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Examining the Nest Egg

The Sources of Retirement Income for Older Americans

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EXECUTIVE SUMMARY

Retirement security is built on a foundation of secure income during retirement. For decades, researchers, financial advisors, and others have encouraged working Americans to pursue the so-called "three-legged stool" of retirement savings: Social Security; a defined benefit pension; and individual savings, typically through a defined contribution plan. This report examines the actual sources of retirement income for older Americans to find out, in part, just how many older Americans actually achieve on the three-legged stool in retirement.

This report also considers how sources of retirement income vary according to different demographic characteristics including gender, race, and educational attainment. Different groups of older Americans do not receive the same amounts of retirement income or even retirement income from the same combination of sources. Finally, this report assesses how different sources of retirement income affect poverty status and the likelihood of experiencing a material hardship, such as food insecurity, during retirement.

Among the report's key findings:

- Only a small percentage of older Americans, 6.8 percent, receive income from Social Security, a defined benefit pension, and a defined contribution plan (the three-legged stool).
- A plurality of older Americans, 40.2 percent, only receive income from Social Security in retirement.
- Roughly equal numbers of older Americans receive income from defined benefit pensions as from defined contribution plans. This is likely to change in the future as fewer private sector workers have access to defined benefit pensions now than in the past.
- Defined benefit pensions have a much greater poverty-reducing effect than defined contribution plans. This may be partly due to the fact that recipients of defined contribution income tend to have much higher net worths than the recipients of defined benefit income.
- Unmarried older men and unmarried older women receive retirement income from similar combinations of sources, but the older men consistently have higher incomes than the older women. Both unmarried men and women have lower retirement incomes than married older men and women.
- Race and educational attainment both have very strong roles to play in determining retirement outcomes. Whites have consistently higher retirement incomes than blacks or Hispanics, and those with a college degree have significantly higher retirement incomes than those with only a high school education. Race and educational attainment also intersect in meaningful ways.
- Expanding Social Security benefits would be a potent poverty-reducing tool for policymakers to implement to fight elder poverty.

INTRODUCTION

When retirement policy experts and financial advisors talk about saving for a secure retirement, they often talk about maintaining one's standard of living in retirement. What exactly does maintaining one's standard of living mean though? In part, it means avoiding falling into poverty or experiencing material hardships, such as food insecurity or high housing costs, in retirement. This report examines several different sources of income in retirement and how the receipt of income from those sources helps retirees to avoid both poverty and material hardship.

Retirement policy experts used to speak of a "three-legged stool" of retirement savings: Social Security; a defined benefit pension; and individual savings, typically through a defined contribution plan. While it is becoming increasingly rare for a worker to participate in all three types of plans, this does broadly describe the three main sources of income that may be available in retirement. According to the Social Security Administration, nearly 90 percent[1] of Americans age 65 and older receive Social Security benefits. While pension coverage has declined in recent decades, 22 percent[2] of all workers in the United States participated in a pension plan in 2017. According to the federal Bureau of Labor Statistics, 64 percent of private sector workers in 2018 had access to defined contribution plans, either alone or in combination with a defined benefit pension.[3]

These three different types of retirement plans are not the same, though. Social Security is a social insurance program meant to provide a floor so workers do not fall into poverty in retirement. Defined benefit pension plans are an employer-provided retirement benefit meant to replace a certain portion of pre-retirement income. Defined contribution plans, such as 401(k)s, 403(b)s, IRAs, and others, are individual savings plans that were originally intended to supplement pensions. While an employer may sponsor and contribute to a defined contribution plan, workers are responsible for deciding whether to participate and how much to contribute in addition to managing the investment of the money and deciding when to withdraw their savings in retirement.

The idea behind the three-legged stool was that receiving income from all three sources provides the most security in retirement. Relatively few retirees (6.8%) have income from all three sources, so this report examines what sources of income retirees do have. This report focuses on households where the **head of the household** is age 60 or older and no one in the household works 30 or more hours per week. We will also examine **persons age 60 or older** who do not work 30 or more hours per week. This is important because the economic security of older households with full-time workers may be due more to their employment income than their retirement income. We will consider several different sources and combinations of retirement income:

- Social Security only,
- Defined Benefit only,
- Defined Contribution only,
- Social Security and Defined Benefit,
- Social Security and Defined Contribution,
- Defined Benefit and Defined Contribution,
- Social Security, Defined Benefit, & Defined Contribution, and
- No income from any of these three sources

To begin, we will determine what percentages of older households receive income from these various combinations. Then, we will examine these income combinations along several different demographic characteristics: gender, race, age cohort, net worth, and educational attainment. We will stay on the subject of educational attainment and retirement income for a while because the two track closely together, i.e., those with higher educational attainment tend to have more retirement income.

To get a sense of how pre-retirement income and wealth affects income in retirement, we will consider the amounts of retirement income in the context of the net worth of the individual (excluding retirement savings from net worth). This gives an indication of whether those individuals with high pre-retirement earnings are benefitting from certain combinations of retirement income more than low-income or middle-income earners.

In the second part of the report, we will examine how the different combinations of retirement income impact poverty status and material hardships in retirement. We will also consider how likely individuals are to experience poverty and various measures of material hardship depending on which combination of retirement income they receive.

I. SOURCES OF RETIREMENT INCOME AMONG OLDER PERSONS AND HOUSEHOLDS

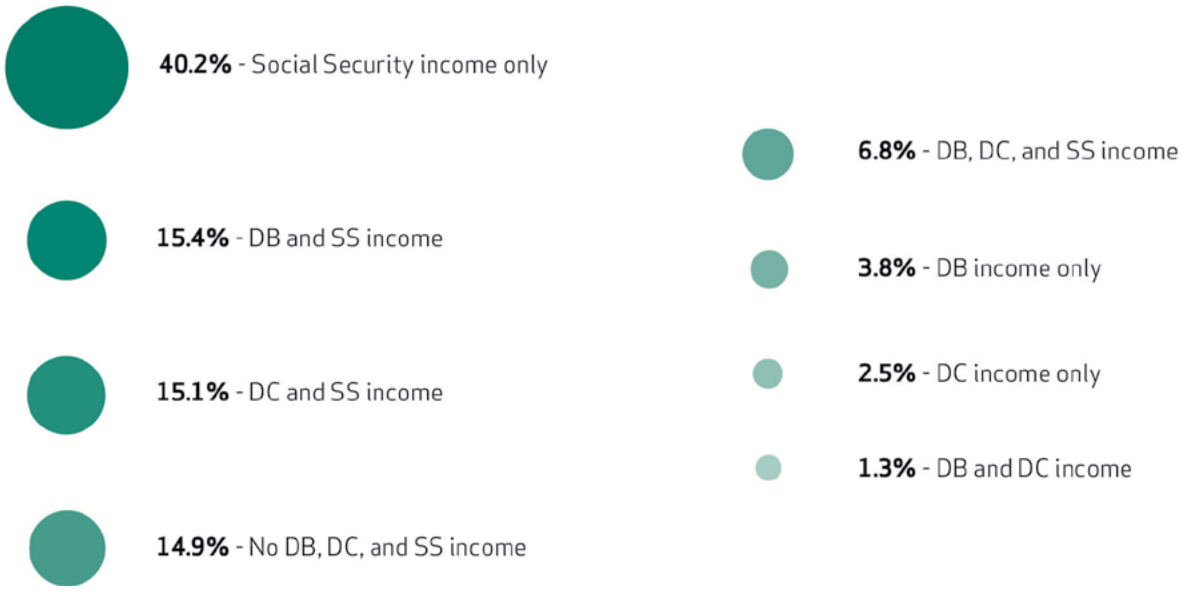
The majority of older Americans will receive income in retirement from one or more of three different sources: Social Security; a defined benefit pension; or individual savings, often through an employer-provided defined contribution plan. Whether or not this income is sufficient to cover expenses in retirement is a different question. Certainly, there are other sources of financial support in retirement, including family support and government assistance for the poorest Americans, but most will receive their retirement income from one of these three primary sources.

