledge of Social Security program-level aspects than of benefit-specific aspects. At least 75 percent of the respondents in each ancestry and language group knew that Social Security offers disability benefits and that children may qualify for survivor benefits, and the percentages who knew that the program is funded by payroll taxes, and that individuals who never worked can receive benefits if their spouses qualify, were nearly as high. The percentages of Mexicans and Puerto Ricans who knew each of the program aspects were almost identical. The percentages of English-speaking Hispanics who knew the program aspects equaled or exceeded those of Spanish speakers. Spanish speakers were least knowledgeable about whether individuals who never worked could get benefits and whether benefits are funded by a payroll tax, with correct-response rates of 60 percent and 67 percent, respectively.

The percentages of correct responses were much lower for the benefit aspects, in many cases 70 percent or less. Puerto Ricans were generally more knowledgeable of benefit aspects than Mexicans. The statement about whether benefits are adjusted for inflation had the lowest correct-response rate among all program and benefit aspects (58 percent for Mexicans and 68 percent for Puerto Ricans). Low percentages of both English and Spanish speakers knew that benefits

Table 2.
Respondents' perceived adequacy of own knowledge about selected financial aspects related to retirement, by ethnicity and Hispanics' primary language, 2017 (in percent)

Aspect	Ethnicity			Primary language (Hispanics)		
	Non-Hispanic white	Hispanic	Difference (percentage points)	English	Spanish	Difference (percentage points)
Number of respondents	4,245	410	. . .	333	70	. . .
Respondents who feel very or somewhat knowledgeable about—						
How inflation will affect their retirement	63	50	13***	52	38	14***
How much they will need to save to retire comfortably	61	47	14***	50	33	17***
How the Social Security system works	65	48	17***	51	34	17***
How long they might live in retirement	54	44	10***	46	31	15***
How to invest their retirement money	51	35	16***	37	25	12***
How to manage their spending in retirement	67	47	20***	50	31	19***

SOURCE: Authors' calculations using 2017 UAS16 results.

NOTES: . . . = not applicable.

*** = statistically significant at the p = 0.01 level.

Table 3.
Percentage of respondents who correctly identified true-or-false statements about Social Security programs and retirement benefits, by ethnicity and Hispanic ancestry and primary language, 2017

Statement and correct answer	Non-Hispanic white	Hispanic					
		Overall	Ancestry			Primary language	
			Cuban	Mexican	Puerto Rican	English	Spanish
Number of respondents	4,245	410	13	260	37	333	70
Program-level statements							
Individuals who never worked can get benefits if spouse qualifies (true)	83	76	77	74	73	79	60
Benefits are paid for by a tax on employers and workers (true)	87	75	69	74	76	76	67
Workers can be entitled to Disability Insurance (true)	91	85	77	85	84	85	85
Survivor benefits may go to children (true)	87	78	85	78	78	79	76
Average correct among all program statements	87	78	77	78	78	80	72
Benefit-level statements							
Benefit amounts are not affected by claiming age (false)	89	78	62	78	70	80	72
Benefits are adjusted for inflation (true)	65	58	69	58	68	57	58
Benefits must be claimed at retirement (false)	85	65	62	64	76	70	42
Retirement benefits may be subject to income tax if the beneficiary has work or investment income (true)	77	70	92	69	76	70	70
Average correct among all benefit statements	79	68	71	67	72	69	60

SOURCE: Authors' calculations using 2017 UAS16 results.

are adjusted for inflation (57 percent and 58 percent, respectively). Less than half of Spanish speakers (42 percent) knew that benefits do not have to be claimed at retirement from work.

Table 4 isolates the differences between pairs of ethnicity, ancestry, and language groups in the percentages shown in Table 3. Compared with Hispanics, significantly greater shares of non-Hispanic whites knew the various aspects of Social Security, particularly items relating to benefits; but nearly all of the differences across Hispanic ancestry and language groups were not significant. Notable exceptions were that English speakers were significantly more likely to know that individuals who never worked can get benefits as a spouse or survivor and that benefits do not need to be claimed at retirement.

We conducted sensitivity tests assuming that our samples of Puerto Ricans (37) and Cubans (13) were the same size as our sample of Mexicans (260) and that the sample of Spanish-speaking Hispanics (70) was the same size as our sample of English-speaking Hispanics (333). Assuming equal sample sizes, the differences between the Hispanic ancestry and language groups in knowledge of benefit aspects would all be significant. Assuming equal sample sizes also resulted in significant differences in program knowledge between the paired groups except for the pairing of Mexicans and Puerto Ricans. As the focus-group analysis found in Rabinovich, Peterson, and Smith (2017), no ancestry group was consistently higher or lower than the others in knowledge of the various program and benefit aspects. English-speaking Hispanics, however, were more knowledgeable about both program- and benefit-level aspects than were Spanish-speaking Hispanics.

All ethnicity and Hispanic ancestry and primary-language groups were more knowledgeable about program aspects than about benefit aspects (Table 5). The average percentages of correct responses were higher for the statements about the programs than for the statements about benefits, and the differences between those percentages were statistically significant for four of the seven groups we studied: non-Hispanic whites, Hispanics, Mexicans, and English-speaking Hispanics. The groups for which we found no statistically significant difference—Puerto Ricans, Cubans, and Spanish-speaking Hispanics—were the groups with the smallest number of respondents. If we assumed equal sample sizes for Spanish-speaking

Table 4.
Differences between ethnicity and Hispanic ancestry and primary-language groups in the percentages of respondents who correctly identified true-or-false statements about Social Security programs and retirement benefits, 2017 (in percentage points)

Statement and correct answer	Non-Hispanic white and Hispanic	Hispanic			
		Mexican and Cuban	Mexican and Puerto Rican	Puerto Rican and Cuban	English and Spanish
Program-level statements					
Individuals who never worked can get benefits if spouse qualifies (true)	7***	−3	1	−4	19***
Benefits are paid for by a tax on employers and workers (true)	12***	5	−2	7	9
Workers can be entitled to Disability Insurance (true)	6***	8	1	7	0
Survivor benefits may go to children (true)	9***	−7	0	−7	3
Average correct among all program statements	9***	1	0	1	8
Benefit-level statements					
Benefit amounts are not affected by claiming age (false)	11***	16	8	8	8
Benefits are adjusted for inflation (true)	7***	−11	−10	−1	−1
Benefits must be claimed at retirement (false)	20***	2	−12	14	28***
Retirement benefits may be subject to income tax if the beneficiary has work or investment income (true)	7***	−23**	−7	−16	0
Average correct among all benefit statements	11***	−4	−5	1	9

SOURCE: Authors' calculations using 2017 UAS16 results.

NOTES: Table shows the percentage points by which the first group's percentage of correct answers differs from the second group's.

** = statistically significant at the p = 0.02 level; *** = statistically significant at the p = 0.01 level.

Table 5.
Respondents' knowledge of Social Security program and retirement benefit aspects overall, by ethnicity and Hispanic ancestry and primary language, 2017 (in percent)

Subgroup	Number of respondents	Average correct responses about all— Program aspects	Benefit aspects	Difference (percentage points)
Ethnic origin				
Non-Hispanic white	4,245	87	79	8***
Hispanic	410	78	68	10***
Hispanic ancestry				
Mexican	260	78	67	11***
Puerto Rican	37	78	72	6
Cuban	13	77	71	6
Hispanic primary language				
English	333	80	69	11***
Spanish	70	72	60	12

SOURCE: Authors' calculations using 2017 UAS16 results.

NOTE: *** = statistically significant at the p = 0.01 level.

and English-speaking Hispanics, then the difference between program knowledge and benefits knowledge would also be significant for Spanish speakers. Assuming the same sample sizes for Cubans and Puerto Ricans as that of Mexicans did not affect the significance level.

Perceived Helpfulness of SSA Information Materials

Table 6 shows participants' views on the helpfulness of SSA information and the means by which they would prefer to receive it. There were no significant differences between Hispanics and non-Hispanic whites in perceived usefulness of written material on planning for retirement, worksheets for estimating their retirement income needs, an online calculator for estimating tax on Social Security benefits, and information on Social Security trust fund solvency. Hispanics were more interested than non-Hispanic whites in having SSA offer webinars or online videos about retirement planning and applying for Social Security benefits and in having SSA provide public-service announcements for television or radio on retirement planning issues. Non-Hispanic whites were more interested than Hispanics in having SSA provide information on how much will be deducted from their Social Security retirement benefits to pay their Medicare premiums. In all three cases, the differences are statistically significant. With few exceptions, 80 percent or more of the participants found these suggested ways of providing SSA information helpful. There were no significant differences between English-speaking and Spanish-speaking Hispanics in the perceived helpfulness and preferred means of receiving SSA information. Note that these questions were not asked of the full study sample; only respondents who were already retired or had exhibited knowledge of the program's purpose in a separate survey question (not covered in our analysis) were queried.

Conclusion

Using the UAS Internet panel, we extend and test the findings of previous research on what Hispanics know about Social Security and what kinds of information they most need to ensure their retirement security. Our research is one of the few attempts to look at differences in Social Security knowledge between Hispanics and non-Hispanic whites and among Hispanics across ancestry and primary-language groups; and ours is the first, as far as we are aware, to assess whether these differences are statistically significant. Such information is important for policymakers and program providers, as well as financial counselors, planners, and educators because of its implications for outreach to Hispanics.

We corroborate earlier research showing that Hispanics are less knowledgeable about Social Security than non-Hispanic whites. This suggests that useful outreach efforts, in addition to providing informational publications in Spanish as well as English, might include partnering with community-based language programs—both English-as-a-second-language and Spanish-language—to better inform Spanish-speaking Hispanics about Social Security benefits and programs. Other outreach efforts could identify minority-focused

Table 6.
Respondents' views on whether selected delivery modes and types of information from SSA would be "very" or "somewhat" helpful, by ethnicity and Hispanics' primary language, 2017 (in percent)

	Ethnicity			Primary language (Hispanics)		
Delivery mode and type	Non-Hispanic white	Hispanic	Difference (percentage points)	English	Spanish	Difference (percentage points)
Number of respondents	1,724	174	. . .	136	35	. . .
Website or mail						
Written retirement-planning guidance	90	87	3	88	86	2
Worksheets for estimating retirement-savings needs	85	83	2	82	85	−3
Guidance in estimating Medicare premium deduction from benefits	90	84	6*	85	83	2
Website only						
Online calculator for estimating prospective income tax on benefits	87	82	5	82	80	2
Webinars or online videos on retirement planning and applying for benefits	73	82	−9***	82	80	2
Radio or television						
Public-service announcements on retirement planning	63	75	−12***	75	74	1
Any/unspecified mode						
Information on financial solvency of the Social Security trust funds	80	82	−2	81	83	−2

SOURCE: Authors' calculations using 2017 UAS16 results.

NOTES: . . . = not applicable.

* = statistically significant at the p = 0.05 level; *** = statistically significant at the p = 0.01 level.

retirement planners and counselors and provide them with Social Security educational materials in Spanish.

Although the differences we observe across Hispanic ancestry and language groups are not statistically significant, Hispanics have significantly greater knowledge of Social Security program aspects than of Social Security benefit aspects. An individual who does not know certain facts about benefits—for example, that benefits are inflation-indexed and increase with delayed claiming—could make suboptimal benefit-claiming decisions, with consequences for retirement security. Earlier research noted a correlation between the type of information SSA provides in its publications and respondents' levels of benefit- and program-specific knowledge (Smith and Couch 2014). That study found that SSA provides program-specific information in most of its publications but is less likely to provide benefit-specific information, especially regarding inflation indexing. Our findings suggest that SSA outreach efforts should provide more detail on benefits and should not overemphasize program knowledge.

Our findings also suggest that financial educators can play an important role in improving Hispanics' knowledge of Social Security by providing details on Social Security benefits to complement agency-provided program information. Research on financial literacy suggests that providing Hispanics with information on Social Security benefits will affect their benefit-claiming decisions in particular and their retirement planning more generally.

We find that Hispanics' self-assessed knowledge of retirement-related financial issues is significantly lower than that of non-Hispanic whites. Hispanics feel less knowledgeable about how inflation affects retirement, how much to save for retirement, their longevity in retirement, how to invest their retirement money, and how to manage their spending in retirement. Financial counselors, planners, and educators are well suited to address these concerns. Spanish-speaking Hispanics feel even less knowledgeable than English-speaking Hispanics about retirement-related financial

issues, which points to the importance of providing information in Spanish.

Our research on the perceived usefulness of Social Security information and how it is provided finds that respondents rated material and tools found on the SSA website or mailed by the agency as more useful than webinars and online videos or public-service announcements. This was true for both Hispanics and non-Hispanic whites and for English- and Spanish-speaking Hispanics. Hispanics rated information provided by public-service announcements and by webinars or online videos significantly more useful than did non-Hispanic whites. Non-Hispanic whites rated the information provided on the Medicare premium significantly more useful than did Hispanics. Otherwise, there were no significant differences across Hispanics and non-Hispanic whites or across language groups. Taking these perceptions into consideration in the development of materials and outreach strategies might be useful in identifying when targeted or more general information will be most helpful and how best to provide this information.

Limitations and Future Directions

This study is limited by the small sample sizes for Cubans, Puerto Ricans, and Spanish-speaking Hispanics. Our sensitivity analyses suggested that larger sample sizes would increase the likelihood of finding significant differences in levels of program- and benefit-specific knowledge across the ancestry and language groups. Another limitation is that we did not use population weights. UAS panel members are randomly selected; however, once selected, members choose whether to participate in the individual surveys. Larger samples, and weighting to account for differential response rates across population groups, would benefit future work.

Although we did not find statistically significant differences in Social Security knowledge across Hispanic ancestry and language groups, factors such as socioeconomic status, education level, and immigrant/citizenship status might play a role in explaining these differences between non-Hispanic whites and Hispanics. These differences merit further exploration. For example, are low retirement savings and limited knowledge of Social Security characteristic of Hispanics at all socioeconomic levels? Given the predicted growth of the U.S. Hispanic population, further research should explore how best to make relevant information easily accessible to improve their retirement outcomes.

Notes

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[1] Lusardi and Mitchell (2014) provide a comprehensive overview of the link between financial literacy and economic behavior in general and retirement decisions in particular.

[2] At present, these are the four largest Hispanic-ancestry subgroups in the United States.

[3] The National Council of La Raza has since changed its name to UnidosUS.

[4] Census Bureau researchers have challenged the methodology with which the proportion of retirement income represented by Social Security benefits is estimated (Bee and Mitchell 2017). SSA is currently reexamining its data sources and methods.

[5] For individuals who claim benefits at their full retirement age, the benefit amount as a percentage of preretirement earnings—known as the replacement rate—is about 55 percent for low lifetime earners, about 40 percent for medium lifetime earners, and about 33 percent for high lifetime earners (Clingman, Burkhalter, and Chaplain 2019, Table C).

[6] For more information on the UAS, see Alattar, Messel, and Rogofsky (2018) and https://uasdata.usc.edu/index.php.

[7] Another UAS survey, UAS26, focuses exclusively on perceived adequacy and preferred channels of SSA information. However, we use a subset of SSA-information questions in UAS16 to be able to compare results between groups within a single pool of respondents.

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The Comprehensive Wealth of Older Immigrants and Natives

by David Love and Lucie Schmidt*

Research has pointed to notable differences between immigrants and the native-born in individual components of retirement resources. To compare the retirement preparation of older immigrants and natives, we calculate measures of comprehensive available resources and an annualized equivalent of comprehensive resources. We document large immigrant-native differences in median profiles of annualized wealth. We also examine how annualized wealth varies by immigrant arrival cohort and find that recent waves of immigrants are poorly situated. Finally, we use regression analysis to estimate the extent to which immigrant-native gaps in retirement resources are attributable either to differences in observable characteristics or to differences in returns to those characteristics.

Introduction

The 1965 Immigration and Nationality Act replaced a national-origins quota system with one based on family ties and skilled labor demand. The law had a profound effect on the provenance of immigrants arriving in the United States.[1] The foreign-born share of the population changed, as did the demographic and skill composition of immigrants across arrival cohorts. Numerous studies[2] have examined the relative earnings of immigrants and natives.[3] However, wealth accumulation and retirement preparation among immigrants have not been widely examined. Understanding more about the retirement resources of immigrants is important for at least two reasons. First, immigrants are projected to become a much larger share of the aged population in the near future, doubling from 10 percent to 20 percent between 2005 and 2050 (Passel and Cohn 2008), which underscores their increasing influence on populationwide retirement wealth. Second, the initial waves of post-1965 immigrants are now reaching retirement age, and they differ substantially from previous waves in terms of countries of origin, earnings histories, and wealth.

The retirement resources of immigrants and natives differ in notable ways. Immigrants tend to have lower net worth (Cobb-Clark and Hildebrand 2006; Favreault and Nichols 2011), lower Social Security benefits (Cohen and Iams 2007; Favreault and Nichols 2011; Sevak and Schmidt 2014), and lower rates of private pension coverage (Osili and Paulson 2009; Heim, Lurie, and Ramnath 2012). Among homeowners, immigrants also tend to have higher home equity than natives (Chatterjee and Zahirovic-Herbert 2011; Sevak and Schmidt 2014).[4] Taken together, these studies shed light on each of the major components—financial, nonfinancial, and annuitized—of retirement resources. However, analyses of immigrant wealth have not yet examined

Selected Abbreviations

COLA	cost-of-living adjustment
HRS	Health and Retirement Study
OLS	ordinary least square
SSA	Social Security Administration

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the contribution of all of the components to a comprehensive wealth balance sheet.

This article is the first to examine how retirement resources differ between natives and immigrants using a broad measure of wealth that includes the present value of expected pension and Social Security benefits, which for many households finance the bulk of retirement spending (Gustman and Steinmeier 1999; Gustman, Steinmeier, and Tabatabai 2010). The comprehensive balance sheet provides insights into immigrant-native differences in retirement preparation that are not available through standard measures of net worth alone. For example, the present-value measures of future pensions and Social Security are likely to differ substantially between recently arrived immigrants and natives of similar ages because pension formulas depend on years of service and Social Security benefits are a function of lifetime covered earnings. We calculate the measures of comprehensive wealth for immigrants and natives using data from the 1998–2012 waves of the Health and Retirement Study (HRS). We find that immigrants have significantly lower levels of comprehensive wealth, but that there is a great deal of heterogeneity within the immigrant population, particularly along the dimension of year of U.S. arrival. More recent waves of immigrants have substantially less wealth in all forms (financial, nonfinancial, and annuitized) than natives and earlier waves of immigrants alike.

