

# How much income do retirees actually have?

Authors: Anqi Chen, Alicia Haydock Munnell, Geoffrey T. Sanzenbacher

Persistent link: <http://hdl.handle.net/2345/bc-ir:108249>

This work is posted on [eScholarship@BC](#),  
Boston College University Libraries.

---

Chestnut Hill, Mass.: Center for Retirement Research at Boston College, November 2018

These materials are made available for use in research, teaching and private study, pursuant to U.S. Copyright Law. The user must assume full responsibility for any use of the materials, including but not limited to, infringement of copyright and publication rights of reproduced materials. Any materials used for academic research or otherwise should be fully credited with the source. The publisher or original authors may retain copyright to the materials.

# HOW MUCH INCOME DO RETIREES ACTUALLY HAVE?

BY ANQI CHEN, ALICIA H. MUNNELL, AND GEOFFREY T. SANZENBACHER\*

---

## Introduction

How much income retirees actually have seems like a straightforward question. Researchers often rely on nationally representative surveys to measure the financial resources available to households and inform evaluations of the employer retirement system and the Social Security program. But recent research has undermined confidence in survey data by focusing attention on the understatement of retirement income in one specific dataset – the *Current Population Survey* (CPS) – and thereby has called into question prior studies showing many households are not well-prepared for retirement. The question is whether other datasets frequently used by researchers also underestimate retirement income and, if so, by how much and where in the income distribution?

This *brief*, based on a recent paper, compares administrative data from the Internal Revenue Service (IRS) and the Social Security Administration (SSA) to measures of retirement income reported in the CPS and four other commonly used datasets: 1) the *Survey of Consumer Finances* (SCF); 2) the *Health and Retirement Study* (HRS); 3) the *Panel Survey of Income Dynamics* (PSID); and 4) the *Survey of Income and Program Participation* (SIPP).<sup>1</sup>

The discussion proceeds as follows. The first section describes, for each dataset, the survey design and definition of retirement income. The second section compares retirement income from each dataset with aggregate administrative data, while the third section compares each dataset with administrative data across the income distribution. The fourth section presents the results in the context of the percentage of households at risk of facing a retirement shortfall. The final section concludes that while recent research suggests that older households may have a lot more income than is captured in survey data, those results are unique to the CPS. Other survey data provide income estimates that are much more consistent with administrative data and still suggest that about half of households face a retirement shortfall.

## Data

It has been well documented that the CPS underreports retirement income relative to other sources.<sup>2</sup> Bee and Mitchell (2017) has refocused attention on this underreporting by linking the 2012 CPS to

---

\* Anqi Chen is the assistant director of savings research at the Center for Retirement Research at Boston College (CRR). Alicia H. Munnell is director of the CRR and the Peter F. Drucker Professor of Management Sciences at Boston College's Carroll School of Management. Geoffrey T. Sanzenbacher is the associate director of research at the CRR. The authors thank Melanie Qing for excellent research assistance.

administrative records from the IRS and SSA. The question is how retirement income reported in other datasets, which are commonly used in research, compares to administrative data. The following discussion describes the five nationally representative datasets used in this analysis.

### *Current Population Survey*

The CPS was originally designed to measure the monthly unemployment rate for the civilian non-institutionalized population, but now also conducts supplements to capture more information on a household's economic situation. Prior studies have found that the CPS understates the resources households have access to in retirement because it defines income as money received on a regular basis.<sup>3</sup> As such, it may not capture income from defined contribution (DC) plans, such as 401(k)s and IRAs, which generally do not pay out regular income streams.<sup>4</sup> In response to these concerns, the Census Bureau redesigned the CPS in 2015, adding and re-ordering questions to better assess sources of income for older and lower-income households.<sup>5</sup> This *brief* uses the 2017 CPS March Supplement, so it provides insight into how the redesigned questions compare with other surveys.

### *Survey of Consumer Finances*

The SCF is a triennial survey designed to capture comprehensive information on household assets and debts, income amounts and sources, investments, pensions, spending, and interactions with credit markets. It is often considered the “gold standard” for data on household income and wealth.<sup>6</sup> This analysis uses the most recent SCF, conducted in 2016.