A significant number of older Americans will receive income from earnings during retirement, mostly through part-time work, although some will continue to work full-time even while collecting Social Security or a pension benefit. We specifically chose to exclude older Americans who are working full-time from our analysis and not to focus on the impact of earnings because we want to focus on the sources of retirement income that are derived from retirement savings: Social Security, defined benefit pensions, and defined contribution plans. Earnings during retirement are critical for many older people and their importance should not be overlooked.

Social Security is, of course, the most common source of retirement income. Nearly 90 percent of older Americans receive benefits from Social Security.[4] Benefits from Social Security replace approximately 40 percent of pre-retirement income on average, though it varies significantly.[5] Most financial planners recommend at least a 70 percent income replacement rate and some say this should be higher given longer lifespans and rising health costs. Social Security alone is not enough, but it was not intended to be.

During the past three to four decades, defined benefit pension coverage in the private sector has declined. Participation in private sector defined benefit plans peaked in the early 1980s and has steadily decreased since then. Even at its peak, however, private sector pensions only covered about 38 percent[6] of the American workforce. In the public sector, defined benefit pensions remain common with approximately 90 percent of public employees having access

Figure 1: **Retirement Income Sources of Persons Age 60 or Older Working Fewer than 30 Hours Per Week, 2013**



to a pension and roughly three-fourths of public employees participating.[7] Defined benefit pensions are a critical source of retirement income because pensions generally provide more reliable income than defined contribution plans.

Defined contribution plans have existed for decades, but their popularity increased significantly beginning in the early 1980s. While the 401(k) plan is the most well-known employer-provided defined contribution plan, others such as 403(b)s, SEP-IRAs, employee stock ownership plans, and profit-sharing plans exist.[8] Additionally, workers can establish their own Individual Retirement Account (IRA) plans and save separately from their employer, although research has shown that most IRAs simply contain rollover amounts from 401(k) plans rather than separate contributions.[9] Critically, defined contribution plans differ from defined benefit pensions in that they don't provide guaranteed income during retirement. Defined contribution plans are individual plans and while they may be sponsored by employers, employees must choose whether to participate and how much to contribute.

Given this wide variety of sources for receiving income in retirement, it's important to ask how much income older households receive from these different sources. The study data were drawn from the first wave of the re-engineered 2014 Survey of Income and Program Participation (SIPP) and the 2014 Social Security Administration (SSA) Supplement on Retirement, Pensions, and Related Content. The SIPP contains rich longitudinal information on the demographic composition of households, labor force participation, income by source, employer retirement plans, and social welfare program participation. SIPP panel members, who comprise a representative national sample of the non-institutionalized civilian population, are asked a common core set of questions annually over a four-year time span. Wave 1 SIPP respondents were interviewed between February and June 2014 about their status during calendar year 2013. The SSA Supplement was fielded later in the fall of 2014 using the same 2013 calendar year reference period as the SIPP. It contains more detailed information about the features of retirement plans, assets, retirement plan distributions and pension income received by SIPP wave 1 respondents. Two study samples were selected. The first included all respondents to both the SIPP and SSA Supplement who were age 60 years or older, and who worked fewer than 30 hours per week or not at all. The second included all households with a householder age 60 or older, where neither the householder nor the spouse/partner worked 30 or more hours per week or didn't work at all. Additional details about the selection of the study sample and analytic data file construction are contained in the Technical Appendix.

Table 1 contains information about the income sources reported by older persons. We found that:

- 40.2 percent of older persons received income only from Social Security
- 15.4 percent received income from Social Security and a defined benefit plan
- 15.1 percent received income from Social Security and a defined contribution plan
- 14.9 percent received no income from Social Security, a defined benefit plan, or a defined contribution plan
- Only 6.8 percent received income from all three sources

The small percentage who receive income from all three sources had the highest total annual household income with $37,440 in median income. Not surprisingly, those with no income from any of these three sources had the lowest total household income ($8,904 median).

Those who receive no income from any of these three sources most likely fall into one of two groups. Since the study population of this report begins at age 60, some are probably young enough that they have not yet started collecting any retirement income (or they are not yet eligible to do so). Others are likely poor or may have less education and may be receiving government assistance. This latter group may have had an uneven employment history and little access to the traditional retirement savings system. Among those receiving only defined benefit income or only defined benefit and defined contribution income, some of these are likely delaying claiming Social Security, while others are probably among the roughly quarter of state and local government employees who do not participate in Social Security through their public sector jobs.[10]

Social Security is the most common source of retirement income. According to SIPP data, in 2013, more than three-fourths of older persons working fewer than 30 hours per week received some income from Social Security.[11] This represents more than 33 million older persons. Moreover, about 27 percent of older persons received some income from a defined benefit pension and nearly 26 percent of older

Table 1: **Retirement Income Sources of Persons Age 60 or Older Working Fewer Than 30 Hours Per Week, 2013**

Sources of Retirement Income Received	Persons (millions) [a]	Percent [d]	DB Income: Median Amount [b]	DC Income: Median Amount [b]	SS Income: Median Amount [b]	Total Income: Median Amount [c]
All Persons [a]	42.74	100%	$0	$0	$13,320	$21,144
DB Income Only	1.61	3.8%	$23,724	$0	$0	$23,526
DC Income Only	1.09	2.5%	$0	$6,000	$0	$20,962
SS Income Only	17.20	40.2%	$0	$0	$14,280	$17,652
DB and SS Income	6.57	15.4%	$14,400	$0	$16,800	$30,120
DB and DC Income	0.54	1.3%	$30,000	$8,000	$0	$35,811
DC and SS Income	6.46	15.1%	$0	$6,000	$18,360	$28,476
DB, DC, and SS Income	2.89	6.8%	$18,000	$5,000	$19,680	$37,440
No DB, DC, and SS Income	6.39	14.9%	$0	$0	$0	$8,904

Source: Analysis of data from the 2014 Survey of Income and Program Participation and 2014 Social Security Administration Supplement on Retirement, Pensions, and Related Content.

[a] Persons includes individuals 60 years and older living in households where the householder and spouse/partner of the householder both worked fewer than 30 hours per week, on average, in 2013.

[b] Retirement income only includes income derived from one's own former employment.

[c] Retirement income, earnings, and total income are those of the individual only in coupled household.

[d] Percentages may not add up to 100% due to rounding.

persons received some income from a defined contribution plan.

These findings about the distribution of different retirement income sources generally agree with findings from the Government Accountability Office (GAO). Using data from the 2013 Survey of Consumer Finances (SCF) and looking at households where the head of household is age 55 or older, GAO found that 48 percent had some retirement savings, which they defined as having money in an employer-sponsored defined contribution plan or an IRA. An additional 23 percent had a defined benefit plan, but no DC plan or IRA. Finally, 29 percent had neither a defined benefit plan nor savings in a DC plan or IRA. While this is a different dataset looking at a different subset of the U.S. population, the GAO's findings are broadly consistent with our own.[12]

We examined gender differences in retirement income sources (Table 2). It matters greatly for both men and women in retirement whether they are married because this has a strong impact on retirement income. For this reason, we separated older persons into unmarried men, unmarried women, and couples. For both older, unmarried men and older, unmarried women, the largest percentage received income only from Social Security: 39.2 percent for unmarried men and 42.3 percent for unmarried women. Interestingly, for both unmarried men and women, the percentages receiving the various income combinations are remarkably similar. However, the incomes of older, unmarried men are consistently higher than those of older, unmarried women. This likely stems from a combination of lower lifetime earnings and time spent out of the workforce to raise children or provide caregiving impacting older women.