We also calculate an annualized equivalent of comprehensive wealth and examine median profiles of annualized comprehensive wealth to simulate potential income streams over the retirement period. Our method for constructing both the comprehensive wealth measure and its annualized equivalent closely follows that of Love, Smith, and McNair (2008) and Love, Palumbo, and Smith (2009). For a household headed by an individual of a given age, the annualized measure is equivalent to the income derived from a real, joint-life annuity purchased with the full value of comprehensive wealth. The income provided by that annuity is our measure of annualized wealth, which serves as a rough measure of potential consumption in each remaining year of life. In contrast with comprehensive wealth, which does not account for the age or composition of households, annualized wealth provides trajectories that indicate whether households draw down resources faster or slower than a simple lifecycle model would predict. Previous research found that annualized comprehensive wealth rises with age, suggesting slower drawdown (Love, Palumbo, and Smith 2009). However, when we apply this approach to an analysis of immigrant-native differentials, we find that annualized comprehensive wealth rises faster for immigrants than for natives, which implies that immigrants spend down retirement resources more slowly than does the overall population.

Additionally, we estimate descriptive median regressions of annualized wealth, both to see whether observable characteristics can explain immigrant-native gaps and to examine the extent of convergence in annualized resources across different immigrant arrival cohorts. Working through regression specifications that include controls for demographic characteristics, lifecycle factors, transfers to and from family members, and immigrant country of origin and race/ethnicity, we find that recent immigrant cohorts show lower levels of annualized wealth, even after we control for an extensive set of observable characteristics. Finally, we decompose the immigrant-native differences in annualized wealth into the effects that can be explained by differences in observable characteristics and the effects that are attributable to differences in the "returns" to those observable characteristics.[5] We find that the gap between the most recent wave of immigrants and natives is about three-fourths attributable to characteristics and about one-fourth attributable to returns.

Our results suggest that recent waves of immigrants tend to reach retirement with substantially lower resources than do immigrants who arrived before the 1965 immigration act. The HRS data now contain the first waves of post-1965 immigrants to reach retirement age, and our results may thus serve as a bellwether for the retirement preparation of future immigrants. From a public policy perspective, a widespread shortfall in retirement resources raises important questions for social insurance programs,[6] including questions about Social Security rules that may disadvantage immigrants with fewer quarters of covered earnings (Sevak and Schmidt 2014). Understanding more about immigrant wealth is therefore important from the perspectives of both welfare economics and public policy.

Background

An extensive literature has investigated the relative earnings of immigrants and natives and the convergence of those groups' relative earnings over time. The literature points to the importance of arrival cohort and country of origin for retirement outcomes. In this section, we discuss possible reasons why the retirement resources of immigrants and natives might differ, even after controlling for lifetime earnings.

Immigrants and Social Security

Because Social Security rules link benefit levels to lifetime covered earnings, immigrants are likely to receive lower benefits than the native-born. Eligibility for retirement benefits requires a worker to accrue 40 quarters of coverage by meeting earnings thresholds over a minimum of 10 years. Many immigrants have insufficient quarters of covered earnings (or of reported earnings) to qualify. Empirical evidence largely confirms that projected and actual Social Security benefits are lower for immigrants than for natives, even after controlling for an extensive array of health and socioeconomic characteristics. Cohen and Iams (2007) used a microsimulation model to predict that the foreign-born will be significantly less likely to receive Social Security benefits. Favreault and Nichols (2011) linked Survey of Income and Program Participation data to administrative Social Security records and found that immigrants have lower Social Security benefits than natives. They also found that immigrants are much more likely to have made Social Security payroll-tax contributions but not be eligible for benefits. Sevak and Schmidt (2014) used HRS data linked to Social Security earnings records to show that immigrants have significantly lower predicted Social Security benefits, but that this gap is strongly related to years in the United States and is entirely explained by differences in quarters of covered earnings.

Immigrants and Private Wealth

Despite lower Social Security benefits, immigrants may adequately prepare for retirement if they amass sufficient private wealth to compensate. Immigrants are a heterogeneous population; but on average, that compensation does not appear to occur. Relative to natives, immigrants have lower saving rates (Carroll, Rhee, and Rhee 1994; 1999), significant differences in portfolio allocations (Cobb-Clark and Hildebrand 2006; Osili and Paulson 2009), and lower levels of net worth and projected retirement well-being (Cobb-Clark and Hildebrand 2006; Favreault and Nichols 2011; Sevak and Schmidt 2014). In addition, immigrants have lower levels of private pension coverage than natives (Osili and Paulson 2009; Heim, Lurie, and Ramnath 2012; Sevak and Schmidt 2014). Heim, Lurie, and Ramnath found that the participation gap is primarily due to immigrants being less likely to work for firms that offer pension plans, rather than differential take-up rates.

Housing may be particularly important when considering immigrant-native differentials, given the significance of homeownership to immigrants as a symbol of assimilation (Anacker 2013). Research shows that immigrants are significantly less likely to own homes than natives (Borjas 2002; Cobb-Clark and Hildebrand 2006; Sevak and Schmidt 2014). However, among homeowners, immigrants have higher levels of home equity, even *before* controlling for observable characteristics (Chatterjee and Zahirovic-Herbert 2011; Sevak and Schmidt 2014). Drew (2002) 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 that, as a result, immigrants made larger down payments and held more home equity. This is in part due to the concentration of immigrants in areas with high housing costs such as California and New York. Similarly, Borjas (2002) found that observable demographic characteristics do not explain much of the homeownership gap between immigrants and natives, but that geographic locations play a role.

Data

We examine immigrant and native retirement resources for households with respondents aged 51 or older using data from eight waves of the HRS, spanning 1998–2012.[7] For studies of comprehensive wealth, the HRS has several advantages over other national surveys. As described in detail in Smith (1995), the HRS questionnaire was specifically designed to minimize bias in measures of wealth by using an unfolding-brackets methodology.[8] Consequently, the HRS provides a more complete picture of private wealth than most other data sets do. The HRS results closely match the wealth distribution derived from the cross-sectional Survey of Consumer Finances (SCF) except for the top 1 percent, for which the HRS underreports wealth relative to the SCF (Sierminska, Michaud, and Rohwedder 2008). However, because we focus on the financial behavior of the median household, the discrepancy in the top 1 percent of the wealth distribution should not strongly affect our analysis.

In addition to the publicly available HRS data, we use restricted geocoded data for 1992–2012 from the HRS Cross-Wave Geographic Information (Detail) file and restricted Social Security Administration (SSA) covered earnings records for 1951–2013 from the Respondent Cross-Year Summary Earnings file. The geocoded data include country of origin as well as state and urbanicity of current residence. Because restrictions prohibit combining the geocoded data with the earnings data, we analyze the data from those modules separately.

Our HRS panel includes six birth-cohort subgroups. The original HRS wave, introduced in 1992, surveyed respondents born during 1931–1941. In the 1993 wave, called the AHEAD survey, respondents were born in 1923 or earlier. Beginning in 2012, survey respondents included members of four additional cohorts (those born during 1924–1930, 1942–1947, 1948–1953, and 1954–1959). Approximately 11 percent of HRS respondents overall are foreign-born, with the rate varying from 8 percent of those born 1942–1947 to 14 percent of those born 1948–1953.[9] The availability of longitudinal data on multiple birth cohorts allows us to examine wealth trajectories by age and by birth cohort simultaneously.[10]

In the following subsections, we summarize our methodologies for calculating comprehensive and annualized wealth. Appendix A provides detailed descriptions.

Estimating Comprehensive Wealth

We follow Gustman and Steinmeier (1999); Wolff (2007); Gustman, Steinmeier, and Tabatabai (2009); and Love, Palumbo, and Smith (2009) in constructing a comprehensive measure of the household balance sheet. This measure includes both conventional sources of net worth and the actuarial present value of expected future streams of income derived from pensions, annuities, future earnings (to age 65), Social Security, and other social insurance programs. Apart from the usual concerns about measurement error in survey data on wealth (Gustman and others 1997), the calculation of the financial and nonfinancial components of comprehensive wealth is straightforward. The financial component includes stocks, bonds, checking accounts, certificates of deposit, defined contribution pensions, individual retirement accounts, Keogh accounts, and other savings, minus nonvehicle and nonhousing debt. Nonfinancial comprehensive wealth includes the net value of primary and secondary housing, the net value of vehicles, and any investment and business real estate minus associated debt.[11]

Estimating Annualized Wealth

To measure the annual contribution of each source of comprehensive wealth, we need to know not only the amounts of each future income stream but also when the payments will start, how long they will continue, and whether cost-of-living adjustments (COLAs) or survivor's benefits apply. HRS questions address all future streams of income and use unfolding brackets to narrow the responses. Thus, for a given annualized stream of payments, computing the present value is relatively straightforward. We discount each of these cash flows using payment details, interest rate assumptions, and survival probabilities. To discount the benefit streams, we experimented with various interest rates (including the full yield curve on Treasury debt) and chose a 4.5 percent nominal rate of return for future nominal payments that will not receive COLAs. For all other future payments, such as Social Security benefits or pensions with COLAs, we assumed that the payments will keep pace with an expected inflation rate of 2 percent, which approximates the Federal Reserve Board's target for the annual rate of change in the price index for personal consumption expenditures.

We allow for survival-rate differentials by education, race/ethnicity, and sex. We start with a baseline set of mortality rates by sex and age from the 2010 Social Security Period Life Table (SSA 2015, Table 4.C6). We then adjust those probabilities using ratios of subgroup mortality rates to aggregate rates estimated in Brown, Liebman, and Pollet (2001, Tables A.1 and A.2). Those estimated ratios were based on data from the National Longitudinal Mortality Survey for three educational-attainment groups (less than high school, high school diploma but less than 4-year college degree, and 4-year college degree) and by sex, race (non-Hispanic white and black), and Hispanic origin. We then compute our respondent-specific mortality rates by applying a linear approximation of Brown, Liebman, and Pollet's ratios to the mortality rates in the Social Security life table.[12] In this way, we generate separate mortality rates by race (white or black), education (less than high school, high school diploma, or college degree), Hispanic origin, and sex.[13,14]

By far the most important source of future income for most U.S. households is Social Security. The HRS asks respondents to report their current and expected future Social Security benefits—both for themselves and for their spouses (if married). Not surprisingly, self-reported current benefit values tend to be more accurate than predictions of future benefits.[15] As shown in Appendix A, our measure of the present value of the Social Security income stream discounts future benefits by the relevant differential survival probabilities and adjusts for survivor benefits.[16] The present-value calculation for defined-benefit pensions, veterans' benefits, future earnings to age 65, annuities, and other sources of future nonlabor income follows a similar procedure. However, we compute the present values separately for the respondent and

the spouse, and we include a COLA and spousal benefits only if respondents report them in the survey (see Appendix A).[17]

Results

This section presents our estimates of comprehensive and annualized wealth for immigrants and natives. It also presents median wealth profiles.

Comprehensive Wealth

In this section, we focus on comprehensive wealth of married couples.[18] Although the patterns of comprehensive wealth for single men and women are similar to those of married couples, their levels of wealth are much lower and the statistical relationships are much noisier.[19]

Table 1 shows the weighted means, medians, and 25th and 75th percentiles of comprehensive wealth by selected component, immigrant status, and age. Immigrants have significantly lower levels of wealth than natives at the mean and throughout the distribution. The median comprehensive wealth of married immigrants, for example, ranges from 62 percent to 70 percent that of their native counterparts, depending on the age bracket. At the 25th percentile, these differences are even more pronounced, with married immigrants holding about 54 percent as much comprehensive wealth as their native counterparts. Most of the overall difference stems from differences in financial wealth and Social Security wealth. Immigrants are much more similar to natives in nonfinancial wealth, an important pattern that we will revisit.

In Chart 1, we compare the distributions of comprehensive wealth for married natives and immigrants by plotting the kernel densities of comprehensive wealth for married households. The lines plot the fractions of immigrants and natives holding the wealth levels shown on the horizontal axis. Comparing the two densities, we can see that a larger share of immigrants holds lower levels of wealth, while a larger share of natives holds higher levels of wealth.

Table 1.
Wealth of native and immigrant married couples, by selected component and age (in thousands of 2012 dollars)

	Financial		Nonfinancial		Social Security		Comprehensive	
Origin	65–74	75–84	65–74	75–84	65–74	75–84	65–74	75–84
				Mean				
Native	390	348	417	384	427	268	1,809	1,242
Immigrant	379	270	475	342	368	246	1,447	1,022
t-statistic of difference	0.2	1.7	-0.8	1.2	7.0	3.2	1.7	2.9
				Median				
Native	113	108	197	188	414	248	1,174	837
Immigrant	11	16	163	160	354	237	733	589
t-statistic of difference	21.5	13.8	3.4	1.6	7.5	1.5	16.1	5.8
				25th percentile				
Native	13	17	96	95	303	182	709	498
Immigrant	0	0	36	15	229	155	386	271
t-statistic of difference	14.6	16.4	8.7	8.5	6.9	4.0	18.5	11.8
				75th percentile				
Native	401	358	395	374	532	323	1,926	1,451
Immigrant	195	199	405	382	483	332	1,465	1,273
t-statistic of difference	9.1	5.0	-0.4	-0.3	4.0	-1.1	5.4	2.4

SOURCE: Authors' calculations based on HRS (1998–2012 waves).

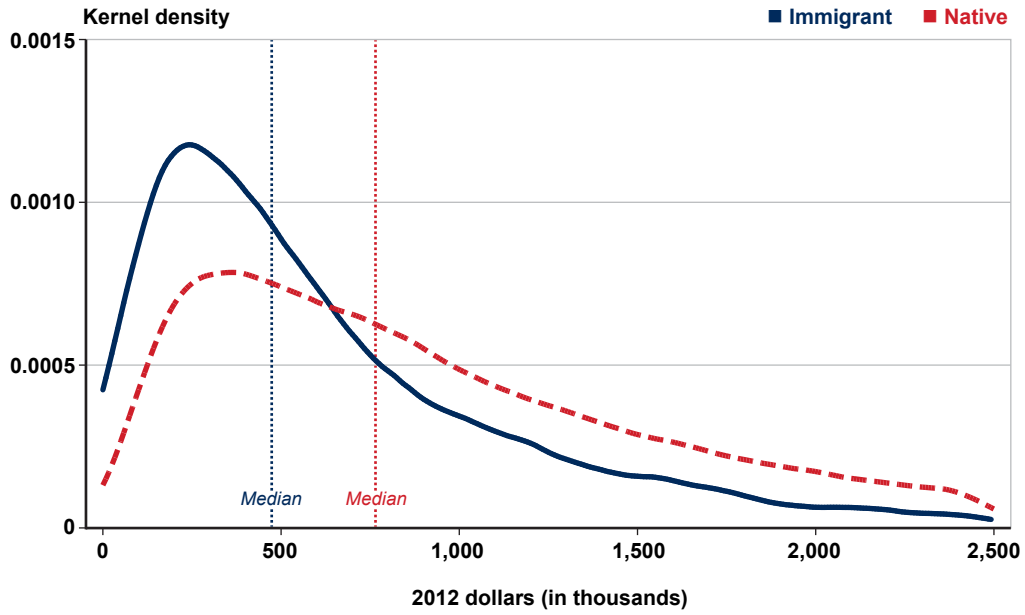
NOTES: Values are weighted.

Married couples are those in which both spouses are immigrants or natives and the couple was married when the respondent participated in his or her first HRS wave.

The age of the older spouse determines the household's age group.

Comprehensive wealth includes non–Social Security annuitized wealth.

Chart 1.
Kernel density of comprehensive wealth of married immigrant and native households aged 60–89



SOURCE: Authors' calculations based on HRS (1998–2012 waves).

NOTE: "Married" reflects the marital status of the respondent at first wave of HRS participation; the age of the older spouse determines household age.

Annualized Wealth

To complement the comprehensive measure of wealth, we calculate an annualized equivalent to show how differences in total wealth translate into different consumption and welfare possibilities. For example, a given amount of comprehensive wealth will imply more consumption possibilities for older single individuals than for younger married households. Although it is difficult to calculate an exact welfare measure without making strong assumptions about the structure of preferences, we can compute an approximate measure that relates total resources to an annual equivalent per household member, as in Love, Palumbo, and Smith (2009).

In particular, we imagine that a household uses its entire comprehensive wealth to purchase an actuarially fair, real, joint-life annuity whose price is computed using the differential survival probabilities discussed above. The income level delivered by that annuity is our measure of annualized wealth (Appendix A describes the calculation). The primary advantage of the annualized measure is that it automatically adjusts for household size, expected remaining years of consumption, and survival probabilities. It also reflects the familiar notion of permanent income and, therefore, provides an approximate measure of the consumption possibilities available in each remaining year of life. By contrast, the stock value of total household resources, for example, tells us less about the consumption and welfare implications of a given amount of savings.[20]

Both the levels and the growth rate of annualized wealth can yield important insights into the adequacy of household resources. Annualized wealth levels at or below the poverty line for a demographic subset of households would be concerning. Conversely, an increase in annualized wealth for most households over time would imply that households could afford increased spending (or bequests) with age; yet if the levels instead tended to decline with age, there might be concern that households were spending down their resources at an unsustainable rate.

However, the annualized equivalent of wealth might not correspond directly with actual consumption possibilities, particularly if not all forms of wealth are equally fungible. For example, if the majority of a family's comprehensive wealth is the present value of its future Social Security benefits, the household may not have access to an annual equivalent of this wealth until its members are eligible to start receiving their benefits. A similar concern about fungibility would apply to housing, in that reverse mortgages remain uncommon and tapping into equity could entail substantial transaction costs.

Chart 2 plots the kernel densities of annualized wealth for immigrant and native married households, with vertical lines marking the median values for the two groups. As with comprehensive wealth, a larger share of immigrants holds lower levels of wealth, while a larger share of natives holds higher levels.