In contrast with the CPS, both regular income and irregular income are captured since respondents are allowed to answer “no regular payment” or “varies” when asked about the frequency of payments or withdrawals. The SCF design also lends itself to capturing a complete picture of the income distribution because, in addition to extensive questions, it purposely oversamples higher-wealth households. While these individuals generally have lower response rates and thus may be excluded completely from other surveys, they own a relatively large share of aggregate net worth. The SCF does have a number of disadvantages relative to other surveys: it is conducted only once every three years; it is a cross-sectional dataset instead

of a panel; and it surveys a relatively small sample of households and thus ends up with a small sample of workers near retirement.

### *Health and Retirement Study*

The HRS is a panel survey of households in which the head is ages 51 or older. The goal of the HRS is to examine how health, economic, social, and psychological factors interact to influence outcomes just prior to and in retirement. The survey collects in-depth information on income, work histories, assets, pensions, health insurance, disability, physical health and functioning, cognitive function, and health care expenditures. This *brief* uses the 2016 early release from the HRS linked with Social Security administrative earnings histories.<sup>7</sup> Similar to the SCF, the HRS allows respondents to record one-time payments and asks extensive questions about different sources of income. Additionally, in 2012, the HRS revalidated prior information provided on employer-sponsored plans for each respondent. The HRS design helps ensure more accurate responses and captures both regular income from retirement plans and annuities and occasional or non-recurring withdrawals.

### *Survey of Income and Program Participation*

The main objective of the SIPP is to evaluate the eligibility of households for federal, state, and local government programs and their use of these programs. Because many programs have both income and asset tests, the SIPP provides detailed data on cash and non-cash income, tax payments, and information on assets and debts.<sup>8</sup> This study uses the 2014 redesigned SIPP.<sup>9</sup> Prior to the redesign, the SIPP interviewed individuals every four months for roughly two to five years. To reduce administrative and respondent burden, the 2014 SIPP changed this structure and now collects data annually through a single questionnaire. A sample of SIPP respondents are then surveyed again about their retirement plan participation, contributions, and withdrawals, among other questions. This redesign focused on the structure of the survey, and retirement income questions remained unchanged. While past studies have suggested SIPP estimates of post-retirement income are lower than estimates from other datasets, this analysis provides an early look at the redesigned data.<sup>10</sup>

## Panel Study of Income Dynamics

The PSID is a household panel survey that has followed a nationally representative sample of families since 1968. The intergenerational nature of the PSID provides valuable information on the long-run dynamics of income, wealth, employment, and family structure of the original respondents across generations. This *brief* uses the 2014 panel of the PSID.

The PSID does not contain a specific question on withdrawals from 401(k)s/IRAs. Rather it asks about the amount received from retirement pay, annuities, or pensions.<sup>11</sup> The line of questioning in the PSID does not specify that respondents include irregular or non-recurring income payments nor does it explicitly exclude them, like the CPS. It simply asks how much in total was received in the calendar year.

## Aggregate Income

The first step is to compare aggregate income from each of the five datasets to the administrative records from the IRS's Statistics of Income 1040 forms (for employer defined benefit and defined contribution plans and for interest and dividends) and SSA's *Annual Statistical Supplement* (for Social Security benefits).<sup>12</sup> Administrative data are used as the benchmark because they are considered the most accurate measure, as they are the official source of record.

Table 1 shows that the SCF tracks closest to administrative data, accounting for 98 percent of the retirement income reported by administrative sources. The HRS and SIPP also provide reliable estimates, accounting for 96 percent and 93 percent of administrative aggregates, respectively. The one area in which these two datasets underreport income is interest and dividends, where the HRS accounts for 83 percent of administrative data and the SIPP accounts for only 60 percent. Because interest and dividends represent only a small share of total retirement income, the effect on the aggregate comparison is relatively modest.