Table 2: **Retirement Income Sources of Persons Age 60 or Older Working Fewer Than 30 Hours Per Week by Gender, 2013**

Sources of Retirement Income Received	Persons (millions) [a]	Percent [c]	DB Income: Median Amount [c]	DC Income: Median Amount [c]	SS Income: Median Amount [c]	Total Income: Median Amount [e]
Unmarried Men [a]	5.60	100.0%	$0	$0	$14,640	$23,064
DB Income Only	0.25	4.5%	$14,400	$0	$0	$12,480
DC Income Only [g]	0.11	2.0%	$0	$7,200	$0	$12,036
SS Income Only	2.19	39.2%	$0	$0	$14,880	$19,008
DB and SS Income	1.35	24.1%	$11,328	$0	$16,800	$29,616
DB and DC Income [g]	0.06	1.1%	$28,800	$12,000	$0	$41,064
DC and SS Income	0.73	13.0%	$0	$6,540	$19,920	$28,716
DB, DC, and SS Income	0.35	6.3%	$16,080	$5,000	$19,930	$45,180
No DB, DC, and SS Income	0.55	9.8%	$0	$0	$0	$7,559
Unmarried Women [a]	13.95	100.0%	$0	$0	$12,600	$19,764
DB Income Only	0.63	4.5%	$9,468	$0	$0	$14,652
DC Income Only [g]	0.13	0.9%	$0	$32,000	$0	$20,015
SS Income Only	5.90	42.3%	$0	$0	$13,320	$17,460
DB and SS Income	3.23	23.1%	$1,824	$0	$14,160	$24,720
DB and DC Income [g]	0.14	1.0%	$33,600	$17,500	$0	$48,114
DC and SS Income	1.59	11.4%	$0	$5,000	$17,280	$24,135
DB, DC, and SS Income	0.94	6.7%	$5,088	$3,000	$17,880	$32,784
No DB, DC, and SS Income	1.39	10.0%	$0	$0	$0	$6,516
Couples [b]	11.67	100.0%	$0	$0	$28,500	$52,116
DB Income Only	0.26	2.2%	$28,800	$0	$0	$45,444
DC Income Only [g]	0.09	0.8%	$0	$7,500	$0	$26,256
SS Income Only	2.78	23.8%	$0	$0	$27,096	$36,036
DB and SS Income	2.98	25.5%	$17,160	$0	$27,804	$54,480
DB and DC Income [g]	0.11	1.0%	$54,000	$12,600	$0	$65,280
DC and SS Income	2.48	21.3%	$0	$10,000	$32,520	$56,496
DB, DC, and SS Income	2.50	21.4%	$22,440	$8,000	$32,424	$68,496
No DB, DC, and SS Income	0.47	4.0%	$0	$0	$0	$15,037

Source: Analysis of data from the 2014 Survey of Income and Program Participation and 2014 Social Security Administration Supplement on Retirement, Pensions, and Related Content.

[a] Persons includes individuals 60 years and older without a spouse/partner who worked fewer than 30 hours per week, on average, in 2013.

[b] Couples includes households in which the householder age 60 years and both coupled persons worked fewer than 30 hours per week, on average, in 2013.

[c] For unmarried persons, retirement income includes income derived from one's own former employment and retirement income from a former spouse. For couples, retirement income includes the retirement income of both coupled persons.

[d] For unmarried persons, earnings includes own earnings only. For couples, earnings income includes the earnings of both coupled persons.

[e] For couples, total income is total annual household income.

[f] Percentages may not add up to 100% due to rounding.

[g] Sample size less than 20.

When considering race (Table 3), Social Security continues to be important across the board, representing the largest source of retirement income for each racial group. In terms of income, white persons have higher amounts of both total income and Social Security income than black persons or Hispanic persons: $23,292 in median total income for whites versus $16,863 for blacks and $13,560 for Hispanics. An earlier NIRS report found that Latinos[13] face issues with access and eligibility for employer-sponsored retirement savings plans and this lowers overall retirement savings for Latino workers and retirees.[14]

This report discusses the retirement incomes of older white, black, and Hispanic Americans because those are the three specific racial groups captured by the SIPP. Others have studied the retirement incomes of other racial and ethnic groups, such as Asian Americans and Pacific Islanders. While Asian Americans taken as a whole tend to have retirement income and wealth figures that compare favorably to whites, the degree of wealth inequality among Asian Americans is stark and tends to vary by ethnic group.[15]

The 18.8 percent of older black persons with both defined benefit and Social Security income is comparable to that for whites (15.5%) and higher than for Hispanics (11.4%). Also, the percentage of older black persons receiving some income from a defined benefit pension, 29.5 percent, is nearly the same as for older white persons, 28.5 percent, and almost double that of older Hispanic persons, 16 percent. This is consistent with findings from other research.[16] This comparatively high level of pension coverage for older black households speaks to the importance of pensions for a community that has historically faced obstacles to accumulating retirement savings. Due to these historical legal, social, and economic challenges, black workers, especially black women, are overrepresented in the public sector[17] where defined benefit pensions remain commonplace. This contributes to the relatively large number of older black persons receiving defined benefit income.

McKinsey & Co recently released a detailed report on the economic impact of closing the racial wealth gap in America.[18] While their report featured little discussion of retirement savings directly, it highlights the many challenges that black Americans face in achieving financial security. For example, the McKinsey report found that a typical black family has only one-sixth the liquid savings of a white family. Additionally, black households are more likely to be unemployed or work part time than white households, which can limit access or eligibility for employer-sponsored retirement savings plans. Ineligibility for a workplace retirement plan is just one issue facing black households that results in the lower levels of retirement income we found in the SIPP data.

The intersection of educational attainment and retirement income stands out in the findings. Looking at household data in Table 4, the amount of total household annual income increases markedly depending on the number of years of schooling completed. Those with a householder with at most a high school education had a median total household income of $25,524. For those with a householder with some college, that number increases to $37,500. For those with a householder with a college degree, it jumps to $51,553, more than double those with a high school education.

Table 3: **Retirement Income Sources of Persons Age 60 or Older Working Fewer Than 30 Hours Per Week by Race, 2013**

Sources of Retirement Income Received	Persons (millions) [a]	Percent [c]	DB Income: Median Amount [b]	DC Inocme: Median Amount [b]	SS Income: Median Amount [b]	Total Income: Median Amount [c]
All Non-Hispanic White Persons [a]	32.69	100.0%	$0	$0	$14,280	$23,292
DB Income Only	1.21	3.7%	$22,140	$0	$0	$24,408
DC Income Only	0.93	2.8%	$0	$6,000	$0	$23,508
SS Income Only	12.82	39.2%	$0	$0	$14,760	$19,068
DB and SS Income	5.08	15.5%	$14,400	$0	$17,280	$31,620
DB and DC Income	0.46	1.4%	$30,000	$8,000	$0	$36,541
DC and SS Income	5.64	17.3%	$0	$5,200	$18,600	$28,716
DB, DC, and SS Income	2.58	7.9%	$16,800	$5,000	$19,560	$38,016
No DB, DC, and SS Income	3.96	12.1%	$0	$0	$0	$10,524
All Non-Hispanic Black Persons [a]	4.38	100.0%	$0	$0	$11,784	$16,863
DB Income Only	0.23	5.3%	$21,240	$0	$0	$20,388
DC Income Only [e]	0.05	1.1%	$0	$10,224	$0	$20,015
SS Income Only	1.96	44.8%	$0	$0	$13,320	$15,108
DB and SS Income	0.82	18.8%	$10,980	$0	$15,360	$24,480
DB and DC Income [e]	0.04	0.9%	$36,000	$17,500	$0	$48,864
DC and SS Income	0.32	7.2%	$0	$7,160	$14,880	$24,732
DB, DC, and SS Income [e]	0.20	4.5%	$16,080	$3,600	$20,880	$30,684
No DB, DC, and SS Income	0.76	17.4%	$0	$0	$0	$9,612
All Hispanic Persons [a]	3.37	100.0%	$0	$0	$10,140	$13,560
DB Income Only [e]	0.09	2.7%	$24,000	$0	$0	$36,000
DC Income Only [e]	0.05	1.3%	$0	$16,080	$0	$24,084
SS Income Only	1.55	45.9%	$0	$0	$12,720	$14,040
DB and SS Income	0.38	11.4%	$20,400	$0	$15,240	$28,448
DB and DC Income [e]	0.01	0.4%	$15,300	$3,000	$0	$30,616
DC and SS Income [d]	0.31	9.1%	$0	$9,600	$19,320	$30,396
DB, DC, and SS Income [e]	0.05	1.5%	$20,784	$7,000	$16,200	$41,688
No DB, DC, and SS Income	0.93	27.2%	$0	$0	$0	$2,952

Source: Analysis of data from the 2014 Survey of Income and Program Participation and 2014 Social Security Administration Supplement on Retirement, Pensions, and Related Content.