Wealth Profiles

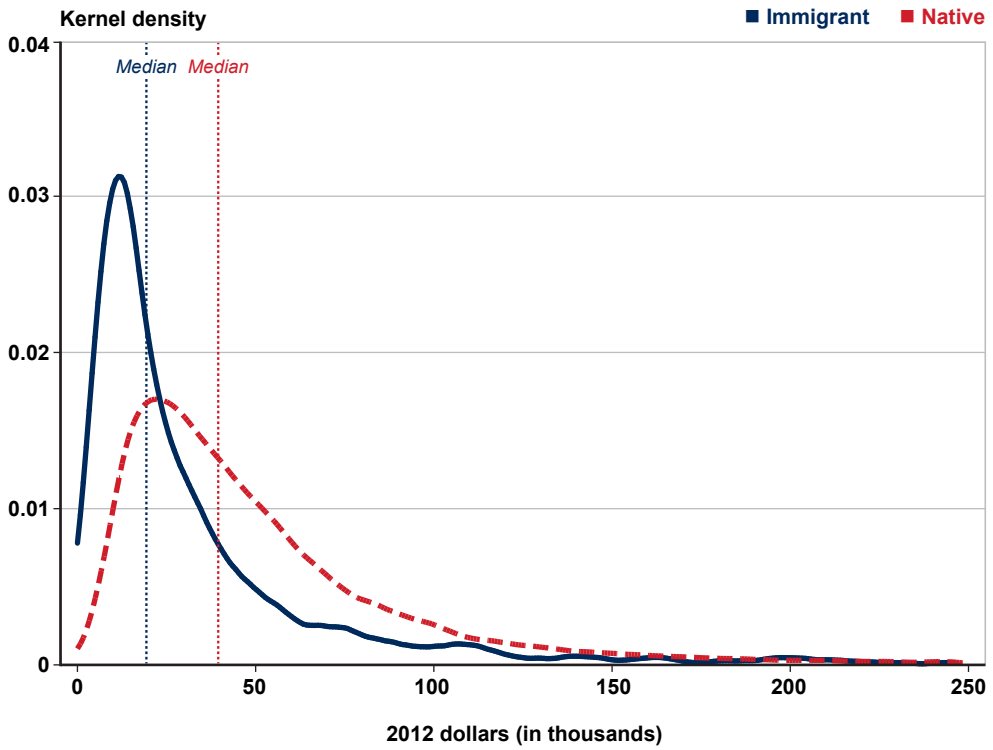
To see how retirement wealth changes for immigrants and natives as they age, we begin by examining regression-based age profiles of comprehensive wealth using a technique developed in Love, Palumbo, and Smith (2009). We use the median growth rates *within* households to trace the typical trajectory of wealth over time for a given population. The premise is straightforward: If we knew a household's initial amount of wealth and the projected growth rates of wealth across future ages, we would be able to construct the full age-path of wealth.[21]

The advantage of the technique is that it helps mitigate cohort effects, nonrandom attrition, and survivorship bias that may induce differences in the observed levels of wealth for different ages at a given time. The cohort effects are largely absorbed by the survey-year and age dummies. Nonrandom attrition is eliminated because the growth rates are necessarily calculated for survivors. Finally, because the *growth rates* of wealth tend to differ much less than the *levels* for survivors versus nonsurvivors (Love, Palumbo, and Smith 2009), the regression-based approach tends to reduce survivorship bias as well.

Chart 3 displays the age trajectories of median comprehensive wealth for married immigrants and natives aged 60 to 90 (specifically, for the median age within each of the 5-year age brackets). The gap between immigrants and natives in comprehensive wealth is substantial at all ages. Natives begin this phase with almost $1.2 million in comprehensive wealth, while immigrants start with only about $800,000. Despite the initial difference, however, the wealth gap between the two groups converges over the retirement years.[22]

The decline with age in comprehensive wealth for both natives and immigrants does not necessarily imply the same pattern for annualized wealth. Chart 4 displays trajectories of annualized wealth for immigrant and native married couples using the same median

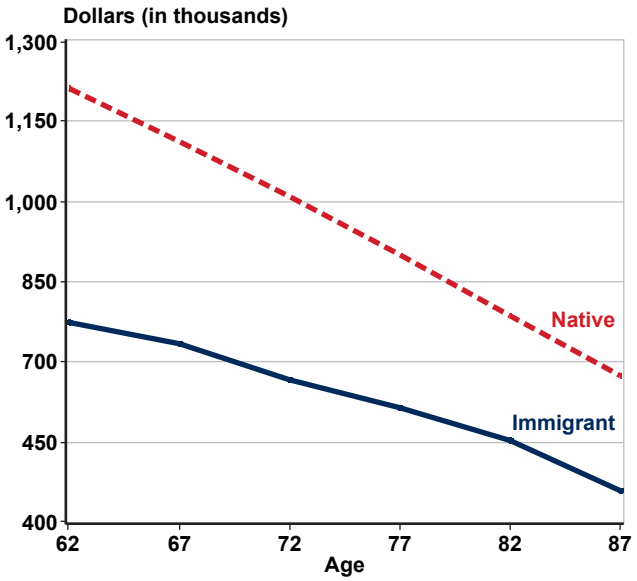
Chart 2.
Kernel density of annualized comprehensive wealth of married immigrant and native households aged 60–89



SOURCE: Authors' calculations based on HRS (1998–2012 waves).

NOTE: "Married" reflects the marital status of the respondent at first wave of HRS participation; the age of the older spouse determines household age.

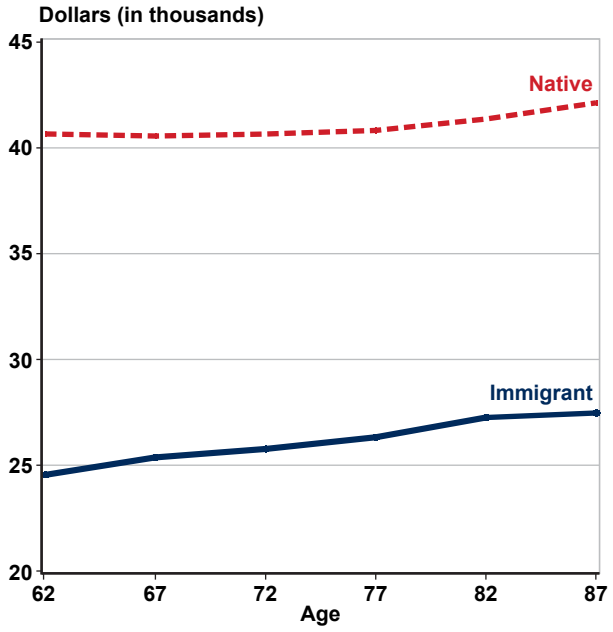
Chart 3.
Comprehensive wealth profiles of married immigrants and natives, by age of older spouse (in 2012 dollars)



SOURCE: Authors' calculations based on HRS (1998–2012 waves).

NOTE: "Married" reflects the marital status of the respondent at first wave of HRS participation.

Chart 4.
Annualized comprehensive wealth profiles of married immigrants and natives, by age of older spouse (in 2012 dollars)



SOURCE: Authors' calculations based on HRS (1998–2012 waves).

NOTE: "Married" reflects the marital status of the respondent at first wave of HRS participation.

regression-based technique. The annualized profiles for both groups slope upward (though only slightly in the case of natives), which is consistent with findings in Love, Palumbo, and Smith (2009). Declines in comprehensive wealth combined with rising annualized wealth imply that households draw down their total resources more slowly than a simple lifecycle model would suggest. As with comprehensive wealth, the annualized wealth profiles for immigrants and natives converge with age. At the youngest potential retirement ages, immigrants have annualized wealth about $15,000 lower than that held by natives, but the difference narrows slightly as households approach age 80. Thus, although native and immigrant married couples both appear to be drawing down resources more slowly than a simple lifecycle framework would predict, we find some evidence that immigrants are especially slow to spend down retirement wealth.[23] Patterns for unmarried men and unmarried women (available from the authors on request; see note 19) show a similar rise in annualized wealth, albeit with more noise.

One drawback to our growth-based method of tracing median annualized wealth is that median *growth rates* need not correspond with the median *levels* of annualized growth to which we anchor the trajectories in Chart 4.[24] Ideally, we would estimate growth-based profiles for households with annualized wealth near the median for each age bracket, but we do not have enough observations to accurately estimate growth rates for the age cells used to construct Chart 4. However, we can align the median growth rates and levels if we consider much wider age brackets.

Table 2 shows the annualized wealth levels and growth rates by component for married households with annualized wealth within 25 percent (plus or minus) of the median level for each age and immigration-status group. Despite having substantially lower median annualized financial and annuitized wealth levels than natives, immigrants aged 65–74 and 75–85 have similar levels of housing wealth. This pattern is also reflected in the shares of total nonfinancial wealth, as immigrants aged 75–85 hold about 14 percentage points more of their portfolios in the form of nonfinancial wealth than do natives in that age group.

The table's lower panel shows that immigrant households near the median of annualized wealth experience faster growth in nonfinancial wealth than do natives. The growth-rate differences persist across all of the age groups, and are widest for the oldest group. Most of the differential growth in nonfinancial annualized wealth appears to be due to housing. For

Table 2.
Annualized wealth of native and immigrant married couples, by age: Amount and growth rate, by component

Age and origin	Financial	Nonfinancial		Annuitized	Comprehensive
		Housing	Total		
			Amount (2012 dollars)		
55–64					
Native	3,059	3,486	4,913	18,025	38,838
Immigrant	99	2,143	3,000	9,971	19,314
t-statistic of difference	29.9	4.0	4.0	14.4	43.7
65–74					
Native	4,570	5,832	7,744	23,170	39,851
Immigrant	416	5,780	6,607	14,971	24,543
t-statistic of difference	20.7	0.1	2.0	17.3	24.2
75–85					
Native	6,380	9,191	11,805	21,212	44,294
Immigrant	1,031	10,107	12,199	14,011	29,603
t-statistic of difference	9.2	-1.0	-0.4	8.9	19.3
			Annual growth rate [a] (%)		
55–64					
Native	6.4	4.3	3.9	2.8	0.4
Immigrant	4.8	8.2	6.1	1.6	-0.9
t-statistic of difference	0.3	-2.6	-1.6	2.1	3.0
65–74					
Native	3.1	5.4	4.2	-0.3	0.3
Immigrant	-1.6	7.3	6.2	-0.2	0.6
t-statistic of difference	3.4	-2.6	-3.0	-0.6	-0.5
75–85					
Native	2.8	6.3	5.0	-0.9	0.9
Immigrant	1.3	12.9	10.2	-0.3	1.1
t-statistic of difference	0.4	-2.7	-3.8	-2.3	-0.2

SOURCE: Authors' calculations based on HRS (1998–2012 waves).

NOTES: Values are medians for all households between the 25th and 75th percentiles for annualized wealth within their age and immigrant-status groups.

Married couples are those in which both spouses are immigrants or natives and the couple was married when the respondent participated in his or her first HRS wave.

The age of the older spouse determines the household's age group.

a. Among households with positive holdings.

example, although natives aged 75–85 saw an annual increase in housing wealth of about 6.3 percent over the study period, immigrants in the same age bracket experienced an increase twice as large. Housing wealth is likely to be a particularly important indicator for immigrants, both because it is large relative to financial wealth and because it is relatively illiquid.

Along with understanding the importance of housing, we want to see how annualized wealth depends on factors that pertain particularly to immigrants, including country of origin, immigration cohort, race, and ethnicity. Therefore, the next section turns to a rich regression analysis of the covariates of annualized wealth for immigrants and natives.

Empirical Analysis of Native and Immigrant Wealth

Table 3 shows weighted mean and median levels of annualized wealth by age (65–74 and 75–85), education, race and ethnicity, and immigration cohort (pre-1955, 1955–1964, 1965–1974, 1975–1984, and 1985 or later) for households headed by a married couple at the time of the respondent's first survey wave. For both age groups, immigrants have lower mean and median annualized wealth than their native counterparts at all education levels (except for mean wealth of those aged 75–85 who did not complete high school). Patterns are similar for unmarried men and unmarried

Table 3.
Weighted annualized comprehensive wealth of immigrant and native married couples by age, education, race/ethnicity, and immigration cohort (in thousands of 2012 dollars)

Characteristic	Age 65–74			Age 75–85		
	Immigrant	Native	*t*-statistic of difference	Immigrant	Native	*t*-statistic of difference
			Mean			
Education						
Less than high school	27.5	33.8	2.5	46.0	40.0	-1.1
High school diploma	40.2	49.4	4.1	48.0	61.8	3.1
College degree	92.3	107.7	0.7	75.3	111.2	3.7
Race/ethnicity						
White non-Hispanic	81.5	64.7	-1.9	83.8	71.3	-1.9
Nonwhite non-Hispanic	59.3	34.8	-3.1	36.1	35.5	-0.1
Hispanic	18.1	33.8	6.7	20.3	40.9	5.5
Immigration cohort						
Pre-1955	46.3	. . .	. . .	57.6	. . .	. . .
1955–1964	78.9	. . .	. . .	77.1	. . .	. . .
1965–1974	39.0	. . .	. . .	46.8	. . .	. . .
1975–1984	26.3	. . .	. . .	34.0	. . .	. . .
1985 or later	14.3	. . .	. . .	9.1	. . .	. . .
			Median			
Education						
Less than high school	15.1	22.9	10.0	19.5	27.9	3.3
High school diploma	29.5	38.8	7.3	30.0	45.0	5.1
College degree	50.6	66.5	4.5	49.2	76.3	6.6
Race/ethnicity						
White non-Hispanic	48.8	42.9	-1.9	56.6	47.3	-2.0
Nonwhite non-Hispanic	31.4	24.6	-2.9	17.9	24.0	1.8
Hispanic	14.7	25.1	7.7	13.9	26.4	5.2
Immigration cohort						
Pre-1955	30.5	. . .	. . .	33.9	. . .	. . .
1955–1964	37.0	. . .	. . .	49.7	. . .	. . .
1965–1974	23.3	. . .	. . .	28.6	. . .	. . .
1975–1984	13.5	. . .	. . .	17.3	. . .	. . .
1985 or later	8.0	. . .	. . .	7.0	. . .	. . .

SOURCE: Authors' calculations based on HRS (1998–2012 waves).

NOTES: Married couples are those in which both spouses are immigrants or natives and the couple was married when the respondent participated in his or her first HRS wave.

The age of the older spouse determines the household's age group.

Total annualized wealth includes future earnings and other components not shown separately.

. . . = not applicable.

women, but wealth levels are much lower for those groups (not shown). Race affects the wealth differentials, as immigrants fare better than natives in both mean and median wealth for both age groups and non-Hispanic racial categories (except for median wealth of nonwhites aged 75–85). This result is consistent with work by Sevak and Schmidt (2014), who found higher levels of total net worth for immigrants after controlling for demographic characteristics including race and ethnicity. However, the pattern does not hold for Hispanics, as native Hispanics hold almost twice as much annualized wealth as Hispanic immigrants at both the mean and the median.

One possible explanation of the wealth differences among Hispanics may involve differences in wealth by immigration cohort. The table shows large differences in annualized wealth by year of arrival. The two earliest immigration cohorts (corresponding loosely to those arriving before the 1965 act) have several times the mean annualized wealth of immigrants arriving after 1984, and the differences at the median

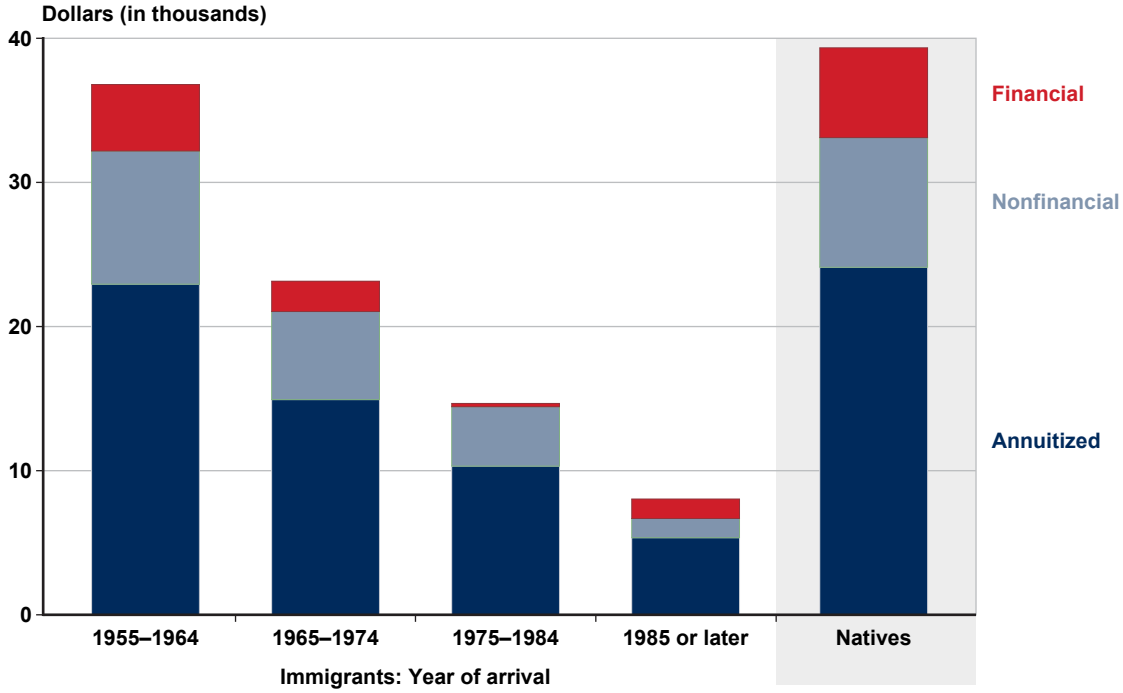
are almost as large. Thus, although the annualized resources of the most recent immigrants fall below the poverty line, the earliest immigrants appear to be much better off.

Differences in annualized wealth by immigrant cohort might reflect differences in the age distribution of the earlier and more recent arrivals, with younger people—who tend to have lower annualized wealth levels—being more predominant among the latter groups. The differences in annualized wealth levels by immigration cohort, however, are large even within age brackets. With the 65–74 age group as an example, Chart 5 illustrates. It shows the median annualized wealth by component for native households and for immigrant households by year of arrival. All are married households whose oldest member is aged 65–74. The chart indicates that annualized wealth for each successive arrival cohort of immigrants is dramatically lower than that of its predecessor. In addition, the most recent arrivals hold very little financial wealth and have much less nonfinancial wealth than earlier immigrants and natives. Because annualized wealth differs dramatically within its single age group, Chart 5 suggests that differences in the age distributions of successive immigrant arrival cohorts do not account for all the cross-cohort variance in wealth.

Median Regressions of Annualized Wealth

Immigrants and natives may differ along a number of potentially important observable characteristics, including health, education, earnings, wealth, and expectations about longevity and bequests. To see whether levels of annualized wealth differ between the groups after controlling for observables, we estimate median regressions of the logarithm of annualized wealth on five categories of key demographic and financial covariates. We focus on median regressions because wealth is unevenly distributed and we are interested in the experience of households near the middle of the distribution. These regressions are meant to be descriptive and should not be interpreted as implying causality. However, they will allow us to infer whether observable characteristics can fully account for the immigrant-native gap in annualized financial wealth. We have also estimated ordinary least square (OLS) regressions with qualitatively similar results (see Appendix B).

Chart 5.
Median annualized comprehensive wealth for married households aged 65–74, by component: Immigrants by arrival cohort and natives (in 2012 dollars)



SOURCE: Authors' calculations based on HRS (1998–2012 waves).

NOTE: "Married" reflects the marital status of the respondent at first wave of HRS participation; the age of the older spouse determines household age.

Empirical Approach

We assume that the conditional median of the logarithm of annualized wealth, *y,* is a linear function of a vector of observable characteristics. We are therefore interested in estimating the following median regression:

$$y_{it} = x'_{it}\beta + u_{it},$$

$$\Pr(u'_{it} \leq 0 | x_{it}) = 0.5,$$

where the vector of the β regression coefficients can be interpreted as rates of return to the different characteristics at the median of the conditional distribution, and where *i* indexes households and *t* indexes the time period. Because errors are likely to be correlated within households over time, we cluster standard errors following the method in Parente and Santos Silva (2013).