The PSID falls somewhat short of the administrative data, tracking administrative aggregates at a rate of 81 percent.<sup>13</sup> Underreporting in the PSID is also most pronounced for the interest and dividend income category. This result is no surprise, because the overwhelming majority of interest and dividend income is earned by very high-income households and the HRS, PSID, and SIPP do not oversample these individuals, potentially leaving them out of the sample entirely – an issue that weighting cannot fix.

TABLE 1. AGGREGATE RETIREMENT INCOME FOR ALL HOUSEHOLDS AGES 65+ AS A PERCENTAGE OF ADMINISTRATIVE DATA, BY SURVEY

Survey	Retirement plan	Social Security <sup>14</sup>	Interest and dividends	Total
SCF	99%	95%	106%	98%
HRS	94	104	83	96
SIPP	97	99	60	93
PSID	85	85	59	81
CPS	47	78	48	61

Notes: Aggregates for retirement plans and interest and dividends are from IRS SOI reports from Form 1040. Social Security estimates are from the *Annual Statistical Supplement*. Capital gains and losses are excluded.

Sources: IRS SOI Table 1.5 (2014, 2016); SSA *Annual Statistical Supplement* (2015, 2017); CPS ASEC (2017); HRS (2016); SCF (2016); PSID (2014); and SIPP (2014).

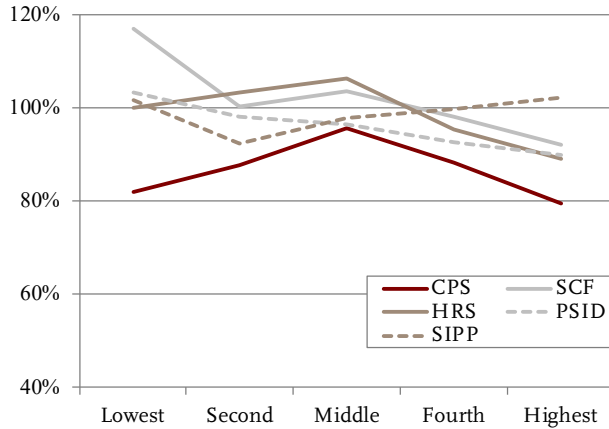
As expected, the CPS severely underreports income from all sources, especially income from retirement plans, an issue the redesign does not seem to have corrected.<sup>15</sup> This finding is consistent with Bee and Mitchell (2017) and much of the other literature conducted before the redesign.

## Distribution of Income

Given that aggregates can mask underlying discrepancies, it is important to understand where in the income distribution these shortfalls occur.<sup>16</sup> If, for example, differences across datasets are mainly due to the fact that very high-income households are not represented, then the income measurements should be relatively consistent across datasets in the middle and lower quintiles of the distribution.<sup>17</sup>

Figure 1 (on the next page) compares Social Security income from the administrative data to each of the five datasets. The results show that Social Security income for all the datasets, except the CPS, aligns closely to the administrative values at each quintile across the distribution. The CPS, on the other hand, understates Social Security income by about 20 percent at both the top and bottom of the income distribution.

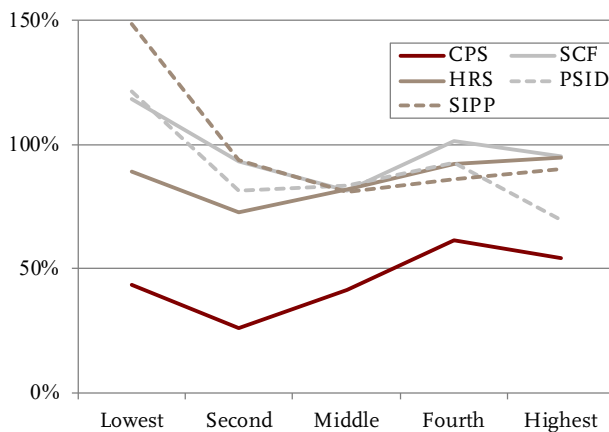
FIGURE 1. AVERAGE INCOME FROM SOCIAL SECURITY FOR HOUSEHOLDS AGES 65+, BY SURVEY AND INCOME QUINTILE



Sources: Authors' calculations from Bee and Mitchell (2017); IRS SOI (2012, 2014, 2016); SCF (2016); HRS (2016); PSID (2014); SIPP (2014); and CPS (2016).