[a] Persons invludes individuals 60 years and older living in households where the householder and spouse/partner of the householder both worked fewer than 30 hours per week, on average, in 2013.

[b] Retirement income only includes income derived from one's own former employment.

[c] Retirement income, earnings, and total income are those of the individual only in coupled household.

[d] Percentages may not add up to 100% due to rounding.

[e] Sample size 10-29.

[f] Sample size less than 10.

Table 4: **Retirement Income Sources of Nonworking Older Households by Householder Education Level, 2013**

Sources of Retirement Income Received	Number of Households (millions) [a]	Percent [c]	DB Income: Median Amount [b]	DC Income: Median Amount [b]	SS Income: Median Amount [b]	Total Household Income: Median Amount
Householders with 12 or Fewer Years of Schooling	14.02	100.0%	$0	$0	$15,960	$25,524
DB Income Only	0.45	3.2%	$11,088	$0	$0	$12,576
DC Income Only [d]	0.09	0.6%	$0	$7,000	$0	$30,396
SS Income Only	5.96	42.5%	$0	$0	$15,840	$22,044
DB and SS Income	3.61	25.8%	$9,000	$0	$17,160	$30,300
DB and DC Income [e]	0.05	0.3%	$24,000	$12,000	$0	$48,000
DC and SS Income	1.71	12.2%	$0	$5,000	$20,400	$31,620
DB, DC, and SS Income	1.15	8.2%	$13,200	$4,000	$25,560	$47,460
No DB, DC, and SS Income	0.99	7.1%	$0	$0	$0	$8,653
Householders with 13-15 Years of Schooling	7.27	100.0%	$0	$0	$19,440	$37,500
DB Income Only	0.23	3.2%	$18,528	$0	$0	$26,400
DC Income Only [d]	0.08	1.2%	$0	$16,000	$0	$13,788
SS Income Only	2.31	31.8%	$0	$0	$17,760	$25,800
DB and SS Income	1.87	25.8%	$15,120	$0	$20,880	$44,063
DB and DC Income [d]	0.07	1.0%	$36,000	$17,500	$0	$48,864
DC and SS Income	1.29	17.8%	$0	$9,000	$24,960	$46,207
DB, DC, and SS Income	0.98	13.5%	$18,000	$6,300	$26,928	$57,562
No DB, DC, and SS Income	0.42	5.8%	$0	$0	$0	$12,396
Householders with 16 or more Years of Schooling	7.54	100.0%	$0	$0	$21,240	$51,553
DB Income Only	0.37	4.9%	$37,320	$0	$0	$42,456
DC Income Only [d]	0.16	2.1%	$0	$20,000	$0	$25,652
SS Income Only	1.64	21.7%	$0	$0	$19,560	$31,596
DB and SS Income	1.61	21.4%	$19,800	$0	$21,380	$55,680
DB and DC Income [d]	0.19	2.6%	$36,000	$12,000	$0	$48,472
DC and SS Income	1.63	21.6%	$0	$11,400	$28,068	$57,584
DB, DC, and SS Income	1.58	20.9%	$27,360	$8,500	$25,194	$72,396
No DB, DC, and SS Income	0.36	4.8%	$0	$0	$0	$15,600

Source: Analysis of data from the 2014 Survey of Income and Program Participation and 2014 Social Security Administration Supplement on Retirement, Pensions, and Related Content.

[a] Households include those with a householder age 60 years and older where the householder and spouse/partner of the householder both worked fewer than 30 hours per week, on average, in 2013.

[b] Retirement income and earnings amounts include those of the householder and the spouse/partner only in coupled households.

[c] Percentages may not add up to 100% due to rounding.

[d] Sample size 10-29.

[e] Sample size less than 10.

The other findings hold true across levels of educational attainment. Those with only Social Security income remain the largest share of households for all three cohorts, although this is particularly true for those with at most a high school-educated householder (42.5% of this group). Those with a college degree-educated householder were much more likely to have retirement income from all three sources (20.9% of this group) than those with a householder with some college (13.5%) or at most a high school education (8.2%), respectively. Those with a householder having at most a high school education also had a greater likelihood of having no retirement income from any of these three sources. Regardless of which source of retirement income was considered, the median total annual income received was highest among those with a college degree.

Researchers at the Center for Retirement Research found that less educated workers tend to retire earlier than college graduates. They identified four possible causes for these earlier retirements: growing inequality in health and longevity; variations in labor market conditions; the impact of changes to Social Security; and differences in marital status.[19] Transamerica, in a 2016 survey, found similar differences in retirement readiness based on educational attainment.[20] Specifically, they found that college graduates are much more confident about retiring comfortably --71 percent confident-- than high school graduates --only 51 percent confident. They also found that 86 percent of college graduates are saving for retirement, compared with just 67 percent of those with a high school diploma. Poterba et al. examined the connections among educational attainment, financial and health capital accumulated before retirement, and the evolution of assets after retirement. They found a strong connection between educational attainment and health and wealth accumulation.[21]

It's important to consider the intersection of both race and educational attainment. Our data indicate that both race and education level are strong predictors of retirement outcomes. We looked at levels of educational attainment among the three racial groups highlighted in this report (see Table 12 in Appendix A). Blacks and Hispanics were much more likely than whites to have less than a high school education (and no diploma), whereas whites were much more likely to have a bachelor or postgraduate degree. For all three groups, the numbers with either a high school diploma or some college were very similar. These varying levels of educational attainment could be a significant driver behind the diverging retirement outcomes of these racial groups. More education can mean a lifetime of more secure jobs, a steady accumulation of retirement wealth, and ways to pay off debt and not incur debt that are not available to those with less educational attainment.

We also divided the sample into three different age cohorts: persons 60-65 years old; 66-75 years old; and 76 years or older. The data in Table 5 largely show what one would expect. Among persons age 60-65, the largest percentage receives no income from any of the three sources, which makes sense because a large number of this cohort will not have entered retirement yet. For the older two age cohorts, the numbers hold fairly steady across both and the primary source of retirement income continues to be Social Security.

A little more than half of persons age 60-65 years old are receiving some income from Social Security, but 85 percent of those age 66-75 and 84 percent of those age 76 and older are receiving Social Security income. Interestingly, receipt of defined benefit income held steady across all three age cohorts at roughly a quarter of persons in each cohort, but differences in receipt of defined contribution income across age cohorts exhibited a pattern similar to that found for Social Security income. Whereas 17.7 percent of persons age 60-65 years reported defined contribution income, 27 percent and 29.4 percent of persons age 66-75 years and age 76 years and older, respectively, received defined contribution income. This difference between defined benefit and defined contribution plans may be a function of the retirement eligibility rules for defined benefit plans compared to defined contribution plans where individuals have much more discretion as to when to spend down their accumulated savings.