We estimate the median regression to understand how much of the gap in annualized wealth between immigrant arrival cohorts and between immigrants and natives can be explained by several categories of observable characteristics, including demographics, lifecycle variables, intergenerational transfers, and immigrant origins and racial/ethnic backgrounds. We first estimate a set of median regressions, controlling for an increasing number of observable characteristics, and then examine the relative importance of characteristics versus returns to characteristics by applying the quantile decomposition described in Melly (2005).

Covariates and Summary Statistics

Table 4 shows the weighted means for the variables included in the regressions. Although our tables and charts have thus far focused on married couples (who have the highest levels of wealth), we now examine the potential role of marital status in determining immigrant-native wealth differentials. As such, we include all respondents in this sample, regardless of marital status.

Table 4.
Descriptive statistics for study sample of HRS households with respondents aged 51 or older

Variable	Weighted mean	Standard deviation	Minimum	Maximum
		Dependent variable		
Natural logarithm of annualized wealth [a]	10.42	0.88	1.68	15.66
		Baseline covariates		
Immigration cohort				
Pre-1955	0.02	0.13	0.00	1.00
1955–1964	0.02	0.13	0.00	1.00
1965–1974	0.02	0.14	0.00	1.00
1975–1984	0.02	0.13	0.00	1.00
1985 or later	0.01	0.10	0.00	1.00
Age				
65–74	0.25	0.43	0.00	1.00
75 or older	0.23	0.42	0.00	1.00
		Demographic covariates		
Married couple	0.50	0.50	0.00	1.00
Immigrant and immigrant	0.03	0.17	0.00	1.00
Immigrant and native	0.03	0.18	0.00	1.00
Naturalized citizen	0.06	0.23	0.00	1.00
Non-English speaker	0.03	0.17	0.00	1.00
Education				
High school diploma	0.54	0.50	0.00	1.00
College degree	0.26	0.44	0.00	1.00
Race/ethnicity				
Hispanic—				
White	0.05	0.21	0.00	1.00
Nonwhite	0.02	0.15	0.00	1.00
Nonwhite non-Hispanic	0.13	0.34	0.00	1.00
Family size	2.13	1.22	1.00	19.00
Number of children	2.91	2.03	0.00	22.00

(Continued)

Table 4.
Descriptive statistics for study sample of HRS households with respondents aged 51 or older—*Continued*

Variable	Weighted mean	Standard deviation	Minimum	Maximum
		Lifecycle covariates		
Share of wealth [a] from—				
Financial assets	0.13	0.34	-23.60	31.01
Nonfinancial assets	0.22	0.29	-13.24	22.34
Logarithm of household earnings [b]	11.06	5.74	0.00	15.91
Standard deviation of logarithm of household earnings [b]	0.92	0.33	0.01	3.01
Urban residence [c]	0.48	0.50	0.00	1.00
Homeowner	0.79	0.41	0.00	1.00
Business owner	0.10	0.29	0.00	1.00
Health status				
Good	0.34	0.47	0.00	1.00
Fair or poor	0.34	0.48	0.00	1.00
Medical out-of-pocket costs				
Middle tercile	0.34	0.46	0.00	1.00
Highest tercile	0.30	0.46	0.00	1.00
		Transfer covariates		
Expect to leave bequest				
Deemed likely, greater than $10,000	0.70	0.46	0.00	1.00
Deemed likely, greater than $100,000	0.47	0.50	0.00	1.00
Child(ren) within 10 miles	0.56	0.50	0.00	1.00
Transfers				
To child(ren)	0.40	0.49	0.00	1.00
From child(ren)	0.05	0.22	0.00	1.00
To relative(s)	0.10	0.30	0.00	1.00
From relative(s)	0.03	0.18	0.00	1.00
		Immigrant origin and race/ethnicity covariates		
Immigrated from Mexico [c]	0.01	0.12	0.00	1.00
Per capita income of country of origin [c]				
High-middle	0.03	0.18	0.00	1.00
Low-middle	0.01	0.12	0.00	1.00
Low	0.01	0.08	0.00	1.00
Race/ethnicity				
Hispanic—				
White	0.01	0.11	0.00	1.00
Nonwhite	0.02	0.16	0.00	1.00
Nonwhite non-Hispanic	0.02	0.13	0.00	1.00

SOURCE: Authors' calculations based on HRS (1998–2012 waves), SSA earnings records, and geocoded data from HRS.

NOTE: Study sample consists of HRS households with a respondent or spouse aged 51 or older.

a. Reflects the value first reported by each household in its initial HRS wave.

b. Restricted earnings data sample only.

c. Restricted geocoded data sample only.

The dependent variable in the regressions is the natural logarithm of annualized wealth. We restrict our sample to positive values of annualized wealth, which eliminates only about 0.3 percent of the respondents. The table organizes the covariates into five categories that correspond with the types of controls that we will use in the regression analysis: baseline, demographic, lifecycle, transfer payment, and immigrant origin and race/ethnicity. The baseline category is relatively sparse and includes only the immigration dummies, year dummies, and a set of age dummies (with ages 51–64 as the omitted category).

The demographic controls comprise dummies for marital status, citizenship status, whether English is spoken at home, education, race, and ethnicity. In addition, we include variables for family size and the total number of children (the latter including children not living in the respondent's household). Because the importance of marriage likely depends on whether the couple consists of two natives, two immigrants, or one immigrant and one native, we include dummies and interactions that control for each configuration.

The lifecycle covariates consist of a set of variables that are theoretically important in lifecycle models of saving. We control for the portfolio shares of financial and nonfinancial wealth (the share of annuitized wealth is a linear combination of the other two shares) because different liquidity characteristics across wealth categories could influence rates of drawdown in retirement (for example, a slow withdrawal of housing wealth).[25] The restricted SSA earnings data allow us to construct a variable for average household Social Security–covered earnings (in 2012 dollars) from 1951 to 2013. We include covariates for both the logarithm of household earnings (plus one, to handle zeros) and the standard deviation of the logarithm of household earnings. The geocoded data allow us to control for whether respondents live in an urban area, defined as a county within a metro area that has a population of 1 million or more. As noted earlier, we cannot include both the restricted geocoded variables and the restricted earnings variables in the same regressions. We include dummies for whether individuals own houses and businesses because these assets may be harder to liquidate in retirement. Finally, we include dummy variables for health status and out-of-pocket medical costs as a way to control for the effects of these factors on retirement resources. "Excellent/very good" is the omitted health-status category, and we assign a household to the less favorable of the respondent's and spouse's reported health statuses. The medical out-of-pocket cost dummies indicate whether the household's costs are in the highest tercile or the middle tercile of the expense distribution.

The transfer covariates include bequest variables that take a value of 1 if respondents report a 50 percent or higher probability that they will bequeath a given amount to their child(ren). About half of the sample reports greater than even odds of leaving a bequest. We include a dummy variable for whether children live within 10 miles of the household to proxy for unobserved service transfers between children and parents.[26] The transfer variables are indicators for "yes" answers to questions of the following form: "Including help with education but not shared housing or shared food, have you given [received] financial help totaling $500 or more to [from] any of your children [relatives]?" The transfer variables are especially important in the context of immigrant resources because they may capture part of the effect of unobserved remittances on annualized wealth.

The immigrant origin, race, and ethnicity category includes variables that may capture differences in initial opportunity (such as schooling), culture, and (along with the non-English speaker control) language barriers. We classify countries of origin based on per capita gross national income using the World Bank's fiscal year 2014 income categories: low ($1,035 or less), low-middle ($1,036 to $4,085), high-middle ($4,086 to $12,615), and high ($12,616 or more, the omitted category). We control separately for whether respondents migrated from Mexico given its border status and large migrant flows to and from the United States.

Annualized Wealth Regressions: Immigrants and Natives

Table 5 shows the coefficient estimates and standard errors for the equation described above under "Empirical Analysis of Native and Immigrant Wealth." Because we consider both the association of immigration status with annualized wealth and the channels through which that association might emerge, we present cumulating estimates for five categorical specifications that control for the household characteristics that Table 4 lists individually.[27] Because we cannot merge the restricted SSA earnings data with the restricted HRS geocoded data, we report results for the two samples separately.

The baseline specification includes only the immigrant cohort dummies and, to represent the first and second halves of retirement, a pair of age dummies. The baseline covariates examine the relationship between immigration status and annualized wealth without controlling for demographics, financial variables, or immigrant origins. The coefficient estimates on the cohort dummies indicate that immigrants hold less annualized wealth than natives and that their annualized wealth increases with years in the United States. Although the coefficient estimates imply that the first two cohorts (pre-1955 and 1955–1964) respectively have 20 percent and 13 percent less wealth than natives (= $\exp(\hat{\beta}) - 1$), the wealth levels of the final three immigrant cohorts (1965–1974, 1975–1984, and 1985 or later) are lower by 47 percent, 61 percent, and 71 percent, respectively.

Table 5.

Median quantile regressions of the natural logarithm of annualized wealth for all households with respondents aged 51 or older: Cumulative effects of five categories of covariates, by immigration cohort and restricted data sample

Variable	Baseline covariates		With demographic covariates added		With lifecycle covariates added		With transfer-payment covariates added		With immigrant origin and race/ethnicity covariates added	
	Coefficient	Standard error	Coefficient	Standard error	Coefficient	Standard error	Coefficient	Standard error	Coefficient	Standard error
Earnings data sample										
Immigration cohort										
Pre-1955	-0.222*	0.124	-0.053	0.073	0.051	0.040	0.050	0.056	0.105**	0.041
1955–1964	-0.147**	0.066	0.025	0.058	0.092**	0.042	0.063	0.039	0.125***	0.045
1965–1974	-0.626***	0.071	-0.147***	0.047	-0.029	0.036	-0.034	0.040	0.045	0.039
1975–1984	-0.932***	0.061	-0.311***	0.045	-0.145***	0.040	-0.162***	0.039	-0.080	0.049
1985 or later	-1.246***	0.070	-0.662***	0.073	-0.186***	0.052	-0.237***	0.078	-0.169**	0.074
Constant	10.342***	0.010	9.917***	0.020	8.137***	0.072	8.427***	0.071	8.431***	0.071
R-squared	0.066		0.348		0.381		0.526		0.526	
Observations	105,268		103,289		81,138		69,055		69,055	
Geocoded data sample										
Immigration cohort										
Pre-1955	-0.222*	0.124	-0.053	0.073	0.000	0.031	0.017	0.034	0.061	0.040
1955–1964	-0.147**	0.066	0.025	0.058	0.065	0.041	0.053	0.037	0.109***	0.042
1965–1974	-0.626***	0.071	-0.147***	0.047	-0.094**	0.039	-0.078*	0.041	-0.001	0.045
1975–1984	-0.932***	0.061	-0.311***	0.045	-0.204***	0.035	-0.216***	0.043	-0.126**	0.050
1985 or later	-1.246***	0.070	-0.662***	0.073	-0.414***	0.053	-0.464***	0.060	-0.355***	0.094
Constant	10.342***	0.010	9.917***	0.020	9.389***	0.017	9.378***	0.019	9.377***	0.018
R-squared	0.066		0.348		0.285		0.389		0.389	
Observations	105,268		103,289		103,289		86,382		86,382	

SOURCE: Authors' calculations based on HRS (1998–2012 waves), SSA earnings records, and geocoded data from HRS.

NOTES: All covariate category specifications include a full set of year dummies.

Standard errors are clustered at the household level.

* = statistically significant at the $p < 0.10$ level; ** = statistically significant at the $p < 0.05$ level; *** = statistically significant at the $p < 0.01$ level.

With the addition of the demographic controls, the coefficient estimates on the immigrant cohorts fall substantially, and those on the three most recent cohorts remain statistically significant at the 1 percent level. The estimates indicate that these cohorts respectively have 14 percent, 27 percent, and 48 percent less median annualized wealth than native households have.

The lifecycle variables further shape the wealth trajectories. The prohibition of merging restricted data on earnings and geography does not affect the estimates using baseline and demographic covariates—both panels of Table 5 contain the same values in those columns—but it does produce different estimates for the lifecycle covariates. The top panel includes measures of the level and variation in lifetime earnings based on the restricted SSA data, while the bottom panel introduces a control for whether households live in a highly populated urban area. In both specifications, the introduction of the lifecycle variables absorbs some of the association between immigration cohort and annualized wealth, particularly in the case of the regression controlling for lifetime Social Security–covered earnings. Although the addition of lifecycle covariates lowers the absolute value of the estimated coefficient from 0.662 to 0.414 for the post-1985 immigration cohort in the regression using the geocoded data, the estimate (again, in absolute value) declines further still—from 0.662 to 0.186—when we control for lifetime earnings. These estimates suggest that much, but not all, of the differences in annualized wealth between the more recent cohorts and their native counterparts can be explained by lifecycle factors and by differences in their earnings histories.

The patterns of the coefficient estimates on the individual lifecycle variables, detailed in Appendix B, are consistent with the predictions of a lifecycle model that includes housing wealth. In particular, owning a house is strongly associated with higher annualized wealth. The high transaction costs associated with housing may cause households to withdraw housing wealth slowly in retirement.

With the addition of controls for bequests and transfers, the estimated coefficients all indicate a statistically strong relationship with annualized wealth, as wealth is positively associated with bequests and transfers *to* family members and negatively associated with transfers *from* family members. However, transfers do not substantially change the coefficient estimates on the immigration cohort dummies.

Controlling for immigrant origins and race and ethnicity further reduces the estimated coefficient for the 1965–1974 cohort dummy, but the estimates for the most recent immigrant cohort remain strongly negative and statistically significant. Thus, although controlling for a rich set of observables including lifetime earnings, geographic origins, and other lifecycle variables substantially reduces the measured immigrant-native gap in annualized wealth, a portion remains unexplained for the most recent cohorts. Shortfalls range from 8 percent to 11 percent for the 1975–1984 cohort and from 16 percent to 30 percent for the most recent cohort, depending on whether we control for restricted earnings or geocoded information.

Although we cannot separately identify the importance of the immigration cohort and the age of immigrants at arrival, we can explore their relative importance by considering the role of observable characteristics in explaining the annualized wealth differences between natives and immigrants. The regression estimates indicate that recent immigrants accumulate less wealth than do those in earlier cohorts. As we add covariates for demographics, lifecycle variables, transfers, and origin and race/ethnicity, however, the gaps begin to close, suggesting that age at arrival is unlikely to be the sole (or perhaps even the major) driver of annualized wealth.[28] If that were the case, then we would expect most of these differences to survive the layering of covariates. Thus, although we do not have enough information to answer the question definitively, it seems fair to suggest that both factors—*who* came, and *when* they came—likely play an important role.

Convergence of Immigrant and Native Wealth

A central question in the labor literature is whether immigrant earnings tend to converge with those of natives having similar characteristics. If saving rates and asset allocation were held constant, convergence in earnings would imply convergence in retirement resources. Saving, however, involves a complex relationship between earnings, financial investments, and homeownership. Therefore, convergence in earnings does not necessarily imply convergence in annualized wealth if saving and investment behavior differ widely between immigrants and natives and across immigrant arrival cohorts.

The results in Table 5 suggest that the annualized resources of earlier immigrant waves are statistically indistinguishable from those of natives with similar characteristics. More recent immigrant cohorts, by contrast, appear to accumulate substantially less wealth heading into retirement. However, that conclusion implicitly assumes that immigrants and natives

experience similar returns to household characteristics such as family composition, financial variables, and health events.

It is possible that the negative coefficient estimates for the more recent immigrant cohorts partially reflect differences in the returns to characteristics between immigrants and natives. If so, we would expect some of the wealth gradient by immigration wave to disappear if we regressed annualized wealth on the covariates of immigrants alone. Like Table 5, Table 6 shows estimates for cumulating sets of covariates, but the sample is limited to immigrant households (either single respondents or married couples in which both spouses are immigrants). Table 6 omits the pre-1955 immigration cohort.

The coefficient estimates show a similar pattern of decreasing annualized wealth across increasingly recent cohorts.[29] The one exception to the pattern is the 1955–1964 cohort, which appears to have statistically more annualized wealth than the previous cohort. This pattern of declining annualized wealth across the three most recent immigration cohorts holds in all specifications and both restricted data samples with one slight exception (lifecycle variables in the earnings-data sample for the 1985 or later cohort). The 1975–1984 cohort holds about 17 percent less annualized wealth than the earliest cohort, while the resources of those in the most recent wave are between 20 percent and 36 percent lower, depending on the restricted sample used.[30]

Characteristics Versus Returns

The results in Tables 5 and 6 indicate that much of the raw gap in annualized wealth between different immigrant cohorts and natives is due to differences either in observables or in the returns to those observables. In this section, we explore some key differences in characteristics that a standard lifecycle model would suggest should matter for total wealth accumulation, and we analyze the raw gap in annualized wealth using Melly's (2005) quantile version of the standard Oaxaca-Blinder decomposition.

Housing wealth, health shocks, and bequests/transfers may affect observed patterns of annualized wealth. Tables 7, 8, and 9 highlight some systemic differences in these characteristics between natives and different waves of immigrants. The tables show both the unconditional summary statistics for each variable and the coefficient estimates that result from regressing each of those variables on immigrant-cohort dummies, controlling for a large number of individual characteristics.[31]

Table 7 shows that the earliest and the most recent immigration cohorts have the lowest homeownership rates after controlling for observable characteristics. That result makes sense for immigrants in the most recent cohort, given that they have had less time to accumulate money for a down payment or face credit constraints because of lower incomes; but for the earliest cohort, that result is more of a mystery. It may reflect members of the older cohort moving in with their children or into institutionalized care.

Table 7 also confirms that immigrants are less likely to own a house than natives are, yet median home equity among immigrants who are homeowners constitutes a greater share of their net worth—at least among the earliest three waves. The two most recent immigrant waves do not hold higher portions of wealth in housing after controlling for other characteristics. This could partly explain their lower levels of annualized wealth in retirement, because drawdowns of housing wealth tend to be lower than those of other wealth holdings.

Table 8 shows some significant differences between natives and immigrants in medical costs, business ownership, bequest intentions, and expected longevity. Immigrants are less likely than natives to incur out-of-pocket medical costs, and conditional on having positive costs, only the pre-1955 immigration cohort has a significant difference in the cost level. Immigrants are less likely than natives to own their own businesses, although the differences in the ratios of business valuation to net worth are insignificant for all but the most recent wave of immigrants. Interestingly, there are strong differences in bequest intentions. With the exception of the earliest wave, immigrants report considerably higher probabilities of bequeathing large amounts than do natives with similar characteristics. There is no consistent pattern of immigrant-native differences in expected longevity.