Estimates of income from retirement plans across datasets show the same pattern described in the aggregate section. The SCF, HRS, and the SIPP provide estimates that are largely consistent with administrative data at all points in the income distribution (see Figure 2). While, at first glance, the SIPP seems to

FIGURE 2. AVERAGE INCOME FROM RETIREMENT PLANS FOR HOUSEHOLDS AGES 65+, BY SURVEY AND INCOME QUINTILE



Sources: Authors' calculations from Bee and Mitchell (2017); IRS SOI (2012, 2014, 2016); SCF (2016); HRS (2016); PSID (2014); SIPP (2014); and CPS (2016).

overstate income from retirement plans at the bottom of the income distribution, the dollar differences are small, so small variations can skew the percentages. The PSID provides reliable estimates of income from retirement plans for the bottom 80 percent of households. For older households in the highest quintile, the PSID underestimates income from retirement plans by 31 percent. The CPS substantially understates income from retirement plans for all households across the income distribution. At the median, the gap between the CPS and administrative estimates of retirement income is 59 percent.

The takeaway is that, once again, the CPS is an outlier. All other datasets – the SCF, HRS, SIPP, and PSID – provide reliable estimates of retirement income from Social Security and retirement plans for the bottom 80 percent of the income distribution. The SCF, HRS, and SIPP provide income measurements consistent with administrative data, even for top-quintile households.

## Will Retirees Have Enough?

The evidence thus far shows that retirement income estimates from four commonly used surveys – the SCF, HRS, SIPP, and PSID – are largely consistent with administrative data, especially in the middle of the income distribution. However, in order to determine whether households have enough financial resources in retirement, it is useful to estimate the replacement rate – a ratio of *post*-retirement income to *pre*-retirement income.<sup>18</sup>

For this exercise, the analysis relies on only one of the five datasets, the HRS. The numerator of the replacement rate (post-retirement income) comes directly from the HRS. For the denominator, the HRS has a unique benefit of being a panel dataset that can be merged with administrative earnings records, an important feature for this exercise.

The denominator for the replacement rate (pre-retirement income) can be defined in many different ways.<sup>19</sup> This analysis presents estimates for four definitions of pre-retirement income:

- *Final-year earnings*: provides an immediate measure of earnings just before retirement, but they are likely to be volatile and lower than a typical year of earnings.<sup>20</sup>

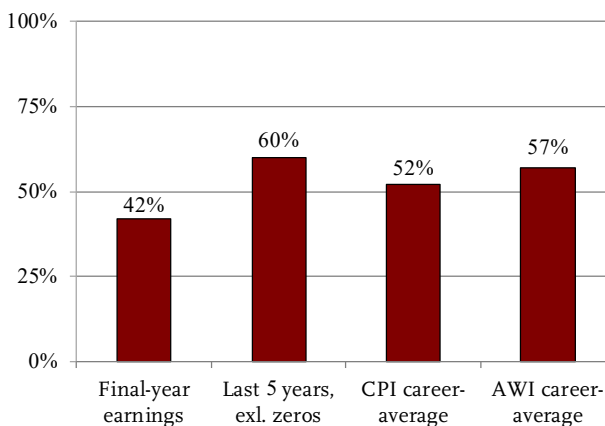
- *Last five years of earnings, excluding zeros*: smooths some of the volatility in final-year earnings, but may understate lifetime income for households that shift to part-time work before retirement or overstate pre-retirement income for households that hit peak earnings right before retirement.
- *CPI-indexed career average earnings*: allows earnings to keep up with inflation, but does not account for productivity gains achieved during a household's working career.<sup>21</sup> By understating actual wage growth, this measure does not allow households to maintain the standard of living they achieved at the end of their careers.
- *Average-wage-indexed career average earnings*: accounts for economy-wide wage growth and is the measure used by the OECD to compare Social Security and pension benefits across countries.