Retirement income is significantly affected by pre-retirement occupation and earnings. Access to different types of retirement plans and the ability to participate in those plans can depend to a large extent on a person's occupation during their working years. There is also an important question of how retirement savings inequality intersects with both income inequality and overall wealth inequality. While Social Security has a progressive structure that provides more generous benefits to those with lower incomes, defined contribution plans favor high-income earners who are more likely to have access to an employer-provided defined contribution plan, have more disposable income to contribute

Table 5: **Retirement Income Sources of Persons Age 60 or Older Working Fewer Than 30 Hours Per Week by Age Group, 2013**

Sources of Retirement Income Received	Persons (millions) [a]	Percent [c]	DB Income: Median Amount [b]	DC Income: Median Amount [b]	SS Income: Median Amount [b]	Total Income: Median Amount [c]
All Persons 60-65 Years Old [a]	8.70	100.0%	$0	$0	$3,570	$15,672
DB Income Only	0.79	9.1%	$20,400	$0	$0	$20,941
DC Income Only	0.40	4.6%	$0	$12,360	$0	$13,128
SS Income Only	2.78	31.9%	$0	$0	$12,480	$15,468
DB and SS Income	0.99	11.4%	$15,000	$0	$15,240	$29,160
DB and DC Income	0.21	2.5%	$27,600	$15,000	$0	$24,024
DC and SS Income	0.58	6.6%	$0	$8,000	$15,120	$22,944
DB, DC, and SS Income	0.26	3.0%	$20,784	$7,500	$20.760	$41,688
No DB, DC, and SS Income	2.68	30.8%	$0	$0	$0	$8,520
All Persons 66-75 Years Old [a]	18.22	100.0%	$0	$0	$14.640	$23,292
DB Income Only	0.51	2.80%	$29,280	$0	$0	$30,960
DC Income Only	0.37	2.01%	$0	$5,800	$0	$26,520
SS Income Only	7.67	42.11%	$0	$0	$14,520	$18,060
DB and SS Income	3.16	17.35%	$14,400	$0	$17,280	$31,764
DB and DC Income [d]	0.21	1.13%	$27,600	$11,300	$0	$30,616
DC and SS Income	3.06	16.81%	$0	$6,800	$19,440	$29,988
DB, DC, and SS Income	1.33	7.30%	$19,200	$6,000	$20,520	$41,484
No DB, DC, and SS Income	1.91	10.48%	$0	$0	$0	$8,772
All Persons 76 Years or Older [a]	15.82	100.0%	$0	$0	$14,400	$21,408
DB Income Only	0.30	1.9%	$13,596	$0	$0	$23,526
DC Income Only	0.32	2.0%	$0	$5,000	$0	$19,808
SS Income Only	6.74	42.6%	$0	$0	$14,520	$18,144
DB and SS Income	2.41	15.2%	$$13,440	$0	$16,440	$29,160
DB and DC Income [d]	0.12	0.8%	$36,000	$2,500	$0	$41,064
DC and SS Income	2.82	17.8%	$0	$5,000	$18,120	$27,968
DB, DC, and SS Income	1.30	8.2%	$15,696	$5,000	$18,480	$34,188
No DB, DC, and SS Income	1.80	11.4%	$0	$0	$0	$10,392

Source: Analysis of data from the 2014 Survey of Income and Program Participation and 2014 Social Security Administration Supplement on Retirement. Pensions, and Related Content.

[a] Persons includes individuals 60 years and older living in households where the householder and spouse/partner of the householder both worked fewer than 30 hours per week, on average, in 2013.

[b] Retirement income only includes income derived from one's own former employment.

[c] Retirement income, earnings, and total income are those of the individual only in coupled household.

[d] Percentages may not add up to 100% due to rounding.

to that plan, and receive stronger tax incentives to save. In a 2015 report, researchers at the Federal Reserve Board found that while the overall retirement savings infrastructure in the U.S. tends to lessen wealth inequality, the shift from defined benefit to defined contribution plans may be modestly contributing to an increase in overall wealth inequality.[22]

To get a sense of how the retirement income sources of older households are impacted by household wealth, we examined household net worth, excluding retirement account assets (Table 6). Those households with both defined contribution and Social Security income had a much higher median net worth, $301,870, than those with both defined benefit and Social Security income, $108,690. This finding supports the idea that high-income and high-net worth households benefit much more from defined contribution plans than low-income or middle-income workers, and could suggest that the workers who were covered by defined benefit and defined contribution plans had significantly different career earnings.[23] This is further supported by the significantly higher Social Security benefits being received by those receiving defined contribution and Social Security income, compared to those receiving defined benefit and Social Security income.

Using Social Security income as a rough proxy for pre-retirement earnings, the data suggests that those households with defined benefit and Social Security income earned less than those with defined contribution and Social Security income. However, those with defined benefit and Social Security income derived a greater benefit in retirement from their DB pension than those with defined contribution and Social Security received from their defined contribution plan. This supports the notion that pensions protect a middle-class retirement for those who worked, but had modest earnings during their careers. It also indicates that the classes of workers benefiting from defined benefit plans and those benefiting from defined contribution plans may not be the same.

In 2013, among older households working less than 30 hours per week, there were more households receiving defined benefit and Social Security income (7.1 million) than those receiving defined contribution and Social Security income (4.63 million). When looking at both total retirement income and poverty status, the numbers are fairly similar for these two groups of households: those with defined contribution and Social Security income have somewhat higher median total income and, therefore, slightly lower poverty status. This might lead one to believe that defined benefit plans and defined contribution plans yield similar outcomes. Dig a little deeper, though, and a different story emerges.

When examining the poverty reducing effects of different retirement income sources, defined benefit plans have a much greater impact on poverty reduction than defined contribution plans (Table 9 later). One possible cause of this: these plans benefit different households. Households with defined contribution and Social Security income have nearly three times the net worth of households with defined benefit and Social Security income. This implies that the households with defined contribution income had higher earnings during their careers and, due at least in part to their high net worth, were at little risk of falling into poverty in retirement. The households with defined benefit income, on the other hand, most likely had lower earnings, leading to a smaller net worth, and a more precarious situation heading into retirement.

It is also worth noting that defined benefit income represents a greater percentage of total retirement income for those households with defined benefit and Social Security income than defined contribution income represents for those households with defined contribution and Social Security income. This further supports the idea that those with defined benefit and Social Security income were solidly middle-income workers who really rely on their defined benefit income in retirement, compared to those with defined contribution and Social Security income who were more financially secure heading into retirement due to their higher earnings and higher levels of wealth outside of retirement plans. Defined benefit plans, therefore, are a true lifeline in retirement for those who have them and the historical decline in pension coverage imperils a middle class retirement.

The net worth of older households with all three sources of retirement income as well as those with defined benefit and defined contribution income both exceeded $300,000. Again, given that income and occupation correlate with plan access, high-income earners with higher net worths would have greater access to all three plan types (this assumes that most defined benefit and defined contribution income recipients are simply delaying claiming Social Security, but will eventually receive income from all three sources).

Table 6: **Retirement Income Sources of Households with Householders 60 years or Older, and Working Fewer Than 30 Hours Per Week, 2013**

	Number of Households (millions) [a]	Percent [d]	DB Income: Median Amount [b]	DC Income: Median Amount [b]	SS Income: Median Amount [b]	Total Household Income: Median Amount	Household Net Worth (without retirement account assets): Median Amount
All Households [a]	28.82	100.0%	$0	$0	$18,120	$33,408	$139,900
DB Income Only	1.05	3.6%	$18,528	$0	$0	$21,276	$110,615
DC Income Only	0.33	1.1%	$0	$13,000	$0	$20,962	$274,668
SS Income Only	9.91	34.4%	$0	$0	$16,680	$24,284	$80,405
DB and SS Income	7.10	24.6%	$12,000	$0	$19,320	$38,532	$108,690
DB and DC Income	0.32	1.1%	$36,000	$12,000	$0	$48,472	$333,860
DC and SS Income	4.63	16.1%	$0	$7,500	$24,408	$43,884	$301,870
DB, DC, and SS Income	3.71	12.9%	$19,260	$6,754	$25,680	$60,024	$319,050
No DB, DC, and SS Income	1.77	6.2%$0	$0	$0	$0	$10,056	$12,480

[a] Households include those with a householder age 60 years and older and where the householder and spouse/partner of the householder both worked fewer than 30 hours per week, on average, in 2013.
[b] Retirement income and earnings amounts only include those of the householder and the spouse/partner in coupled households.
[c] Household net worth is the net worth of the household excluding any retirement income assets of the householder and/or spouse/partner.
[d] Percentages may not add up to 100% due to rounding.