Family transfers likely play an important role in the saving decisions of immigrants (Table 9). Although the HRS does not collect information on specific remittance amounts, it does provide information on the presence of transfers totaling $500 or more to and from family members. Immigrants are more likely to report transfers to their children and other relatives. The fact that they are also much less likely to live near their children suggests that some of these transfers may be flowing abroad. Among immigrants, the most recent wave differs most widely from natives with similar characteristics in terms of reported transfers, suggesting both a reason for their lower annualized

Table 6.
Median quantile regressions of the natural logarithm of annualized wealth for immigrant households with respondents aged 51 or older: Cumulative effects of five categories of covariates, by immigration cohort and restricted data sample

	Baseline covariates		With demographic covariates added		With lifecycle covariates added		With transfer-payment covariates added		With immigrant origin and race/ethnicity covariates added	
Variable	Coefficient	Standard error	Coefficient	Standard error	Coefficient	Standard error	Coefficient	Standard error	Coefficient	Standard error
Earnings data sample										
Immigration cohort										
1955–1964	0.200*	0.111	0.052	0.091	0.003	0.059	-0.033	0.055	-0.030	0.049
1965–1974	-0.202**	0.096	-0.222***	0.070	-0.098**	0.048	-0.116**	0.048	-0.076*	0.041
1975–1984	-0.534***	0.088	-0.399***	0.070	-0.208***	0.053	-0.217***	0.050	-0.186***	0.046
1985 or later	-0.819***	0.090	-0.767***	0.087	-0.205***	0.077	-0.247***	0.077	-0.225***	0.070
Constant	9.909***	0.068	9.544***	0.074	7.396***	0.276	7.784***	0.278	7.946***	0.314
R-squared	0.105		0.323		0.490		0.562		0.606	
Observations	9,135		8,985		6,206		5,087		5,087	
Geocoded data sample										
Immigration cohort										
1955–1964	0.200*	0.111	0.052	0.091	0.070	0.052	0.022	0.043	0.054	0.046
1965–1974	-0.202**	0.096	-0.222***	0.070	-0.129***	0.042	-0.138***	0.043	-0.069	0.050
1975–1984	-0.534***	0.088	-0.399***	0.070	-0.250***	0.042	-0.256***	0.043	-0.196***	0.054
1985 or later	-0.819***	0.090	-0.767***	0.087	-0.440***	0.062	-0.496***	0.068	-0.447***	0.082
Constant	9.909***	0.068	9.544***	0.074	9.166***	0.053	9.176***	0.054	9.396***	0.071
R-squared	0.105		0.323		0.430		0.513		0.550	
Observations	9,135		8,985		8,985		7,175		7,175	

SOURCE: Authors' calculations based on HRS (1998–2012 waves), SSA earnings records, and geocoded data from HRS.

NOTES: An immigrant household comprises either a single immigrant or a married immigrant couple.

All covariate category specifications include a full set of year dummies.

Standard errors are clustered at the household level.

* = statistically significant at the $p < 0.10$ level; ** = statistically significant at the $p < 0.05$ level; *** = statistically significant at the $p < 0.01$ level.

Table 7.
Housing characteristics of all households with respondents aged 51 or older: Natives and immigrants by immigration cohort

	Homeownership rate			Home equity/net worth [a] ratio			Mortgage-holding rate [b]			Mortgage/home value ratio [c]		
		Probit regressions			Quantile regressions			Probit regressions			Quantile regressions	
Variable	Mean	Coefficient	Standard error	Median	Coefficient	Standard error	Mean	Coefficient	Standard error	Mean	Coefficient	Standard error
Native	0.76	. . .	. . .	0.51	. . .	. . .	0.42	. . .	. . .	0.39	. . .	. . .
Immigration cohort												
Pre-1955	0.64	-0.255***	0.069	0.68	0.032***	0.011	0.28	-0.042	0.084	0.36	-0.019	0.033
1955–1964	0.72	-0.119*	0.068	0.64	0.042***	0.016	0.45	0.143*	0.074	0.36	-0.024	0.026
1965–1974	0.64	-0.149**	0.065	0.83	0.031*	0.016	0.53	0.186**	0.075	0.40	-0.053***	0.020
1975–1984	0.60	-0.089	0.070	0.82	-0.020	0.018	0.59	0.274***	0.080	0.50	-0.025	0.032
1985 or later	0.46	-0.223**	0.091	0.79	-0.026	0.027	0.54	-0.053	0.095	0.60	0.042	0.037

SOURCE: Authors' calculations based on HRS (1998–2012 waves).

NOTES: Regressions include controls for age, marital status, separate indicators of whether an immigrant is married to an immigrant or a native, non-English speaking status, education, Hispanic origin, nonwhite race, family size, number of children, the natural logarithm of annualized comprehensive wealth, and a full set of year dummies.

Standard errors are clustered at the household level.

. . . = not applicable.

* = statistically significant at the $p < 0.10$ level; ** = statistically significant at the $p < 0.05$ level; *** = statistically significant at the $p < 0.01$ level.

a. Net worth of combined financial and nonfinancial wealth (annuitized wealth omitted).

b. Among homeowners.

c. Among mortgage-holders.

Table 8.

Health, business ownership, and expected bequest and longevity characteristics of all households with respondents aged 51 or older: Natives and immigrants by immigration cohort

	Presence of any out-of-pocket medical costs			Amount of out-of-pocket medical costs [a]			Business ownership rate			Business valuation/ net worth [b] ratio		
		Probit regressions			Quantile regressions			Probit regressions			Quantile regressions	
Variable	Mean	Coefficient	Standard error	Median ($)	Coefficient	Standard error	Mean	Coefficient	Standard error	Median	Coefficient	Standard error
Native	0.909	. . .	. . .	2,400	. . .	. . .	0.086	. . .	. . .	0.289	. . .	. . .
Immigration cohort												
Pre-1955	0.824	-0.181***	0.058	2,500	272.013*	144.134	0.027	-0.364***	0.118	0.284	-0.009	0.034
1955–1964	0.844	-0.141**	0.058	2,160	125.526	119.174	0.050	-0.214**	0.092	0.219	-0.020	0.035
1965–1974	0.795	-0.155***	0.057	2,160	122.403	121.022	0.021	-0.362***	0.109	0.265	-0.037	0.050
1975–1984	0.773	-0.150***	0.058	1,790	-39.083	122.120	0.047	0.098	0.103	0.313	0.109	0.075
1985 or later	0.799	0.089	0.073	1,660	-73.137	154.442	0.039	0.089	0.147	0.376	0.213**	0.092

(Continued)

	Probability of bequeathing more than $10,000			Probability of bequeathing more than $100,000			Ratio of own survival expectancy to SSA life table projection		
		OLS regressions			OLS regressions			OLS regressions	
Variable	Mean (%)	Coefficient	Standard error	Mean (%)	Coefficient	Standard error	Median	Coefficient	Standard error
Native	66.61	. . .	. . .	42.52	. . .	. . .	1.086	. . .	. . .
Immigration cohort									
Pre-1955	59.63	-2.424*	1.347	37.31	0.166	1.306	1.185	0.176*	0.096
1955–1964	62.39	-2.288	1.479	43.39	2.841**	1.446	1.074	-0.114**	0.049
1965–1974	51.15	-2.077	1.434	31.74	3.460**	1.378	0.962	-0.127***	0.039
1975–1984	45.97	-2.103	1.545	27.39	4.645***	1.401	0.996	-0.055	0.052
1985 or later	42.77	3.991*	2.076	25.51	14.180***	1.999	0.985	-0.002	0.057

SOURCE: Authors' calculations based on HRS (1998–2012 waves).

NOTES: Regressions include controls for age, marital status, separate indicators of whether an immigrant is married to an immigrant or a native, non-English speaking status, education, Hispanic origin, nonwhite race, family size, number of children, the natural logarithm of annualized comprehensive wealth, and a full set of year dummies.

Standard errors are clustered at the household level.

. . . = not applicable.

* = statistically significant at the $p < 0.10$ level; ** = statistically significant at the $p < 0.05$ level; *** = statistically significant at the $p < 0.01$ level.

a. Among respondents with costs.

b. Net worth of combined financial and nonfinancial wealth (annuitized wealth omitted).

Table 9.
Family transfer characteristics of all households with respondents aged 51 or older: Natives and immigrants by immigration cohort

Variable	Number of people in household beyond respondent (and spouse, if any)			Whether any child(ren) living outside the household but within 10 miles			Whether providing financial assistance [a] to child(ren)		
		OLS regressions			Probit regressions			Probit regressions	
	Mean	Coefficient	Standard error	Mean	Coefficient	Standard error	Mean	Coefficient	Standard error
Native	0.547	. . .	. . .	0.589	. . .	. . .	0.361	. . .	. . .
Immigration cohort									
Pre-1955	0.627	0.015**	0.007	0.551	-0.142**	0.059	0.309	0.137***	0.051
1955–1964	0.891	0.019**	0.009	0.561	-0.066	0.063	0.336	0.089	0.056
1965–1974	1.288	0.043***	0.009	0.562	-0.144**	0.059	0.315	0.168***	0.051
1975–1984	1.531	0.052***	0.008	0.579	-0.173***	0.064	0.265	0.076	0.054
1985 or later	1.791	0.041***	0.011	0.424	-0.486***	0.077	0.330	0.357***	0.065

(Continued)

Variable	Whether receiving financial assistance [a] from child(ren)			Whether providing financial assistance [a] to relatives other than child(ren)			Whether receiving financial assistance [a] from relatives other than child(ren)		
		Probit regressions			Probit regressions			Probit regressions	
	Mean	Coefficient	Standard error	Mean	Coefficient	Standard error	Mean	Coefficient	Standard error
Native	0.058	. . .	. . .	0.083	. . .	. . .	0.029	. . .	. . .
Immigration cohort									
Pre-1955	0.077	0.074	0.068	0.074	0.091	0.067	0.024	0.114	0.102
1955–1964	0.087	0.158**	0.072	0.103	0.075	0.066	0.017	-0.143*	0.083
1965–1974	0.107	0.154**	0.062	0.122	0.265***	0.060	0.022	-0.060	0.085
1975–1984	0.116	0.143**	0.066	0.146	0.409***	0.064	0.028	-0.026	0.086
1985 or later	0.113	0.013	0.074	0.146	0.464***	0.075	0.023	-0.331***	0.107

SOURCE: Authors' calculations based on HRS (1998–2012 waves).

NOTES: Regressions include controls for age, marital status, separate indicators of whether an immigrant is married to an immigrant or a native, non-English speaking status, education, Hispanic origin, nonwhite race, family size, number of children, the natural logarithm of annualized comprehensive wealth, and a full set of year dummies.

Standard errors are clustered at the household level.

. . . = not applicable.

* = statistically significant at the $p < 0.10$ level; ** = statistically significant at the $p < 0.05$ level; *** = statistically significant at the $p < 0.01$ level.

a. $500 or more.

wealth (outbound transfers) and a cause for concern about the adequacy of their resources (if current practice predicts future transfers).

Taken together, the results in Tables 7, 8, and 9 indicate that there are large differences in financial characteristics and behaviors between natives and successive waves of immigrants. If the returns to these characteristics were the same across groups, these differences would account for the decrease in the annualized wealth gaps that appear with each additional layer of controls in the regressions in Tables 5 and 6. Another possibility, however, is that groups have experienced different returns to these characteristics, so that education (for example) may be more or less important for some groups than it is for others.

We examine this possibility by decomposing the raw annualized wealth differences using the approach described in Melly (2005). Broadly, the procedure first approximates the conditional distribution by estimating a set of *n* quantile regressions. With the conditional distribution in hand, we can obtain the unconditional distribution by integrating the conditional distribution over the independent variables. Importantly, the procedure can provide counterfactual unconditional distributions. In our case, we are interested in counterfactual distributions of median annualized wealth that would arise if natives had the same quantile function (that is, the same coefficients) as different waves of immigrants. With these counterfactual distributions, we can decompose the raw differences in annualized wealth into parts explained either by different distributions of observables or by different returns to those observables.

Table 10 shows the results of the decompositions for each immigration cohort, as estimated using the baseline, demographic, lifecycle, and transfer covariates listed in Table 4. We omit the geographic and immigrant origin and race/ethnicity covariates because they pertain only to immigrants. Across cohorts, most of the raw differences in annualized wealth are attributable to differences in characteristics. This is not too surprising in light of the large differences in financial characteristics and behaviors between immigrants and natives shown in Tables 7–9. The full regression results in Appendix B make clear that the characteristics that most explain the gaps in annualized wealth are financial (relative shares of financial and nonfinancial wealth, home value, and business valuation), medical (out-of-pocket costs and self-reported health), and demographic (race, ethnicity, and per capita income of country of origin).

The pattern for returns to characteristics, however, is more interesting. Among the earliest waves of immigrants, the returns to characteristics close some of the raw gap in annualized wealth. With the most recent waves, however, this pattern reverses, and the returns to characteristics are negative. The most recent immigrant waves therefore appear to be falling behind in retirement preparation both because of characteristics such as education and lifetime earnings and because of the returns to those characteristics. For the most recent immigration cohort, 72 percent (−0.786/−1.085) of the raw difference can be explained by characteristics, and 28 percent (−0.299/−1.085) can be explained by returns.

Table 10.
Decomposition of differences from natives in the median annualized comprehensive wealth of immigrants among all households with a respondent aged 51 or older, by immigration cohort

Immigration cohort	Raw difference	Standard error	Effect of observable characteristics	Standard error	Effect of returns to characteristics	Standard error
Pre-1955	-0.167	0.036	-0.328	0.045	0.161	0.003
1955–1964	-0.248	0.029	-0.368	0.037	0.120	0.005
1965–1974	-0.597	0.031	-0.647	0.036	0.050	0.003
1975–1984	-0.973	0.027	-0.827	0.044	-0.145	0.004
1985 or later	-1.085	0.042	-0.786	0.042	-0.299	0.004

SOURCE: Authors' calculations based on HRS (1998–2012 waves) using the method described in Melly (2005).

NOTE: Values are quantile regressions estimated using the restricted earnings sample with controls for demographic, lifecycle, and transfer-payment covariates and a full set of year dummies. Geographic and immigrant origin and race/ethnicity covariates are omitted because they pertain only to immigrants.

Conclusion and Directions for Future Research

This article compares the total resources available to immigrants and natives in retirement. Although we find that immigrants have less wealth overall than natives, they appear to decumulate resources more slowly in retirement. Consistent with the literature on lifecycle wealth accumulation, we find some evidence that these patterns may be due to differential concentrations of illiquid wealth and use of bequests and transfers. Compared with natives, immigrant homeowners have higher shares of net worth in home equity and report being more likely to leave a bequest and make transfers to children and relatives. Each of these tendencies is likely to slow wealth decumulation. The concentration of wealth in housing is a factor if households are reluctant to tap into housing wealth, and bequests provide a stronger incentive to preserve wealth in retirement.

Our findings suggest that immigrants in general are relatively well situated in retirement, but that recent immigrants have low levels of total resources and are likely to have difficulty maintaining adequate levels of spending in retirement. In this sense, our sample of households may signify an important transition for the retirement well-being of immigrants. The patterns of immigrant retirement wealth will soon reflect the effects of the dramatic change in the composition of immigrants following the 1965 immigration reform. Our findings suggest that some of the newer immigrants, who may be better off than if they had remained in their countries of origin, are nonetheless likely to be particularly vulnerable, facing retirement with a combination of low Social Security benefits, low private pension coverage, and insufficient financial and nonfinancial wealth. Improving financial literacy and access to banking services could help narrow these gaps.

With these findings come caveats that also suggest topics for future research. First, because Social Security benefits are among the most important sources of retirement wealth for both immigrants and natives, a better understanding of the accumulation patterns by years of covered earnings would be useful. Although recent immigrants have fewer years of covered earnings, the progressive benefit calculation formula provides low lifetime earners with a higher replacement rate than high earners receive (Gustman and Steinmeier 2000). The extent to which this issue mitigates the disadvantage we find for recent immigrants is worth exploring. In addition, immigrants may be more likely than natives to work at older ages; Borjas (2011), for example, linked the retirement behavior of immigrants to their insured status for Social Security retirement benefits. Moreover, if the lower initial earnings of recent versus earlier immigrant cohorts reflect lower skill transferability (Duleep and Regets 1997), then one would expect recent immigrants to work longer than natives (or earlier immigrant entrants) to maximize the return on their greater human capital investment.

Immigrants might also have access to other resources that our measure of comprehensive wealth does not capture. Relative to natives, aged immigrants may receive more transfers from their children and other family members, which could reduce their financial vulnerability at retirement. Foreign assets could also reduce their vulnerability. Although HRS wealth questions aim to capture all components of total wealth, future research might assess whether HRS respondents underreport foreign assets. Finally, the possibility of return migration may mitigate the disadvantage in retirement resources faced by the most recent cohorts. Estimates of return migration range from about 15 percent to 30 percent (Borjas and Bratsberg 1996; Mayr and Peri 2008), with recent immigrants and those who immigrated at older ages tending to be more likely to return (Duleep 1994).

Future research could help to identify the extent to which low wealth, as measured in the HRS, corresponds with lower living standards in retirement. Differences by years in the United States also bear further examination. Although we could not isolate the effect of years in the United States from the cohort effect associated with the year of arrival, year of U.S. entry can be proxied with administrative records on first reported earnings (Duleep and Dowhan 2002). Using such information, a researcher could explore how much of the wealth gap between recent immigrants and natives is explained by years in the United States rather than a straight cohort effect linked to year of arrival.

Appendix A

Described below are our methodologies for constructing the comprehensive and annualized wealth measures.

Comprehensive Wealth

Comprehensive wealth combines current-market valuations for some components, such as 401(k) plans, with the actuarial present value of future cash flows, such Social Security benefits. We convert the current-wealth component values into 2012 dollars and add them together. To calculate future cash flows, we convert each reported income stream—Social Security, Supplemental Security Income, and any of the scores of annuity and pension types listed in the HRS—to present values for each respondent. Below we present the formulas for Social Security benefits and for other streams of payments.

Social Security. Let S_t^r denote the respondent's probability of surviving until age t (conditional on being alive in period $t-1$), and S_t^s denote the corresponding survival probability for the respondent's spouse. The formula for computing the present value of Social Security benefits is given by

$$PVSS_t = \sum_{a=0}^{T} \frac{(1+COLA_{t+a})\left[(x_{t+a}^r + x_{t+a}^s)S_{t+a}^r S_{t+a}^s + \max\left(x_{t+a}^r, x_{t+a}^s\right)\left(S_{t+a}^r + S_{t+a}^s - 2S_{t+a}^r S_{t+a}^s\right)\right]}{(1+i)^a},$$

where i is the nominal interest rate and x_t^r and x_t^s denote the benefit amounts at age t for the respondent and spouse, respectively. The first term in brackets accounts for the household's receipt of both the respondent's and the spouse's benefits when both are alive, and the second term reflects the surviving spouse's widow(er) benefits. If either partner dies, the survivor will receive the larger of the two benefit amounts.