To give these replacement rates a bit more context, a general rule-of-thumb is that households should target a replacement rate of roughly 75 percent to maintain the same standard of living in retirement. Figure 3 shows the percentage of households that would fall short of the rule-of-thumb under each definition. While the percentage of households at risk of not having enough income in retirement varies by definition, they all suggest that about half of households – between 42 and 60 percent – may fall short.

## Conclusion

Recent research by Bee and Mitchell (2017) has renewed concern around the accuracy of income measurements in the CPS, and some have wondered if this problem applies to retirement income estimates in other survey datasets as well. Such speculation has led some to question prior work suggesting that a large proportion of the population is ill-prepared for retirement.

FIGURE 3. PERCENTAGE OF HOUSEHOLDS AGES 65+ AT RISK, BY DEFINITION OF PRE-RETIREMENT INCOME



Note: Retirement income includes Social Security, retirement plans, and interest and dividends.

Source: Authors' calculations.

The findings indicate that the most commonly used surveys – such as the SCF, HRS, PSID, and SIPP – provide measures of retirement income that track closely with administrative data, especially in the middle of the income distribution. The SCF, HRS, and SIPP in particular, tend to fit the administrative data throughout the distribution. Using the HRS, the replacement rate calculations – under various definitions of pre-retirement earnings – suggest that roughly half of households are likely to fall short of a target replacement rate of 75 percent.

More broadly, this paper suggests that researchers should feel comfortable using the SCF, HRS, PSID, or SIPP to draw conclusions about retirement income for the typical older household. Concerns about the CPS are well-placed, but fortunately other measures of retirement income are available and generally accurate.

## Endnotes

- 1 Chen, Munnell, and Sanzenbacher (2018).
- 2 See Schieber (1995); Woods (1996); Czajka and Denmead (2008); Fisher (2008); Davies and Fisher (2009); Iams and Purcell (2013); Munnell and Chen (2014); and Miller and Schieber (2014).
- 3 See Fisher (2008); Davies and Fisher (2009); Iams and Purcell (2013); and Munnell and Chen (2014) for more analysis.
- 4 The *brief* uses 401(k)s/IRAs to describe all defined contribution retirement accounts.
- 5 In particular, questions were added explicitly on withdrawals from all 401(k), 403(b), and IRA accounts – in the past, the survey only mentioned “pensions or retirement income” broadly. Additional questions in the redesign distinguish whether the withdrawals were rolled over or reinvested. However, respondents are still primed with questions about the frequency of these withdrawals (i.e. whether payments are received weekly, monthly, quarterly, or annually), likely limiting responses for one-time or irregular distributions. Other features of the redesign include: individual questions to identify each income source; separate questions on the amount from each source; and question re-ordering based on income level and age to minimize misreporting and the effect of respondent fatigue. Follow-up questions were also added in case these income questions are unanswered.
- 6 See the literature review in Chen, Munnell, and Sanzenbacher (2018) for examples of studies that find the SCF performs well when compared to administrative data, both in terms of income and wealth.
- 7 Version 2 of the 2016 early release did not include the younger cohort of households that were due to be added. Since the analysis in this *brief* focuses on households ages 65+, they would already be included in the existing panel survey participants. The 2016 early release contains about 97 percent of the panel participants, so results would not vary much with the final release.
- 8 The SIPP also asks about the amount from each source separately: “How much did ... withdraw from 401(k), 403(b), or thrift plan accounts during 2010?”, and “How much did ... withdraw from IRA accounts during 2010?”
- 9 The analysis uses Wave 2 of the data released in August 2018.
- 10 Czajka and Denmead (2008).
- 11 The PSID asks about the source and amount of income separately: “Not including Veteran’s Administration pensions, how many different pensions, IRAs or annuities did [you/[head]] receive income from in 2010?” and “How much was it?”
- 12 The sample used in this paper consists of households, both couples and singles, ages 65 and older. If other members of the household or family are surveyed, their responses are ignored. Some households over age 65 may have earnings, but in general the data cited in this paper provide similar estimates of earnings.
- 13 One result of note is that the redesigned SIPP provides aggregate estimates similar to the SCF and HRS, while the Czajka and Denmead (2008) study mentioned above had found performance of the original SIPP more similar to the CPS. This finding is consistent with Eggleston and Gideon (2017), which found that estimates of wealth in the redesigned SIPP were higher compared to the SCF even though the questions in the redesigned SIPP did not change significantly.
- 14 HRS reports Social Security income net of deductions for Medicare premiums. So the HRS is compared to the total Social Security benefits reported in the IRS 1040, which is also net of deductions for Medicare premiums. In 2016, Social Security income net of deductions for Medicare premiums was \$531 million.
- 15 Retirement plans, for the purposes of this study, include employer-sponsored defined benefit and defined contribution plans, IRAs, and annuities.
- 16 Households were sorted by total income. For more detail see Chen, Munnell, and Sanzenbacher (2018).
- 17 Since the IRS and SSA do not publish data for older households by income group, the analysis updates income measurements by quintile from administrative records for 2012, as presented in Bee and Mitchell (2017). This estimate is accomplished by