Those with no income from any of the three sources had an extremely low median net worth: $12,480. For those who had some income from one or more of these three sources, those with Social Security only had the lowest median net worth: $80,405. Again, this aligns with prior research that has looked at who has access to different types of retirement plans and who benefits the most from them. It is likely that many of those retirees in older households only receiving Social Security income were lower-income earners before retirement who lacked access to a retirement savings plan through their employer.[24] This may explain the low median net worth of the Social Security only households.

II. ECONOMIC SECURITY ASSOCIATED WITH RETIREMENT INCOME RECEIPT

Understanding the sources of retirement income is important, but what does it mean in terms of outcomes such as poverty status and material hardship? We first examined older households by the combinations of their retirement income sources, and whether those households were poor, near-poor, or not-poor (Table 7).[25] Households with incomes below the federal poverty level (FPL) are classified as "poor." Households with incomes exceeding the FPL but less than or equal to 200 percent of the FPL are classified as "near-poor," while households with incomes exceeding 200 percent of the FPL are classified as "not-poor." Overall, a majority of older households, 63 percent, were not poor. Nearly two-thirds of households with no retirement income were poor, whereas nearly 93 percent of households with all three sources of income were not-poor.

Table 7: **Poverty Status Prevalence Among Non-Working Older Households by Retirement Income Sources**

	% Households [c]	Poor (Income Below FPL) [b]	Near Poor (Income 100-200% FPL)	Not Poor (Income >200% FPL)	Total
All Households [a]	100.0%	12.8%	24.2%	63.0%	100.0%
DB Only	3.7%	37.8%	15.1%	47.1%	100.0%
DC Only	1.1%	40.5%	19.9%	39.6%	100.0%
SS Only	34.4%	13.8%	38.6%	47.6%	100.0%
DB & SS	24.6%	5.5%	21.5%	73.0%	100.0%
DB & DC	1.1%	16.3%	9.8%	73.8%	100.0%
DC & SS	16.1%	4.2%	17.6%	78.2%	100.0%
DB, DC, & SS	12.9%	0.7%	6.4%	92.9%	100.0%
None	6.2%	64.2%	17.5%	18.3%	100.0%

Source: Analysis of data from the 2014 Survey of Income and Program Participation and 2014 Social Security Administration Supplement on Retirement, Pensions, and Related Content.

[a] Households include those with a householder age 60 years and older where the householder and spouse/partner of the householder both worked fewer than 30 hours per week, on average, in 2013.

[b] Poverty status is based on the combined total income of all household members.

[c] Percentages may not add up to 100% due to rounding.

More households with only Social Security income were not poor (47.6%) than near-poor (38.6%) or poor (13.8%). However, more than seven of every ten older households with either both Social Security and defined benefit income (73%) or both Social Security and defined contribution income (78.2%) were not poor. This clearly shows that having retirement income, especially having more than one source of retirement income, is critical for maintaining financial security in retirement.

In addition to poverty status, we considered several indicators of material hardships and how material hardship risks are impacted by the types of retirement income received. Specifically, we considered food insecurity; any shelter hardship; no annual doctor and/or dentist visit; and housing costs that exceed 30 percent of household income. Food insecurity was measured by an indicator derived from SIPP respondents' answers to six questions about the sufficiency of their food consumption. A household experienced a "food insecurity" hardship if its answers produced a low or very low score on a three-point security scale used by the U.S. Department of Agriculture (USDA).[26] A shelter hardship was indicated for any household who reported difficulty paying their rent, mortgage, or utility payments in the previous year.

Although the vast majority of Americans 65 years and older are entitled under Medicare, most dental services and some medical expenses are not covered by Medicare. Although at least one annual visit to one's doctor and dentist are considered to be good health practices, out-of-pocket costs for deductibles and co-payments may impede such good health behaviors. A health care hardship was indicated for a household if the householder and/or spouse/partner of the householder reported no visit to their doctor and/or dentist in the previous year. Excessive housing costs were defined to be a material hardship if total expenses for rent or mortgage plus utilities exceeded 30 percent of household income.

We examined how households receiving different combinations of retirement income experienced these indicators of material hardships (Table 8). As expected, those with no income from any of these three sources were much more likely to experience all of these measures of material hardships. Similarly, those with income from all three sources were much less likely to experience any material hardship. Otherwise, the data suggest that the risk of most of the material hardships is notably lower among older households

Table 8: **Prevalence of Material Hardships and Public Assistance Receipt Among Non-Working Older Households**

	% Households [b]	Food Insecurity	Shelter Hardship (rent/mortgage utility)	No Doctor/ Dentist Visit Last Year	Housing Costs >30%	Public Assistance Recipient	Medicaid Enrollee
All Households [a]	100.0%	9.7%	6.8%	47.8%	33.9%	14.7%	12.6%
DB Only	3.7%	11.2%	6.0%	47.0%	58.6%	18.6%	15.7%
DC Only	1.1%	13.0%	8.0%	35.3%	57.0%	8.1%	1.5%
SS Only	34.4%	13.7%	8.4%	56.2%	37.8%	21.8%	19.1%
DB & SS	24.6%	9.0%	7.7%	51.1%	31.5%	8.9%	9.0%
DB & DC	1.1%	2.7%	0.0%	30.9%	30.8%	2.8%	3.7%
DC & SS	16.1%	3.9%	3.1%	34.7%	21.4%	4.7%	3.9%
DB, DC, & SS	12.9%	1.6%	1.6%	29.5%	18.5%	1.7%	0.7%
None	6.2%	23.0%	23.0%	66.0%	69.4%	52.4%	40.7%

Source: Analysis of data from the 2014 Survey of Income and Program Participation and 2014 Social Security Administration Supplement on Retirement, Pensions, and Related Content.

[a] Households include those with a householder age 60 years and older where the householder and spouse/partner of the householder both worked fewer than 30 hours per week, on average, in 2013.

[b] Percentages may not add up to 100% due to rounding.

having at least two of the three sources of retirement income.

Another way to think about poverty is to consider which older households receive public assistance or Medicaid. Many government programs, commonly referred to as the "safety net" or "welfare," provide cash assistance, health care coverage, and food access to needy low-income families. We examined how public assistance receipt and Medicaid health care coverage varies among older households with different combinations of retirement income (Table 8). More than one-half of nonworking older households with no retirement income received public assistance income in the form of general assistance or food stamps. Over 40 percent of these households without any retirement income received public health care coverage as Medicaid enrollees. Similar to our findings for material hardships, older households with multiple sources of retirement income were less likely to be public assistance recipients and Medicaid enrollees. For example, whereas roughly 21.8 percent of older households with only Social Security income received some public assistance benefits, only about 8.9 percent of older households with both Social Security and defined benefit pension income, and 4.7 percent of those with both Social Security and defined contribution income, received public assistance, respectively. While some older households with multiple sources of retirement income are still dependent on government safety net programs, in general such households are much less likely to be eligible and receive public assistance.