Pension benefits and other payments. The present-value calculation for defined-benefit pensions, veteran's benefits, earnings to age 65, annuities, and other nonlabor income follows a similar procedure, except that we compute the present values separately for the respondent and the spouse, and we include a COLA and spousal benefits only if respondents report them in the survey. The formula for computing the present value of these annualized payments is given by

$$PV_t = \sum_{a=0}^{T} x_{t+a}^r \frac{(1+COLA_{t+a})[S_{t+a}^r + \theta_{t+a}(1-S_{t+a}^r)S_{t+a}^s]}{(1+i)^a},$$

where θ_t is the fraction of the payment remaining as a survivor's benefit. Note that the survivor's term in this equation differs from that of the Social Security formula because we compute the respondent's payments and not combined household payments.

Annualized Wealth

After computing the values of comprehensive wealth and its components, we convert those amounts to an annualized equivalent by determining how much one would have to pay for an actuarially fair, inflation-adjusted joint-life annuity that pays an equivalence of $\$\alpha$ when both members of the household are living and \$1 otherwise. The price of such an annuity is given by

$$P_t = \sum_{a=0}^{T} \frac{(1+COLA_{t+a})[\alpha S_{t+a}^r S_{t+a}^s + S_{t+a}^r(1-S_{t+a}^s) + S_{t+a}^s(1-S_{t+a}^r)]}{(1+i)^a},$$

where the survival probabilities again reflect differential mortality by education, race, ethnicity, and sex, as described in the article's "Data" section under "Estimating Annualized Wealth." The annualizing factors, ann_t, are household- and age-specific and equal to the reciprocal of the annuity price: $ann_t = {}^1/_{P_t}$.

The final step in computing annualized comprehensive wealth is simply to multiply the annualizing factors, ann_t, by the value of comprehensive wealth for each household. The result enables an approximate translation of total resources into an amount that households could spend each year, as if they were able to fully annuitize their current and future wealth.

Appendix B

Table B-1.
Complete coefficient estimates for the median regressions of the natural logarithm of annualized wealth for all households with respondents aged 51 or older (see Table 5): Restricted earnings sample only

Variable	Baseline covariates		With demographic covariates added		With lifecycle covariates added		With transfer-payment covariates added		With immigrant origin and race/ethnicity covariates added	
	Coefficient	Standard error	Coefficient	Standard error	Coefficient	Standard error	Coefficient	Standard error	Coefficient	Standard error
Immigration cohort										
Pre-1955	-0.222*	0.124	-0.053	0.073	0.051	0.040	0.050	0.056	0.105**	0.041
1955–1964	-0.147**	0.066	0.025	0.058	0.092**	0.042	0.063	0.039	0.125***	0.045
1965–1974	-0.626***	0.071	-0.147***	0.047	-0.029	0.036	-0.034	0.040	0.045	0.039
1975–1984	-0.932***	0.061	-0.311***	0.045	-0.145***	0.040	-0.162***	0.039	-0.080	0.049
1985 or later	-1.246***	0.070	-0.662***	0.073	-0.186***	0.052	-0.237***	0.078	-0.169**	0.074
Age										
65–74	0.084***	0.013	0.147***	0.010	0.023**	0.009	0.051***	0.008	0.051***	0.008
75 or older	0.189***	0.018	0.326***	0.014	0.131***	0.015	0.176***	0.012	0.178***	0.012
Married couple	. . .	. . .	0.288***	0.013	0.029**	0.012	0.012	0.011	0.012	0.011
Immigrant and immigrant	. . .	. . .	0.038	0.038	-0.069**	0.031	-0.063**	0.032	-0.055*	0.031
Immigrant and native	. . .	. . .	0.021	0.035	0.010	0.033	-0.005	0.029	-0.017	0.027
Naturalized citizen	. . .	. . .	0.077*	0.043	0.011	0.030	0.004	0.033	0.000	0.030
Non-English speaker	. . .	. . .	-0.178***	0.041	-0.098***	0.030	-0.100**	0.043	-0.075*	0.039
Education										
High school diploma	. . .	. . .	0.460***	0.016	0.188***	0.014	0.146***	0.011	0.146***	0.012
College degree	. . .	. . .	0.987***	0.019	0.492***	0.021	0.392***	0.018	0.391***	0.017
Race/ethnicity										
Hispanic—										
White	. . .	. . .	-0.502***	0.031	-0.239***	0.023	-0.224***	0.021	-0.201***	0.026
Nonwhite	. . .	. . .	-0.486***	0.038	-0.191***	0.026	-0.169***	0.030	-0.126***	0.032
Nonwhite non-Hispanic	. . .	. . .	-0.360***	0.016	-0.081***	0.016	-0.075***	0.013	-0.074***	0.014
Family size	. . .	. . .	-0.031***	0.004	-0.001	0.004	-0.004	0.003	-0.004	0.003
Number of children	. . .	. . .	-0.023***	0.003	-0.009***	0.002	-0.007***	0.002	-0.007***	0.002
Share of wealth from—										
Financial assets	. . .	. . .	. . .	. . .	0.019***	0.001	0.015***	0.001	0.015***	0.001
Nonfinancial assets	. . .	. . .	. . .	. . .	0.008***	0.001	0.007***	0.001	0.007***	0.001
Logarithm of average household earnings	. . .	. . .	. . .	. . .	0.099***	0.005	0.077***	0.005	0.076***	0.005
Standard deviation of logarithm of average household earnings	. . .	. . .	. . .	. . .	0.038**	0.016	0.014	0.014	0.014	0.014

(Continued)

Table B-1.
Complete coefficient estimates for the median regressions of the natural logarithm of annualized wealth for all households with respondents aged 51 or older (see Table 5): Restricted earnings sample only—*Continued*

	Baseline covariates		With demographic covariates added		With lifecycle covariates added		With transfer-payment covariates added		With immigrant origin and race/ethnicity covariates added	
Variable	Coefficient	Standard error	Coefficient	Standard error	Coefficient	Standard error	Coefficient	Standard error	Coefficient	Standard error
Homeowner	. . .	. . .	. . .	. . .	0.297***	0.017	0.213***	0.014	0.213***	0.014
Business owner	. . .	. . .	. . .	. . .	0.130***	0.018	0.076***	0.017	0.077***	0.017
Health status										
Good	. . .	. . .	. . .	. . .	-0.058***	0.009	-0.037***	0.008	-0.037***	0.008
Fair or poor	. . .	. . .	. . .	. . .	-0.154***	0.011	-0.117***	0.009	-0.117***	0.009
Medical out-of-pocket costs										
Middle tercile	. . .	. . .	. . .	. . .	0.069***	0.007	0.061***	0.007	0.062***	0.007
Highest tercile	. . .	. . .	. . .	. . .	0.068***	0.009	0.063***	0.009	0.064***	0.009
Expect to leave bequest										
Deemed likely, greater than $10,000	. . .	. . .	. . .	. . .	. . .	. . .	0.088***	0.008	0.087***	0.008
Deemed likely, greater than $100,000	. . .	. . .	. . .	. . .	. . .	. . .	0.250***	0.011	0.250***	0.011
Child(ren) within 10 miles	. . .	. . .	. . .	. . .	. . .	. . .	-0.013*	0.008	-0.012	0.008
Transfers										
To child(ren)	. . .	. . .	. . .	. . .	. . .	. . .	0.152***	0.007	0.150***	0.007
From child(ren)	. . .	. . .	. . .	. . .	. . .	. . .	-0.067***	0.012	-0.070***	0.012
To relative(s)	. . .	. . .	. . .	. . .	. . .	. . .	0.122***	0.013	0.124***	0.013
From relative(s)	. . .	. . .	. . .	. . .	. . .	. . .	-0.091***	0.020	-0.091***	0.020
Immigrant race/ethnicity										
Hispanic—										
White	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	-0.161***	0.050
Nonwhite	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	-0.112**	0.045
Nonwhite non-Hispanic	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	-0.075	0.047
Constant	10.342***	0.010	9.917***	0.020	8.137***	0.072	8.427***	0.071	8.431*	0.071
R-squared	0.066		0.348		0.381		0.526		0.526	
Observations	105,268		103,289		81,138		69,055		69,055	

SOURCE: Authors' calculations based on HRS (1998–2012 waves) and SSA earnings records.

NOTES: . . . = not applicable.

* = statistically significant at the $p < 0.10$ level; ** = statistically significant at the $p < 0.05$ level; *** = statistically significant at the $p < 0.01$ level.

Table B-2.
Complete coefficient estimates for the median regressions of the natural logarithm of annualized wealth for all households with respondents aged 51 or older (see Table 5): Restricted geocoded sample only

	Baseline covariates		With demographic covariates added		With lifecycle covariates added		With transfer-payment covariates added		With immigrant origin and race/ethnicity covariates added	
Variable	Coefficient	Standard error	Coefficient	Standard error	Coefficient	Standard error	Coefficient	Standard error	Coefficient	Standard error
Immigration cohort										
Pre-1955	-0.222*	0.124	-0.053	0.073	0.000	0.031	0.017	0.034	0.061	0.040
1955–1964	-0.147**	0.066	0.025	0.058	0.065	0.041	0.053	0.037	0.109***	0.042
1965–1974	-0.626***	0.071	-0.147***	0.047	-0.094**	0.039	-0.078*	0.041	-0.001	0.045
1975–1984	-0.932***	0.061	-0.311***	0.045	-0.204***	0.035	-0.216***	0.043	-0.126**	0.050
1985 or later	-1.246***	0.070	-0.662***	0.073	-0.414***	0.053	-0.464***	0.060	-0.355***	0.094
Age										
70–79	0.084***	0.013	0.147***	0.010	0.029***	0.008	0.058***	0.008	0.056*	0.008
80 or older	0.189***	0.018	0.326***	0.014	0.118***	0.012	0.178***	0.013	0.178***	0.013
Married couple	. . .	. . .	0.288***	0.013	0.120***	0.010	0.084***	0.009	0.084***	0.009
Immigrant and immigrant	. . .	. . .	0.038	0.038	-0.066**	0.031	-0.056**	0.029	-0.047	0.032
Immigrant and native	. . .	. . .	0.021	0.035	-0.013	0.027	-0.016	0.027	-0.016	0.026
Naturalized citizen	. . .	. . .	0.077*	0.043	0.032	0.027	0.000	0.029	0.010	0.030
Non-English speaker	. . .	. . .	-0.178***	0.041	-0.180***	0.029	-0.149***	0.034	-0.148***	0.027
Education										
High school diploma	. . .	. . .	0.460***	0.016	0.227***	0.011	0.169***	0.010	0.168***	0.010
College degree	. . .	. . .	0.987***	0.019	0.535***	0.018	0.418***	0.017	0.417***	0.017
Race/ethnicity										
Hispanic—										
White	. . .	. . .	-0.502***	0.031	-0.262***	0.021	-0.254***	0.020	-0.226***	0.020
Nonwhite	. . .	. . .	-0.486***	0.038	-0.223***	0.027	-0.224***	0.025	-0.208***	0.028
Nonwhite non-Hispanic	. . .	. . .	-0.360***	0.016	-0.132***	0.013	-0.111***	0.012	-0.109***	0.012
Family size	. . .	. . .	-0.030***	0.004	-0.007**	0.003	-0.009***	0.003	-0.009***	0.003
Number of children	. . .	. . .	-0.023***	0.003	-0.009***	0.002	-0.007***	0.002	-0.007***	0.002
Share of wealth from—										
Financial assets	. . .	. . .	. . .	. . .	0.018***	0.001	0.014***	0.001	0.014***	0.001
Nonfinancial assets	. . .	. . .	. . .	. . .	0.007***	0.001	0.006***	0.000	0.007***	0.000
Urban residence	. . .	. . .	. . .	. . .	0.162***	0.008	0.124***	0.008	0.120***	0.008
Homeowner	. . .	. . .	. . .	. . .	0.375***	0.015	0.277***	0.013	0.276***	0.013
Business owner	. . .	. . .	. . .	. . .	0.182***	0.018	0.113***	0.017	0.112***	0.017

(Continued)

Table B-2.
Complete coefficient estimates for the median regressions of the natural logarithm of annualized wealth for all households with respondents aged 51 or older (see Table 5): Restricted geocoded sample only—*Continued*

Variable	Baseline covariates		With demographic covariates added		With lifecycle covariates added		With transfer-payment covariates added		With immigrant origin and race/ethnicity covariates added	
	Coefficient	Standard error	Coefficient	Standard error	Coefficient	Standard error	Coefficient	Standard error	Coefficient	Standard error
Health status										
Good	. . .	. . .	. . .	. . .	-0.069***	0.008	-0.045***	0.007	-0.045***	0.007
Fair or poor	. . .	. . .	. . .	. . .	-0.168***	0.010	-0.121***	0.009	-0.121***	0.009
Medical out-of-pocket costs										
Middle tercile	. . .	. . .	. . .	. . .	0.099***	0.007	0.074***	0.006	0.074***	0.006
Highest tercile	. . .	. . .	. . .	. . .	0.102***	0.008	0.089***	0.008	0.088***	0.008
Expect to leave bequest										
Deemed likely, greater than $10,000	. . .	. . .	. . .	. . .	. . .	. . .	0.093***	0.008	0.094***	0.008
Deemed likely, greater than $100,000	. . .	. . .	. . .	. . .	. . .	. . .	0.257***	0.012	0.256***	0.012
Child(ren) within 10 miles	. . .	. . .	. . .	. . .	. . .	. . .	-0.016**	0.007	-0.016**	0.007
Transfers										
To child(ren)	. . .	. . .	. . .	. . .	. . .	. . .	0.159***	0.007	0.158***	0.007
From child(ren)	. . .	. . .	. . .	. . .	. . .	. . .	-0.077***	0.010	-0.080***	0.010
To relative(s)	. . .	. . .	. . .	. . .	. . .	. . .	0.134***	0.011	0.133***	0.011
From relative(s)	. . .	. . .	. . .	. . .	. . .	. . .	-0.101***	0.017	-0.101***	0.017
Immigrant origin										
Country per capita income										
High-middle	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	-0.086**	0.040
Low-middle	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	-0.112**	0.050
Low	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	-0.074	0.069
Mexico	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	-0.101***	0.036
Constant	10.342***	0.010	9.917***	0.020	9.389***	0.017	9.378***	0.019	9.377***	0.018
R-squared	0.066		0.348		0.285		0.389		0.389	
Observations	105,268		103,289		103,289		86,382		86,382	

SOURCE: Authors' calculations based on HRS (1998–2012 waves) and geocoded data from HRS.

NOTES: . . . = not applicable.

* = statistically significant at the $p < 0.10$ level; ** = statistically significant at the $p < 0.05$ level; *** = statistically significant at the $p < 0.01$ level.

Table B-3.
Complete coefficient estimates for the OLS regressions of the natural logarithm of annualized wealth for all households with respondents aged 51 or older (see Table 5): Restricted earnings sample only

	Baseline covariates		With demographic covariates added		With lifecycle covariates added		With transfer-payment covariates added		With immigrant origin and race/ethnicity covariates added	
Variable	Coefficient	Standard error	Coefficient	Standard error	Coefficient	Standard error	Coefficient	Standard error	Coefficient	Standard error
Immigration cohort										
Pre-1955	-0.183***	0.051	-0.063	0.048	0.048	0.045	0.049	0.043	0.091**	0.046
1955–1964	-0.129**	0.055	0.036	0.053	0.097*	0.051	0.056	0.047	0.107**	0.050
1965–1974	-0.551***	0.044	-0.125***	0.047	-0.008	0.047	-0.041	0.043	0.044	0.051
1975–1984	-0.776***	0.045	-0.298***	0.047	-0.122**	0.062	-0.159***	0.045	-0.070	0.054
1985 or later	-1.172***	0.065	-0.686***	0.066	-0.280***	0.076	-0.354***	0.080	-0.271***	0.083
Age										
65–74	0.132***	0.010	0.165***	0.008	0.126***	0.012	0.135***	0.009	0.135***	0.009
75 or older	0.255***	0.013	0.366***	0.012	0.367***	0.027	0.364***	0.018	0.365***	0.018
Married couple	. . .	. . .	0.295***	0.010	0.022*	0.012	-0.006	0.011	-0.006	0.011
Immigrant and immigrant	. . .	. . .	-0.015	0.037	-0.028	0.034	-0.044	0.032	-0.035	0.032
Immigrant and native	. . .	. . .	-0.020	0.028	0.026	0.029	0.004	0.025	-0.006	0.025
Naturalized citizen	. . .	. . .	0.133***	0.036	0.028	0.037	0.020	0.035	0.029	0.035
Non-English speaker	. . .	. . .	-0.246***	0.040	-0.144***	0.039	-0.113***	0.038	-0.089**	0.039
Education										
High school diploma	. . .	. . .	0.427***	0.013	0.260***	0.015	0.180***	0.012	0.180***	0.012
College degree	. . .	. . .	0.936***	0.017	0.635***	0.026	0.464***	0.018	0.464***	0.018
Race/ethnicity										
Hispanic—										
White	. . .	. . .	-0.515***	0.023	-0.350***	0.028	-0.295***	0.021	-0.265***	0.024
Nonwhite	. . .	. . .	-0.516***	0.032	-0.295***	0.035	-0.245***	0.033	-0.166***	0.035
Nonwhite non-Hispanic	. . .	. . .	-0.360***	0.013	-0.170***	0.021	-0.122***	0.014	-0.118***	0.014
Family size	. . .	. . .	-0.035***	0.004	-0.016***	0.004	-0.015***	0.003	-0.015***	0.003
Number of children	. . .	. . .	-0.020***	0.002	-0.016***	0.003	-0.011***	0.002	-0.011***	0.002
Share of wealth from—										
Financial assets	. . .	. . .	. . .	. . .	0.005**	0.002	0.005***	0.001	0.005***	0.001
Nonfinancial assets	. . .	. . .	. . .	. . .	0.002**	0.001	0.003***	0.001	0.003***	0.001
Logarithm of average household earnings	. . .	. . .	. . .	. . .	0.098***	0.005	0.074***	0.005	0.074***	0.005
Standard deviation of logarithm of average household earnings	. . .	. . .	. . .	. . .	0.005	0.015	-0.010	0.015	-0.011	0.015

(Continued)

Table B-3.
Complete coefficient estimates for the OLS regressions of the natural logarithm of annualized wealth for all households with respondents aged 51 or older (see Table 5): Restricted earnings sample only—*Continued*

	Baseline covariates		With demographic covariates added		With lifecycle covariates added		With transfer-payment covariates added		With immigrant origin and race/ethnicity covariates added	
Variable	Coefficient	Standard error	Coefficient	Standard error	Coefficient	Standard error	Coefficient	Standard error	Coefficient	Standard error
Homeowner	. . .	. . .	. . .	. . .	0.480***	0.027	0.302***	0.018	0.300***	0.018
Business owner	. . .	. . .	. . .	. . .	0.258***	0.025	0.154***	0.020	0.155***	0.020
Health status										
Good	. . .	. . .	. . .	. . .	-0.097***	0.011	-0.056***	0.008	-0.056***	0.008
Fair or poor	. . .	. . .	. . .	. . .	-0.231***	0.016	-0.147***	0.010	-0.147***	0.010
Medical out-of-pocket costs										
Middle tercile	. . .	. . .	. . .	. . .	0.100***	0.009	0.075***	0.007	0.074***	0.007
Highest tercile	. . .	. . .	. . .	. . .	0.128***	0.011	0.106***	0.009	0.106***	0.009
Expect to leave bequest										
Deemed likely, greater than $10,000	. . .	. . .	. . .	. . .	. . .	. . .	0.102***	0.008	0.102***	0.008
Deemed likely, greater than $100,000	. . .	. . .	. . .	. . .	. . .	. . .	0.351***	0.013	0.351***	0.013
Child(ren) within 10 miles	. . .	. . .	. . .	. . .	. . .	. . .	-0.008	0.008	-0.009	0.008
Transfers										
To child(ren)	. . .	. . .	. . .	. . .	. . .	. . .	0.169***	0.007	0.168***	0.007
From child(ren)	. . .	. . .	. . .	. . .	. . .	. . .	-0.106***	0.012	-0.105***	0.012
To relative(s)	. . .	. . .	. . .	. . .	. . .	. . .	0.147***	0.012	0.146***	0.012
From relative(s)	. . .	. . .	. . .	. . .	. . .	. . .	-0.161***	0.018	-0.161***	0.018
Immigrant race/ethnicity										
Hispanic—										
White	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	-0.238***	0.068
Nonwhite	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	-0.131***	0.045
Nonwhite non-Hispanic	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	-0.097**	0.047
Constant	10.292***	0.008	9.937***	0.017	8.347***	0.078	8.578***	0.070	8.578***	0.070
R-squared	0.067		0.350		0.521		0.600		0.600	
Observations	105,268		103,289		81,138		69,055		69,055	

SOURCE: Authors' calculations based on HRS (1998–2012 waves) and SSA earnings records.