adjusting income from each source by its respective growth between 2012 and 2016 (CPS, SCF, and HRS) or between 2012 and 2014 (PSID and SIPP) among households ages 65 and older. The assumption is that income from Social Security and retirement plans grew at the same rate across the income distribution.

18 The percentage of pre-retirement income needed to maintain the same standard of living in retirement can vary for different households. For example, lower-income households will typically need a higher replacement rate because they spend a higher portion of their income on necessities and, unlike higher-income households, will not expect a significant decline in the income they need due to lower taxes and savings.

19 See Fox (1979 and 1982); Mitchell and Phillips (2006); Munnell and Soto (2005); Springstead and Biggs (2008); and Goss et al. (2014) for examples.

20 This finding is consistent with Brady et al. (2017), which also used final-year earnings.

21 Career average earnings are the highest 35 years of taxable earnings.

## References

- Bee, Adam and Joshua Mitchell. 2017. "Do Older Americans Have More Income Than We Think?" SESHD Working Paper Vol. 39. Washington, DC: U.S. Census Bureau.
- Brady, Peter J., Steven Bass, Jessica Holland, and Kevin Pierce. 2017. "Using Panel Tax Data to Examine the Transition to Retirement." Available at: <https://www.irs.gov/pub/irs-soi/17rptrtransitionretirement.pdf>
- Chen, Anqi, Alicia H. Munnell, and Geoffrey T. Sanzenbacher. 2018. "How Much Income Do Retirees Actually Have? Evaluating the Evidence from Five National Datasets." Working Paper 2018-14. Chestnut Hill, MA: Center for Retirement Research at Boston College.
- Czajka, John L. and Gabrielle Denmead. 2008. "Income Data for Policy Analysis: A Comparative Assessment of Eight Surveys." Mathematica Reference 6302-601. Washington, DC: Mathematica Policy Research.
- Davies, Paul, and T. Lynn Fisher. 2009. "Measurement Issues Associated with Using Survey Data Matched with Administrative Data from the Social Security Administration." *Social Security Bulletin* 69(2): 1-12.
- Eggleston, Jonathan S. and Michael Gideon (2017). "Evaluating Wealth Data Quality in the Redesigned 2014 Survey of Income and Program Participation. Working Paper Number 2017-35. Washington, DC: U.S. Census Bureau, Social, Economic, and Housing Statistics Division.
- Fisher, T. Lynn. 2008. "The Impact of Survey Choice on Measuring the Relative Importance of Social Security Benefits to the Elderly." *Social Security Bulletin* 67(2): 55-64.
- Fox, Alan. 1979. "Earnings Replacement Rates of Retired Couples: Findings from the Retirement History Study." *Social Security Bulletin* 42(1): 17-39.
- Fox, Alan. 1982. "Earnings Replacement Rates and Total Income: Findings from the Retirement History Study." *Social Security Bulletin* 45(10): 3-23.