III. SOCIAL IMPACTS OF RETIREMENT INCOME RECEIPT

Lastly, we utilized statistical models to quantify the social impacts of defined benefit, defined contribution, and Social Security income receipt by developing estimates of how many households were able to escape poverty and avoid various material hardships as a consequence of the types of retirement income received in 2013. In addition, we used statistical models to estimate government savings in the form of public assistance and Medicaid expenditures that were not made because of the financial security associated with the receipt of each of the three major sources of retirement income.

The estimated impacts of the receipt of retirement income from defined benefit, defined contribution, and Social Security sources on adverse social outcomes were based on statistical models of the probabilities that an older household experienced these adverse outcomes in 2013. In order to statistically isolate the effects of retirement income receipt from other factors that in theory should also affect the probability of an adverse economic welfare outcome, such as food insecurity, each statistical model contained not only variables indicating retirement income sources, but also a set of household characteristics reflecting other factors influencing the risk of food insecurity.

To illustrate the importance of controlling for other household factors, consider that in order to isolate the effects of retirement income sources on the probability that an older household experienced food insecurity, we must control for differences in the education, age, gender, marital status, and the race/ethnicity of the household, because the risk of food insecurity will vary among households depending on these characteristics. For example, an older household headed by a native-born, college-educated, married, white male may be expected to have had a more continuous work history, higher earnings, and greater wealth accumulation than a household headed by a foreign-born, high school-educated, divorced, black female. Because the male householder in this example should also be more likely than his female counterpart to have worked in a job with a defined benefit or defined contribution plan, such potential confounding household characteristics must be specified as variables in a statistical model of the food insecurity. Otherwise, we may erroneously attribute the effects of factors such as higher education, male gender, or race on the risk of food insecurity to an effect of defined benefit or defined contribution income receipt

Details about the statistical models of material hardships, public assistance, and poverty status outcomes are contained in the Technical Appendix.

We now discuss our estimates of how many additional non-working older households escaped poverty in 2013 as a consequence of their receipt of any defined benefit, defined contribution, or Social Security income (Table 9). According to SIPP data, in 2013, there were 3.7 million poor households age 60 and older working less than 30 hours per week. Without income from defined benefit pensions, we estimate that number would increase by 19 percent to 4.4 million poor households. The impact of Social Security is even more striking. Without income from Social Security, the number of poor households would increase by more than 200 percent to 11.28 million poor households. This demonstrates the great importance of Social Security in alleviating elder poverty.[27]

Similarly, for near-poor households, without income from defined benefit pensions, the number of these households is estimated to increase by 17.5 percent to more than 8 million households. Without income from Social Security, the number of near-poor households would actually decrease because so many would drop into poverty. For not-poor households, the number of these households is projected to decline without income from defined benefit, defined contribution, or Social Security because these households would drop into near-poor or poor status without this income. For example, without income from Social Security, the number of not-poor households is estimated to decrease from 18.15 million to 12.23 million because nearly 6 million households would become near-poor or poor.

For all three categories, defined contribution income receipt has a less pronounced effect than either defined benefit or Social Security income receipt. Without income from defined contribution plans, the estimated numbers of poor and near-poor households would increase by 5.3 percent and 6.3 percent, respectively, and the number of not-poor households is estimated to decrease by 3.5 percent. Defined contribution plans are less powerful at keeping older households out of poverty than either defined benefit pensions or Social Security. This may be because fewer poor or near-poor households have assets in defined contribution accounts, therefore, removing income from defined contribution plans pushes fewer households below the poor or near-poor thresholds.[28] Similarly, as we have discussed throughout this report, many of the not-poor households with defined contribution have high net worths, so the loss of their defined contribution income would not necessarily push them into poverty status.

We also developed estimates of projected increases in the numbers of older households experiencing various material hardships if they had not received any defined benefit, defined contribution, or Social Security income, respectively (Table 11 in Appendix A). Without income from Social Security, the number of older households with unaffordable housing (i.e., costs exceeding 30 percent of income) would increase by more than 58 percent. While much more modest reductions in food insecurity and health care hardships among older households were associated with receipt of defined benefit and defined contribution income, their estimated impacts on many of the other hardship outcomes were not statistically significant.

Finally, we estimated the impact of retirement income receipt on receipt of either public assistance or Medicaid by projecting changes in the number of older households receiving such public assistance (Table 10). Social Security continues to have the strongest effect. Without Social Security income receipt, in 2013 the number of older households receiving public assistance would increase by nearly 45 percent and the number of older persons receiving Medicaid would increase by more than 40 percent. Without income from defined benefit pensions, the number of older households receiving public assistance would increase by almost 19 percent and the number of older persons receiving Medicaid would increase by more than 15 percent. The impact of defined contribution income receipt was smaller by both measures.

While public assistance programs and Medicaid are vital to support poor households and low-income workers, they do come with costs. We project that without income from defined benefit pensions, the combined costs for public assistance and Medicaid benefits to older households would have increased by almost $13.5 billion in 2013. Without Social Security income, combined costs would have increased by nearly $34 billion in 2013. Public expenditures would have increased by roughly $5.4 billion in 2013 without income from defined contribution plans. This more modest projected increase in public expenditures is, at least in part, a consequence of both the lower prevalence of receipt of

public assistance and Medicaid among older households with defined contribution income and the lower prevalence of defined contribution plan income receipt among older households. Similarly, the greater projected increase in public expenditures in the absence of Social Security income is at least partly due to the higher prevalence of public assistance among Social Security recipient households and the much higher prevalence of Social Security income receipt generally among older households. The magnitude of estimated impacts on government safety net expenditures underscores the level of social benefits associated with both public and

Table 9: **Projected Changes in Poor, Near-Poor, and Not-Poor Older Households Working Less Than 30 Hours Per Week Without DB, DC, and Social Security Income in 2013**

	Number of Households in 2013 (millions)	Projected Net Change in Households (millions)	% Change
Poor Households [b]			
Actual SIPP National Estimate	3.70		
Without DB Income Receipt [a]	4.40	0.70	19.0%
Without DC Income Receipt	3.89	0.20	5.3%
Without Social Security Income Receipt	11.28	7.58	205.1%
Near Poor Households			
Actual SIPP National Estimate	6.97		
Without DB Income Receipt	8.19	1.22	17.5%
Without DC Income Receipt	7.41	0.44	6.3%
Without Social Security Income Receipt	5.32	-1.66	-23.8%
Not Poor Households			
Actual SIPP National Estimate	18.15		
Without DB Income Receipt	16.23	-1.92	-10.6%
Without DC Income Receipt	17.52	-0.63	-3.5%
Without Social Security Income Receipt	12.23	-5.93	-32.6%

Source: Analysis of data from the 2014 Survey of Income and Program Participation and 2014 Social Security Administration Supplement on Retirement, Pensions, and Related Content.

[a] Results are derived from predictions from a multinominal logit model estimated on data for older households where both the householder and spouse/partner working fewer than 30 hours per week with dummy variables indicating DB, DC, or Social Security receipt set to zero, respectively. See Technical Appendix.

[b] Poor: (Income <= FPL), Near-Poor: (FPL < Income <= 200% FPL), Not-Poor: (Income > 200% FPL).