NOTES: . . . = not applicable.

* = statistically significant at the $p < 0.10$ level; ** = statistically significant at the $p < 0.05$ level; *** = statistically significant at the $p < 0.01$ level.

Table B-4.
Complete coefficient estimates for the OLS regressions of the natural logarithm of annualized wealth for all households with respondents aged 51 or older (see Table 5): Restricted geocoded sample only

	Baseline covariates		With demographic covariates added		With lifecycle covariates added		With transfer-payment covariates added		With immigrant origin and race/ethnicity covariates added	
Variable	Coefficient	Standard error	Coefficient	Standard error	Coefficient	Standard error	Coefficient	Standard error	Coefficient	Standard error
Immigration cohort										
Pre-1955	-0.183***	0.051	-0.063	0.048	-0.016	0.040	-0.006	0.041	0.047	0.042
1955–1964	-0.120**	0.055	0.036	0.053	0.037	0.044	0.022	0.043	0.096**	0.046
1965–1974	-0.551***	0.044	-0.125***	0.047	-0.095**	0.040	-0.116***	0.040	-0.010	0.047
1975–1984	-0.776***	0.045	-0.298***	0.047	-0.242***	0.048	-0.250***	0.040	-0.126***	0.048
1985 or later	-1.172***	0.065	-0.686***	0.066	-0.565***	0.060	-0.596***	0.066	-0.483***	0.069
Age										
70–79	0.132***	0.010	0.165***	0.008	0.132***	0.009	0.151***	0.009	0.151***	0.009
80 or older	0.255***	0.013	0.366***	0.012	0.361***	0.019	0.391***	0.018	0.392***	0.018
Married couple	. . .	. . .	0.295***	0.010	0.109***	0.010	0.051***	0.009	0.050***	0.009
Immigrant and immigrant	. . .	. . .	-0.015	0.037	-0.025	0.032	-0.027	0.032	-0.016	0.031
Immigrant and native	. . .	. . .	-0.020	0.028	-0.008	0.026	-0.008	0.023	-0.015	0.023
Naturalized citizen	. . .	. . .	0.133***	0.036	0.090***	0.032	0.071**	0.032	0.072**	0.032
Non-English speaker	. . .	. . .	-0.246***	0.040	-0.230***	0.034	-0.175***	0.034	-0.164***	0.034
Education										
High school diploma	. . .	. . .	0.427***	0.013	0.285***	0.012	0.195***	0.010	0.194***	0.010
College degree	. . .	. . .	0.936***	0.017	0.665***	0.020	0.487***	0.016	0.487***	0.016
Race/ethnicity										
Hispanic—										
White	. . .	. . .	-0.515***	0.023	-0.405***	0.021	-0.351***	0.020	-0.320***	0.020
Nonwhite	. . .	. . .	-0.516***	0.032	-0.370***	0.029	-0.331***	0.028	-0.315***	0.028
Nonwhite non-Hispanic	. . .	. . .	-0.360***	0.013	-0.248***	0.017	-0.189***	0.015	-0.183***	0.015
Family size	. . .	. . .	-0.035***	0.004	-0.025***	0.003	-0.022***	0.003	-0.021***	0.003
Number of children	. . .	. . .	-0.020***	0.002	-0.015***	0.002	-0.013***	0.002	-0.012***	0.002
Share of wealth from—										
Financial assets	. . .	. . .	. . .	. . .	0.003**	0.001	0.002*	0.001	0.002*	0.001
Nonfinancial assets	. . .	. . .	. . .	. . .	0.002**	0.001	0.002***	0.001	0.002***	0.001
Urban residence	. . .	. . .	. . .	. . .	0.195***	0.009	0.142***	0.008	0.141***	0.008
Homeowner	. . .	. . .	. . .	. . .	0.556***	0.019	0.369***	0.015	0.370***	0.015
Business owner	. . .	. . .	. . .	. . .	0.302***	0.020	0.194***	0.016	0.195***	0.016

(Continued)

Table B-4.
Complete coefficient estimates for the OLS regressions of the natural logarithm of annualized wealth for all households with respondents aged 51 or older (see Table 5): Restricted geocoded sample only—Continued

Variable	Baseline covariates		With demographic covariates added		With lifecycle covariates added		With transfer-payment covariates added		With immigrant origin and race/ethnicity covariates added	
	Coefficient	Standard error	Coefficient	Standard error	Coefficient	Standard error	Coefficient	Standard error	Coefficient	Standard error
Health status										
Good	. . .	. . .	. . .	. . .	-0.106***	0.008	-0.064***	0.007	-0.064***	0.007
Fair or poor	. . .	. . .	. . .	. . .	-0.248***	0.011	-0.158***	0.009	-0.158***	0.009
Medical out-of-pocket costs										
Middle tercile	. . .	. . .	. . .	. . .	0.128***	0.007	0.093***	0.007	0.093***	0.007
Highest tercile	. . .	. . .	. . .	. . .	0.166***	0.009	0.134***	0.009	0.134***	0.009
Expect to leave bequest										
Deemed likely, greater than $10,000	. . .	. . .	. . .	. . .	. . .	. . .	0.115***	0.008	0.115***	0.008
Deemed likely, greater than $100,000	. . .	. . .	. . .	. . .	. . .	. . .	0.372***	0.013	0.372***	0.013
Child(ren) within 10 miles	. . .	. . .	. . .	. . .	. . .	. . .	-0.014*	0.007	-0.014**	0.007
Transfers										
To child(ren)	. . .	. . .	. . .	. . .	. . .	. . .	0.185***	0.007	0.185***	0.007
From child(ren)	. . .	. . .	. . .	. . .	. . .	. . .	-0.125***	0.011	-0.124***	0.011
To relative(s)	. . .	. . .	. . .	. . .	. . .	. . .	0.153***	0.011	0.153***	0.011
From relative(s)	. . .	. . .	. . .	. . .	. . .	. . .	-0.173***	0.017	-0.172***	0.017
Immigrant origin										
Country per capita income										
High-middle	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	-0.121***	0.042
Low-middle	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	-0.166***	0.050
Low	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	-0.171***	0.054
Mexico	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	-0.096**	0.045
Constant	10.292***	0.008	9.937***	0.017	9.539***	0.021	9.480***	0.020	9.475***	0.020
R-squared	0.067		0.350		0.494		0.571		0.572	
Observations	105,268		103,289		103,289		86,382		86,382	

SOURCE: Authors' calculations based on HRS (1998–2012 waves) and geocoded data from HRS.

NOTES: . . . = not applicable.

* = statistically significant at the $p < 0.10$ level; ** = statistically significant at the $p < 0.05$ level; *** = statistically significant at the $p < 0.01$ level.

Table B-5.
Complete coefficient estimates for the median regressions of the natural logarithm of annualized wealth for immigrant households with respondents aged 51 or older (see Table 6): Restricted earnings sample only

Variable	Baseline covariates		With demographic covariates added		With lifecycle covariates added		With transfer-payment covariates added		With immigrant origin and race/ethnicity covariates added	
	Coefficient	Standard error	Coefficient	Standard error	Coefficient	Standard error	Coefficient	Standard error	Coefficient	Standard error
Immigration cohort										
1955–1964	0.200*	0.111	0.052	0.091	-0.012	0.058	-0.019	0.053	-0.029	0.048
1965–1974	-0.202**	0.096	-0.222***	0.070	-0.109**	0.046	-0.101**	0.048	-0.080*	0.041
1975–1984	-0.534***	0.088	-0.399***	0.070	-0.225***	0.050	-0.208***	0.050	-0.187***	0.045
1985 or later	-0.819***	0.090	-0.767***	0.087	-0.209***	0.071	-0.233***	0.069	-0.242***	0.078
Age										
65–74	. . .	. . .	0.068**	0.032	0.051	0.025	0.089***	0.025	0.072***	0.023
75 or older	. . .	. . .	0.157***	0.051	0.155***	0.038	0.225***	0.039	0.194***	0.037
Married			0.257***	0.042	-0.072**	0.034	-0.094***	0.033	-0.058*	0.033
Naturalized citizen	. . .	. . .	0.111**	0.047	-0.003	0.032	-0.009	0.031	0.022	0.032
Education										
High school diploma	. . .	. . .	0.560***	0.050	0.219***	0.038	0.183***	0.036	0.148***	0.036
College degree	. . .	. . .	1.177***	0.060	0.493***	0.059	0.385***	0.058	0.320***	0.061
Family size	. . .	. . .	-0.032***	0.011	-0.011	0.007	-0.002	0.007	0.003	0.007
Number of children	. . .	. . .	-0.026***	0.008	-0.006	0.006	-0.005	0.007	-0.005	0.007
Share of wealth from—										
Financial assets	. . .	. . .	. . .	. . .	0.023***	0.002	0.019***	0.002	0.015***	0.002
Nonfinancial assets	. . .	. . .	. . .	. . .	0.008***	0.001	0.007***	0.001	0.006***	0.001
Logarithm of average household earnings	. . .	. . .	. . .	. . .	0.162***	0.021	0.127***	0.020	0.129***	0.023
Standard deviation of logarithm of average household earnings	. . .	. . .	. . .	. . .	0.036	0.047	-0.007	0.050	-0.008	0.054
Homeowner	. . .	. . .	. . .	. . .	0.272***	0.041	0.196***	0.039	0.196***	0.033
Business owner	. . .	. . .	. . .	. . .	0.195**	0.092	0.054	0.086	0.045	0.099
Health status										
Good	. . .	. . .	. . .	. . .	-0.068*	0.036	-0.080**	0.040	-0.046	0.032
Fair or poor	. . .	. . .	. . .	. . .	-0.213***	0.041	-0.194***	0.043	-0.152***	0.037
Medical out-of-pocket costs										
Middle tercile	. . .	. . .	. . .	. . .	0.213***	0.059	0.130***	0.045	0.080	0.054
Highest tercile	. . .	. . .	. . .	. . .	0.132**	0.052	0.090*	0.049	0.059	0.045

(Continued)

Table B-5.
Complete coefficient estimates for the median regressions of the natural logarithm of annualized wealth for immigrant households with respondents aged 51 or older (see Table 6): Restricted earnings sample only—*Continued*

Variable	Baseline covariates		With demographic covariates added		With lifecycle covariates added		With transfer-payment covariates added		With immigrant origin and race/ethnicity covariates added	
	Coefficient	Standard error	Coefficient	Standard error	Coefficient	Standard error	Coefficient	Standard error	Coefficient	Standard error
Expect to leave bequest										
Deemed likely, greater than $10,000	. . .	. . .	. . .	. . .	. . .	. . .	0.063**	0.027	0.057**	0.026
Deemed likely, greater than $100,000	. . .	. . .	. . .	. . .	. . .	. . .	0.239***	0.041	0.250***	0.036
Child(ren) within 10 miles	. . .	. . .	. . .	. . .	. . .	. . .	0.000	0.024	0.000	0.023
Transfers										
To child(ren)	. . .	. . .	. . .	. . .	. . .	. . .	0.220***	0.029	0.186***	0.027
From child(ren)	. . .	. . .	. . .	. . .	. . .	. . .	-0.017	0.035	-0.016	0.030
To relative(s)	. . .	. . .	. . .	. . .	. . .	. . .	0.085**	0.034	0.108***	0.036
From relative(s)	. . .	. . .	. . .	. . .	. . .	. . .	-0.110	0.088	-0.027	0.085
Immigrant race/ethnicity										
Hispanic—										
White	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	-0.327***	0.052
Nonwhite	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	-0.337***	0.060
Nonwhite non-Hispanic	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	-0.200***	0.058
Constant	9.909***	0.068	9.544***	0.074	7.302***	0.285	7.737***	0.270	7.937***	0.309
R-squared	0.105		0.323		0.489		0.560		0.606	
Observations	9,135		8,985		6,206		5,087		5,087	

SOURCE: Authors' calculations based on HRS (1998–2012 waves) and SSA earnings records.

NOTES: . . . = not applicable.

* = statistically significant at the $p < 0.10$ level; ** = statistically significant at the $p < 0.05$ level; *** = statistically significant at the $p < 0.01$ level.

Table B-6.
Complete coefficient estimates for the median regressions of the natural logarithm of annualized wealth for immigrant households with respondents aged 51 or older (see Table 6): Restricted geocoded sample only

	Baseline covariates		With demographic covariates added		With lifecycle covariates added		With transfer-payment covariates added		With immigrant origin and race/ethnicity covariates added	
Variable	Coefficient	Standard error	Coefficient	Standard error	Coefficient	Standard error	Coefficient	Standard error	Coefficient	Standard error
Immigration cohort										
1955–1964	0.200*	0.111	0.052	0.091	0.070	0.052	0.022	0.043	0.054	0.046
1965–1974	-0.202**	0.096	-0.222***	0.070	-0.129***	0.042	-0.138***	0.043	-0.069	0.050
1975–1984	-0.534***	0.088	-0.399***	0.070	-0.250***	0.042	-0.256***	0.043	-0.196***	0.054
1985 or later	-0.819***	0.090	-0.767***	0.087	-0.440***	0.062	-0.496***	0.068	-0.447***	0.082
Age										
70–79	. . .	. . .	0.068**	0.032	0.080***	0.027	0.093***	0.023	0.056**	0.025
80 or older	. . .	. . .	0.157***	0.051	0.157***	0.032	0.195***	0.033	0.152***	0.035
Married			0.257***	0.042	0.026	0.031	0.003	0.029	0.017	0.030
Naturalized citizen	. . .	. . .	0.560***	0.050	0.286***	0.038	0.225***	0.035	0.147***	0.038
Education										
High school diploma	. . .	. . .	1.177***	0.060	0.556***	0.057	0.391***	0.053	0.327***	0.052
College degree	. . .	. . .	0.111**	0.047	0.019	0.029	0.002	0.028	0.009	0.031
Family size	. . .	. . .	-0.032***	0.011	-0.027***	0.007	-0.018***	0.006	-0.010	0.007
Number of children	. . .	. . .	-0.026***	0.008	-0.002	0.005	-0.003	0.005	0.004	0.006
Share of wealth from—										
Financial assets	. . .	. . .	. . .	. . .	0.022***	0.002	0.020***	0.002	0.017***	0.002
Nonfinancial assets	. . .	. . .	. . .	. . .	0.006***	0.001	0.005***	0.001	0.005***	0.001
Urban residence	. . .	. . .	. . .	. . .	0.245***	0.032	0.214***	0.028	0.173***	0.033
Homeowner	. . .	. . .	. . .	. . .	0.442***	0.045	0.351***	0.034	0.364***	0.034
Business owner	. . .	. . .	. . .	. . .	0.207**	0.086	0.077	0.071	0.033	0.076
Health status										
Good	. . .	. . .	. . .	. . .	-0.125***	0.033	-0.111***	0.031	-0.092***	0.032
Fair or poor	. . .	. . .	. . .	. . .	-0.283***	0.036	-0.230***	0.035	-0.183***	0.035
Medical out-of-pocket costs										
Middle tercile	. . .	. . .	. . .	. . .	0.142***	0.023	0.095***	0.022	0.079***	0.022
Highest tercile	. . .	. . .	. . .	. . .	0.149***	0.028	0.113***	0.026	0.090***	0.029

(Continued)

Table B-6.
Complete coefficient estimates for the median regressions of the natural logarithm of annualized wealth for immigrant households with respondents aged 51 or older (see Table 6): Restricted geocoded sample only—Continued

Variable	Baseline covariates		With demographic covariates added		With lifecycle covariates added		With transfer-payment covariates added		With immigrant origin and race/ethnicity covariates added	
	Coefficient	Standard error	Coefficient	Standard error	Coefficient	Standard error	Coefficient	Standard error	Coefficient	Standard error
Expect to leave bequest										
Deemed likely, greater than $10,000	. . .	. . .	. . .	. . .	. . .	. . .	0.034	0.027	0.048**	0.024
Deemed likely, greater than $100,000	. . .	. . .	. . .	. . .	. . .	. . .	0.277***	0.034	0.265***	0.034
Child(ren) within 10 miles	. . .	. . .	. . .	. . .	. . .	. . .	-0.006	0.021	-0.014	0.022
Transfers										
To child(ren)	. . .	. . .	. . .	. . .	. . .	. . .	0.244***	0.025	0.218***	0.024
From child(ren)	. . .	. . .	. . .	. . .	. . .	. . .	-0.051*	0.031	-0.051	0.033
To relative(s)	. . .	. . .	. . .	. . .	. . .	. . .	0.117***	0.034	0.154***	0.036
From relative(s)	. . .	. . .	. . .	. . .	. . .	. . .	-0.155**	0.079	-0.159*	0.094
Immigrant race/ethnicity										
Hispanic—										
White	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	-0.257***	0.051
Nonwhite	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	-0.284***	0.060
Nonwhite non-Hispanic	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	-0.069	0.058
Immigrant origin										
Country per capita income										
High-middle	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	-0.072*	0.043
Low-middle	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	-0.138**	0.054
Low	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	-0.084	0.056
Mexico	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	-0.067	0.046
Constant	9.909***	0.068	9.544***	0.074	9.166***	0.053	9.176***	0.054	9.396***	0.071
R-squared	0.105		0.323		0.430		0.513		0.550	
Observations	9,135		8,985		8,985		7,175		7,175	

SOURCE: Authors' calculations based on HRS (1998–2012 waves) and geocoded data from HRS.