- Goss, Stephen, Michael Clingman, Alice Wade, and Karen Glenn. 2014. "Replacement Rates for Retirees: What Makes Sense for Planning and Evaluation." Actuarial Note 155. Baltimore, MD: U.S. Social Security Administration, Office of the Chief Actuary.
- Iams, Howard M. and Patrick J. Purcell. 2013. "The Impact of Retirement Account Distributions on Measures of Family Income." *Social Security Bulletin* 73(2): 77-84.
- Internal Revenue Service. *Statistics of Income*, 2012, 2014, and 2016. Washington, DC.
- Miller, Billie Jean and Sylvester J. Schieber. 2014. "Contribution of Pension and Retirement Savings to Retirement Income Security: More Than Meets the Eye." *Journal of Retirement* 1(3): 14-29.
- Mitchell, Olivia S. and John W. R. Phillips. 2006. "Social Security Replacement Rates for Own Earnings Benchmarks." *Benefits Quarterly* 22(4): 37-47.
- Munnell, Alicia H. and Mauricio Soto. 2005. "How Much Pre-Retirement Income Does Social Security Replace?" *Issue in Brief* 36. Chestnut Hill, MA: Center for Retirement Research at Boston College.
- Munnell, Alicia H. and Anqi Chen. 2014. "Do Census Data Understate Retirement Income?" *Issue in Brief* 14-19. Chestnut Hill, MA: Center for Retirement Research at Boston College.
- Schieber, Sylvester J. 1995. "Why Do Pension Benefits Seem So Small?" *Benefits Quarterly* 11(4): 57-70.
- Springstead, Glenn and Andrew G. Biggs. 2008. "Alternate Measures of Replacement Rates for Social Security Benefits and Retirement Income." *Social Security Bulletin* 68(2): 1-19.
- University of Michigan. *Health and Retirement Study*, 2016. Ann Arbor, MI.
- University of Michigan. *Panel Study of Income Dynamics*, 2014. Ann Arbor, MI.
- U.S. Board of Governors of the Federal Reserve System. *Survey of Consumer Finances*, 2016. Washington, DC.
- U.S. Census Bureau. *Annual Social and Economic Supplement of the Current Population Survey*, 2017. Washington DC.
- U.S. Census Bureau. *Current Population Survey*, 2016. Washington, DC.
- U.S. Census Bureau. *Survey of Income and Program Participation*, 2014. Washington, DC.
- U.S. Social Security Administration. *Annual Statistical Supplement*, 2015 and 2017. Washington, DC.
- Woods, John R. 1996. "Pension Benefits among the Aged: Conflicting Measures, Unequal Distributions." *Social Security Bulletin* 59(3): 3-30.

## About the Center

The mission of the Center for Retirement Research at Boston College is to produce first-class research and educational tools and forge a strong link between the academic community and decision-makers in the public and private sectors around an issue of critical importance to the nation's future. To achieve this mission, the Center sponsors a wide variety of research projects, transmits new findings to a broad audience, trains new scholars, and broadens access to valuable data sources. Since its inception in 1998, the Center has established a reputation as an authoritative source of information on all major aspects of the retirement income debate.

## Affiliated Institutions

The Brookings Institution  
Syracuse University  
Urban Institute

## Contact Information

Center for Retirement Research  
Boston College  
Hovey House  
140 Commonwealth Avenue  
Chestnut Hill, MA 02467-3808  
Phone: (617) 552-1762  
Fax: (617) 552-0191  
E-mail: [crr@bc.edu](mailto:crr@bc.edu)  
Website: <http://crr.bc.edu>

---

© 2018, by Trustees of Boston College, Center for Retirement Research. All rights reserved. Short sections of text, not to exceed two paragraphs, may be quoted without explicit permission provided that the authors are identified and full credit, including copyright notice, is given to Trustees of Boston College, Center for Retirement Research.

The research reported herein was performed pursuant to a grant from the U.S. Social Security Administration (SSA) funded as part of the Retirement Research Consortium. The opinions and conclusions expressed are solely those of the authors and do not represent the opinions or policy of SSA, any agency of the federal government, Boston College, or the Center for Retirement Research. Neither the United States Government nor any agency thereof, nor any of their employees, make any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of the contents of this report. Reference herein to any specific commercial product, process or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply endorsement, recommendation or favoring by the United States Government or any agency thereof.