NOTES: . . . = not applicable.

* = statistically significant at the $p < 0.10$ level; ** = statistically significant at the $p < 0.05$ level; *** = statistically significant at the $p < 0.01$ level.

Table B-7.
Complete coefficient estimates for the OLS regressions of the natural logarithm of annualized wealth for immigrant households with respondents aged 51 or older (see Table 6): Restricted earnings sample only

Variable	Baseline covariates		With demographic covariates added		With lifecycle covariates added		With transfer-payment covariates added		With immigrant origin and race/ethnicity covariates added	
	Coefficient	Standard error	Coefficient	Standard error	Coefficient	Standard error	Coefficient	Standard error	Coefficient	Standard error
Immigration cohort										
1955–1964	0.166**	0.080	0.116	0.073	0.027	0.058	0.001	0.056	0.002	0.054
1965–1974	-0.257***	0.068	-0.216***	0.060	-0.138***	0.052	-0.140***	0.051	-0.073	0.049
1975–1984	-0.493***	0.068	-0.413***	0.063	-0.273***	0.059	-0.242***	0.057	-0.182***	0.054
1985 or later	-0.886***	0.086	-0.799***	0.085	-0.312***	0.092	-0.369***	0.090	-0.340***	0.089
Age										
65–74	. . .	. . .	0.141***	0.032	0.146***	0.033	0.171***	0.033	0.123***	0.031
75 or older	. . .	. . .	0.315***	0.049	0.369***	0.053	0.415***	0.053	0.324***	0.047
Married			0.288***	0.041	-0.046	0.038	-0.090**	0.038	-0.074**	0.037
Naturalized citizen	. . .	. . .	0.156***	0.043	0.040	0.039	0.022	0.037	0.040	0.036
Education										
High school diploma	. . .	. . .	0.513***	0.047	0.289***	0.041	0.218***	0.038	0.146***	0.038
College degree	. . .	. . .	1.105***	0.065	0.593***	0.075	0.432***	0.070	0.331***	0.069
Family size	. . .	. . .	-0.056***	0.010	-0.022**	0.009	-0.007	0.009	0.000	0.009
Number of children	. . .	. . .	-0.032***	0.009	-0.015**	0.007	-0.017**	0.008	-0.013*	0.007
Share of wealth from—										
Financial assets	. . .	. . .	. . .	. . .	0.009**	0.004	0.007*	0.004	0.006*	0.003
Nonfinancial assets	. . .	. . .	. . .	. . .	0.004***	0.001	0.003**	0.002	0.003*	0.001
Logarithm of average household earnings	. . .	. . .	. . .	. . .	0.179	0.019	0.141***	0.019	0.134***	0.018
Standard deviation of logarithm of average household earnings	. . .	. . .	. . .	. . .	0.007	0.052	-0.006	0.049	-0.006	0.048
Homeowner	. . .	. . .	. . .	. . .	0.438***	0.051	0.306***	0.048	0.294***	0.045
Business owner	. . .	. . .	. . .	. . .	0.315***	0.095	0.127	0.095	0.091	0.088
Health status										
Good	. . .	. . .	. . .	. . .	-0.104***	0.038	-0.080**	0.039	-0.053	0.038
Fair or poor	. . .	. . .	. . .	. . .	-0.281***	0.042	-0.217***	0.041	-0.161***	0.041
Medical out-of-pocket costs										
Middle tercile	. . .	. . .	. . .	. . .	0.159***	0.058	0.110*	0.061	0.099*	0.058
Highest tercile	. . .	. . .	. . .	. . .	0.207***	0.058	0.146**	0.060	0.130**	0.056

(Continued)

Table B-7.
Complete coefficient estimates for the OLS regressions of the natural logarithm of annualized wealth for immigrant households with respondents aged 51 or older (see Table 6): Restricted earnings sample only—*Continued*

Variable	Baseline covariates		With demographic covariates added		With lifecycle covariates added		With transfer-payment covariates added		With immigrant origin and race/ethnicity covariates added	
	Coefficient	Standard error	Coefficient	Standard error	Coefficient	Standard error	Coefficient	Standard error	Coefficient	Standard error
Expect to leave bequest										
Deemed likely, greater than $10,000	. . .	. . .	. . .	. . .	. . .	. . .	0.082***	0.031	0.089***	0.030
Deemed likely, greater than $100,000	. . .	. . .	. . .	. . .	. . .	. . .	0.345***	0.044	0.309***	0.039
Child(ren) within 10 miles	. . .	. . .	. . .	. . .	. . .	. . .	0.005	0.026	0.015	0.026
Transfers										
To child(ren)	. . .	. . .	. . .	. . .	. . .	. . .	0.273***	0.031	0.227***	0.028
From child(ren)	. . .	. . .	. . .	. . .	. . .	. . .	-0.080**	0.040	-0.071*	0.039
To relative(s)	. . .	. . .	. . .	. . .	. . .	. . .	0.155***	0.043	0.161***	0.043
From relative(s)	. . .	. . .	. . .	. . .	. . .	. . .	-0.218	0.133	-0.243*	0.126
Immigrant race/ethnicity										
Hispanic—										
White	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	-0.453***	0.059
Nonwhite	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	-0.473***	0.072
Nonwhite non-Hispanic	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	-0.277***	0.066
Constant	10.048***	0.049	9.623***	0.067	7.168***	0.259	7.593***	0.253	7.970***	0.247
R-squared	0.108		0.334		0.568		0.626		0.653	
Observations	9,135		8,985		6,206		5,087		5,087	

SOURCE: Authors' calculations based on HRS (1998–2012 waves) and SSA earnings records.

NOTES: . . . = not applicable.

* = statistically significant at the $p < 0.10$ level; ** = statistically significant at the $p < 0.05$ level; *** = statistically significant at the $p < 0.01$ level.

Table B-8.
Complete coefficient estimates for the OLS regressions of the natural logarithm of annualized wealth for immigrant households with respondents aged 51 or older (see Table 6): Restricted geocoded sample only

	Baseline covariates		With demographic covariates added		With lifecycle covariates added		With transfer-payment covariates added		With immigrant origin and race/ethnicity covariates added	
Variable	Coefficient	Standard error	Coefficient	Standard error	Coefficient	Standard error	Coefficient	Standard error	Coefficient	Standard error
Immigration cohort										
1955–1964	0.166**	0.080	0.116	0.073	0.082	0.052	0.057	0.051	0.088*	0.050
1965–1974	-0.257***	0.068	-0.216***	0.060	-0.145***	0.046	-0.161***	0.046	-0.066	0.047
1975–1984	-0.493***	0.068	-0.413***	0.063	-0.308***	0.051	-0.286***	0.051	-0.189***	0.053
1985 or later	-0.886***	0.086	-0.799***	0.085	-0.588***	0.074	-0.623***	0.077	-0.566***	0.076
Age										
70–79	. . .	. . .	0.141***	0.032	0.170***	0.029	0.206***	0.030	0.142***	0.029
80 or older	. . .	. . .	0.315***	0.049	0.387***	0.043	0.433***	0.046	0.332***	0.042
Married			0.288***	0.041	0.068*	0.035	0.018	0.036	0.029	0.035
Naturalized citizen	. . .	. . .	0.156***	0.043	0.112***	0.034	0.081**	0.034	0.078**	0.033
Education										
High school diploma	. . .	. . .	0.513***	0.047	0.331***	0.038	0.254***	0.037	0.154***	0.039
College degree	. . .	. . .	1.105***	0.065	0.657***	0.060	0.464***	0.060	0.347***	0.062
Family size	. . .	. . .	-0.056***	0.010	-0.043***	0.008	-0.031***	0.009	-0.020**	0.008
Number of children	. . .	. . .	-0.032***	0.009	-0.014**	0.007	-0.014*	0.007	-0.004	0.007
Share of wealth from—										
Financial assets	. . .	. . .	. . .	. . .	0.008***	0.002	0.007**	0.003	0.006**	0.003
Nonfinancial assets	. . .	. . .	. . .	. . .	0.001	0.001	0.001	0.001	0.000	0.001
Urban residence	. . .	. . .	. . .	. . .	0.260***	0.035	0.207***	0.034	0.200***	0.036
Homeowner	. . .	. . .	. . .	. . .	0.656***	0.049	0.484***	0.052	0.490***	0.050
Business owner	. . .	. . .	. . .	. . .	0.348***	0.082	0.148*	0.084	0.134*	0.078
Health status										
Good	. . .	. . .	. . .	. . .	-0.161***	0.034	-0.134***	0.036	-0.092***	0.035
Fair or poor	. . .	. . .	. . .	. . .	-0.379***	0.038	-0.283***	0.039	-0.206***	0.037
Medical out-of-pocket costs										
Middle tercile	. . .	. . .	. . .	. . .	0.199***	0.025	0.126***	0.026	0.098***	0.025
Highest tercile	. . .	. . .	. . .	. . .	0.217***	0.032	0.152***	0.033	0.118***	0.030

(Continued)

Table B-8.
Complete coefficient estimates for the OLS regressions of the natural logarithm of annualized wealth for immigrant households with respondents aged 51 or older (see Table 6): Restricted geocoded sample only—Continued

Variable	Baseline covariates		With demographic covariates added		With lifecycle covariates added		With transfer-payment covariates added		With immigrant origin and race/ethnicity covariates added	
	Coefficient	Standard error	Coefficient	Standard error	Coefficient	Standard error	Coefficient	Standard error	Coefficient	Standard error
Expect to leave bequest										
Deemed likely, greater than $10,000	. . .	. . .	. . .	. . .	. . .	. . .	0.065**	0.030	0.072**	0.029
Deemed likely, greater than $100,000	. . .	. . .	. . .	. . .	. . .	. . .	0.393***	0.038	0.368***	0.035
Child(ren) within 10 miles	. . .	. . .	. . .	. . .	. . .	. . .	-0.017	0.026	-0.011	0.025
Transfers										
To child(ren)	. . .	. . .	. . .	. . .	. . .	. . .	0.282***	0.027	0.233***	0.025
From child(ren)	. . .	. . .	. . .	. . .	. . .	. . .	-0.119***	0.037	-0.110***	0.036
To relative(s)	. . .	. . .	. . .	. . .	. . .	. . .	0.198***	0.043	0.213***	0.042
From relative(s)	. . .	. . .	. . .	. . .	. . .	. . .	-0.216**	0.104	-0.225**	0.099
Immigrant race/ethnicity										
Hispanic—										
White	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	-0.381***	0.057
Nonwhite	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	-0.439***	0.065
Nonwhite non-Hispanic	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	-0.116*	0.066
Immigrant origin										
Country per capita income										
High-middle	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	-0.107**	0.049
Low-middle	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	-0.182***	0.063
Low	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	-0.190***	0.062
Mexico	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	-0.081	0.053
Constant	10.048***	0.049	9.623***	0.067	9.201***	0.068	9.172***	0.076	9.468***	0.084
R-squared	0.108		0.334		0.514		0.577		0.606	
Observations	9,135		8,985		8,985		7,175		7,175	

SOURCE: Authors' calculations based on HRS (1998–2012 waves) and geocoded data from HRS.

NOTES: . . . = not applicable.

* = statistically significant at the $p < 0.10$ level; ** = statistically significant at the $p < 0.05$ level; *** = statistically significant at the $p < 0.01$ level.

Notes

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[1] Previous policy prioritized Western European immigrants and largely excluded immigrants from Asia, Africa, and Latin America.

[2] Borjas (1999), Blau and others (2003), and Duleep and Dowhan (2008) include literature reviews of these studies.

[3] For brevity, we refer to individuals born in the United States, regardless of race or ethnicity, as "natives."

[4] We discuss literature on immigrant resources more fully in the "Background" section.

[5] Melly (2005) presents the decomposition methodology.

[6] For a review of literature exploring the effects of immigration on social benefits, see Kerr and Kerr (2013).

[7] The HRS is sponsored by the National Institute on Aging (grant number NIA U01AG009740) and is conducted by the University of Michigan. We use the RAND HRS Data File, version N, as well as the wave-specific RAND "fat files." The RAND version of the HRS consists of an easy-to-use longitudinal file (the main file) and wave-specific enhanced fat files that can be merged at the respondent level. The RAND HRS was developed with funding from the National Institute on Aging and the Social Security Administration.

[8] Respondents who report ownership of an asset are asked its value. Respondents who answer that they don't know are asked a series of questions to try to pinpoint a range for the value. For example, "Is it less than $25,000, more than $25,000, or about $25,000?" If the answer is more, a similar question with a higher range of values follows, and so forth.

[9] We cannot distinguish between documented and undocumented immigrants in our data. The Immigration Reform and Control Act of 1986 offered amnesty to most undocumented immigrants who had entered the country before 1982. Nearly 3 million immigrants received amnesty as a result. The majority of the immigrants in our sample entered the country before 1982 and those who were undocumented were therefore eligible for the amnesty.

[10] For immigrants, we cannot differentiate the effects of arrival cohort and of age at arrival because age at arrival is just a function of age, survey year, and year of arrival.

[11] The wealth questions in the HRS are meant to capture total wealth, including foreign assets. However, if foreign assets are underreported, we might underestimate the retirement resources of immigrants.

[12] The linear approximations capture the change in the ratios very closely and ease the implementation of the numerical calculations in this article.

[13] The HRS reports whether a respondent is white, black, or "other." For "other," we apply the relevant adjustment for "white." Brown, Liebman, and Pollet did not have enough data to estimate mortality rates for black college graduates. We estimate an adjustment factor by assuming that the mortality of black college graduates has the same proportion to black high school graduates as that of white college graduates to white high school graduates. The data in Brown, Liebman, and Pollet (2001) also do not support separate mortality rates for Hispanics by education. For Hispanic respondents, we therefore account for differential mortality only by sex.

[14] Our measure does not allow for differences in survival probabilities by immigration status or country of origin. Sevak and Schmidt (2008) found that immigrants experience lower age-specific mortality rates, which is consistent with findings in the public health and demography literatures (see Singh and Siahpush 2001; Dupre, Gu, and Vaupel 2012; Lariscy, Hummer, and Hayward 2015; and Mehta and others 2016).

[15] Some immigrants may be covered by a bilateral *totalization agreement* between the United States and a partner country that allows Social Security eligibility and benefit amounts to be based on earnings accrued in both countries (Barrick and Kestenbaum 2013). The expected Social Security benefits that those immigrants report may not account for that coverage. Because most U.S. totalization agreements are with industrialized countries in Europe and Asia, any discrepancies resulting from the omission of totalized benefits would lead us to underestimate retirement resources for immigrants more at the upper end of the wealth distribution than at the lower end (Sevak and Schmidt 2014).

[16] Our measure does not account for the possibility that married couples might divorce during the retirement period.

[17] Gustman, Steinmeier, and Tabatabai (2010) discussed substantial reporting error in the HRS pension wealth measures because of confusion among some respondents about pension plan type, despite detailed follow-up questions asked of respondents who provide inconsistent answers to initial queries about plan type and features. To the extent that reporting errors and overall levels of plan information vary randomly across respondents, the self-reported measures primarily increase the noisiness of our comprehensive wealth estimates. However, if information about plan type and plan characteristics depends systemically on demographics, resources, or (most importantly) immigration

status, our measure of total household resources may be subject to an important additional source of bias.

[18] We define households as married if the respondent reports being married in the first survey wave in which he or she enters our sample, regardless of subsequent changes. The sample therefore includes and defines as "married" some individuals who were divorced or widowed in later waves. We define a "married immigrant household" as one in which both the respondent and the spouse were born outside the United States. Using this definition results in the largest measured immigrant-native wealth gaps because couples comprising one immigrant and one native tend to have higher wealth than do couples comprising two immigrants. We consider a more flexible definition of married immigrant households, and single households, in the regression analysis that follows.

[19] Results for single men and single women are available from authors on request (david.love@williams.edu; lschmidt@williams.edu).

[20] Another measure could be based on replacement rates (annuitized value of converted assets as a percentage of preretirement income). Given lower preretirement income for immigrants, that measure would likely generate much smaller immigrant-native gaps.

[21] The procedure involves four steps. First, compute the 2-year growth rate in wealth in the pooled HRS sample. Second, estimate a median regression of growth rates on 5-year age dummies, household characteristics, and a set of survey-year dummies. Third, construct predicted growth rates for each age dummy. Fourth, cumulate the predicted growth rates and "anchor" the profiles using the age-70 levels of median wealth.

[22] To the extent that immigrant respondents may underreport foreign assets, the convergence of annualized wealth profiles in Chart 3 may partly reflect the fact that immigrants are able to preserve a larger share of comprehensive wealth by financing some retirement spending with the unreported foreign assets.

[23] As with comprehensive wealth, the slope of the profiles may reflect other factors as well, such as cohort effects or capital gains in housing and financial assets that disproportionately benefit older households. Given the sharp differences in wealth between recent and earlier immigrants, cohort differences may drive some of the upward slope in annualized wealth. Note, however, that the cohort effect has to involve differences in the *growth rate* and not just levels of wealth, given that we base the profiles on predicted median growth rates of annualized wealth.

[24] For example, suppose that our sample consists of only three households. Household A has an annual wealth level of $20,000 and a growth rate of 5 percent, household B has an annual wealth level of $50,000 and a growth rate of 2 percent, and household C has an annual wealth level of $70,000 and a growth rate of 7 percent. In this example, household B has the median level of annual wealth ($50,000), while household A has the median growth rate of wealth (5 percent). The median wealth trajectories in this case would reflect wealth information from two distinct households, showing a growth rate of 5 percent but a level of $50,000.

[25] We take the within-household means to mitigate the contemporaneous correlation between the shares and annualized wealth that is due to slow portfolio rebalancing in the wake of asset price changes.

[26] Parents whose children do not live close to them may have to pay for services that their children would otherwise provide. These parents may therefore be less financially prepared than their observed measures would indicate.

[27] Appendix B contains tables showing the coefficients on the household characteristic variables, which are generally consistent with expectations.

[28] OLS estimates in Appendix B show the same basic pattern at the mean, with somewhat larger differences in implied wealth accumulation for the most recent immigrant cohorts.

[29] OLS estimates in Appendix B show a similar pattern, although the magnitudes differ.

[30] Beyond the typical challenges faced by the most recent arrivals, members of the post-1984 cohort are much less likely than members of earlier cohorts to have benefited from the amnesty given in the 1986 Immigration Reform and Control Act.

[31] Control variables include age, marital status, separate indicators for whether immigrants are married to an immigrant or to a native, whether the respondent speaks English, education, Hispanic origin, whether nonwhite, family size, presence of children, and the natural logarithm of annualized comprehensive wealth. The regressions also control for a full set of year dummies, and standard errors are clustered at the household level.

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