Table 10: **Projected Changes in Older Households Receiving Public Assistance and Older Persons 65 Years and Older Without DB, DC, or Social Security Income in 2013**

	Older Non-Working Households Receiving Public Assistance (millions)	Projected Increase in Households with Public Assistance (millions)	% Change	Aggregate Public Assistance Expenditures in 2013 ($ billions)	Projected Increase in Public Assistance Expenditures ($ billions)	% Change
Public Assistance Recipients						
Actual National SIPP Estimate 2013	4.23			$22.67		
Without DB Pension Income Receipt [a]	5.02	0.79	18.7%	$26.92	$4.25	18.7%
Without DC Income Receipt [a]	4.49	0.26	6.0%	$24.04	$1.37	6.0%
Without Social Security Income Receipt [a]	6.13	1.89	44.8%	$32.82	$10.15	44.8%
	Older Non-Working Medicaid Enrollees 65 Years or Older (millions)	**Projected Increase in Medicaid Enrollees (millions)**	**% Change**	**Aggregate Medicaid Expenditures in 2013 ($ billions)**	**Projected Increase in Medicaid Expenditures ($ billions)**	**% Change**
Medicaid Enrollees						
Actual National SIPP Estimate 2013	4.09			$58.9		
Without DB Pension Income Receipt [b]	4.72	0.64	15.6%	$68.1	$9.2	15.6%
Without DC Income Receipt [b]	4.36	0.28	6.8%	$62.9	$4.0	6.8%
Without Social Security Income Receipt [b]	5.73	1.64	40.2%	$82.6	$23.7	40.2%

Source: Analysis of data from the 2014 Survey of Income and Program Participation and 2014 Social Security Administration Supplement on Retirement, Pensions, and Related Content.

[a] Results are derived from predictions from a binary logit model estimated on data for older households where the householder is at least 60 years old and both the householder and spouse/partner work fewer than 30 hours per week with dummy variables indicating DB, DC, or Social Security receipt set to zero, respectively. See Technical Appendix.

[b] Results are derived from predictions from a binary logit model estimated on older persons 65 years or older working less than 30 hours per week with dummy variables indicating DB, DC, and Social Security receipt set to zero, respectively. See Technical Appendix.

POLICY RECOMMENDATION: EXPAND SOCIAL SECURITY

The findings of this report demonstrate the profound poverty-reducing effect of Social Security income receipt. Every year Social Security keeps millions of older American households out of poverty. As we've highlighted, though, Social Security alone is not enough to finance a secure retirement, even though a plurality of older households only receives income from Social Security in retirement. This has led some lawmakers in Washington to propose expanding Social Security benefits.

Representative John Larson of Connecticut has proposed HR 1902, the "Social Security 2100 Act." Among its provisions, it would expand benefits for all current and future Social Security beneficiaries by increasing the average benefit by 2 percent. It would also set the new minimum benefit level at 25 percent above the poverty line to ensure no one who has paid into the Social Security system would fall into poverty in retirement. Senator Elizabeth Warren of Massachusetts has proposed immediately increasing Social Security benefits by $200 per month for all current and future beneficiaries. Senator Bernie Sanders of Vermont would also expand benefits for all current and future beneficiaries as well as increasing the minimum benefit amount.

We examined the impact on poverty status of Social Security expansion by calculating a ten percent increase in Social Security income for older households that received Social Security income in 2013. Ten percent seems to fall roughly in the middle of the current proposals to expand Social Security benefits. Our analysis indicates that if Social Security income had been ten percent greater in 2013, there would have been about 505,000 fewer poor, older, non-working households. Additionally, there would have been 545,000 fewer older, near-poor households without a full-time worker. Finally, the number of not-poor, older households is estimated to increase by about 1.05 million, from 18.15 million to about 19.2 million. This shows that Social Security expansion would have a demonstrable effect on lifting more older households out of poverty.

CONCLUSION

Older Americans receive income in retirement from a variety of sources, but the most prevalent sources are Social Security; defined benefit pensions; and individual savings, often through defined contribution plans. It is clear that the source and combination of retirement income can have a profound impact on whether an older person is likely to be poor or experience a material hardship, such as food insecurity. This report considered various combinations of retirement income and their effect on elder poverty and hardship.

The findings of this report support the argument for a three-legged stool of retirement savings: the more sources of retirement income a household has, the more total retirement income they are likely to have. This highlights the importance of plan access for achieving retirement security. If workers do not have access to a retirement savings plan through their employer, they are much less likely to save for retirement and will have less income in retirement as a result. High numbers of workers who have access to a plan choose to participate, but retirement security is held back by the fact that plan access remains unevenly distributed across industries, income levels, race, and gender.

Social Security has a very important and powerful role to play in preventing elder poverty, but Social Security alone is not enough to provide a secure retirement, even though the largest share of older households only receive income from Social Security. Protecting, strengthening, and expanding Social Security should be a top policy priority for those who are interested in retirement security.

Defined benefit pensions continue to have an important role to play in reducing elder poverty. Nearly a quarter of older persons receives income from a pension and defined benefit income meaningfully reduces the number of poor and near-poor older households. It is clear from the data that pensions serve an important function in keeping working families in the middle class in retirement.

Defined contribution plans, while nearly as prevalent as defined benefit plans, advantage different groups of older Americans than defined benefit plans. High-net worth individuals are more likely to receive income from defined contribution plans, which means these plans have less of a poverty-reducing effect in retirement. The data also suggests that older households, regardless of the combination of income sources, receive more retirement income from defined benefit plans than defined contribution plans.

Education, lifetime earnings, and retirement income all move in conjunction with each other. The more education someone has, the higher income they are likely to earn during their careers, which means they are likely to have more income in retirement. Due to issues of plan access and eligibility, those with higher incomes while working are more likely to have access to all three retirement plan types (DB, DC, and SS) and this is supported by our findings. The issue of plan access serves as a multiplier of income inequality over time. Retirement experts and policymakers should consider the intersection of education, income, and retirement savings and how these factors may be driving diverging life expectancies among older Americans.

A comfortable retirement remains a fundamental pillar of the American Dream. The amounts and sources of retirement income for older Americans vary across race, gender, income, and education level. The most surefire way to achieve a secure retirement is to have income from multiple sources, but this is far from common for today's retirees. And, it is certain to look much different for future generations who should expect to need more resources relative to income, especially as access to pensions has declined. As the United States wrestles with how to address the growing retirement savings crisis, restoring the strong foundation provided by the three-legged stool should be a top priority.

Table 11: **Projected Changes in Older Households Working Less Than 30 Hours Per Week Experiencing Material Hardships Without DB, DC, or Social Security Income in 2013**

	Older Households Experiencing Hardship in 2013 (millions)	Projected Increase in Households with Hardship (millions)	Percent Change
Food Insecurity Hardship			
Actual National SIPP Estimate	2.81		
Without DB Pension Income Receipt [a]	3.02	0.21	7.5%
Without DC Income Receipt	2.92	0.12	4.2%
Without Social Security Income Receipt	[b]		0.0%
No Annual Doctor and/or Dentist Visit			
Actual National SIPP Estimate	13.77		
Without DB Pension Income Receipt	14.24	0.47	3.4%
Without DC Income Receipt	14.67	0.89	6.5%
Without Social Security Income Receipt			0.0%
Housing Costs Exceed 30% Household Income			
Actual National SIPP Estimate	9.78		
Without DB Pension Income Receipt			0.0%
Without DC Income Receipt	10.09	0.30	3.1%
Without Social Security Income Receipt	15.48	5.70	58.3%

Source: Analysis of data from the 2014 Survey of Income and Program Participation and 2014 Social Security Administration Supplement on Retirement, Pensions, and Related Content.

[a] Results are derived from predictions from a binary logit model estimated on data for older households where both the householder and the spouse/partner working fewer than 30 hours per week with dummy variables indicating DB, DC, or Social Security receipt set to zero, respectively. See Technical Appendix.

[b] Predicted impacts are not computed for retirement income receipt variables with statistically insignificant coefficient estimates. None of the retirement income receipt coefficients were statistically significant for shelter hardships.

Table 12: **Years of Schooling Completed by Older Nonworking Persons: By Race/ Ethnicity**

		Percentage of Persons Who Completed:							
	Persons [b] (millions)	**8 or fewer years**	**9-12 years, no degree**	**High school graduate/ GED**	**1-3 years of college**	**Associate degree**	**Bachelor's degree**	**Postgraduate degree**	**Total**
All persons [a]	40.44	7.1%	9.5%	33.9%	18.0%	6.4%	14.2%	11.0%	100%
Non-Hispanic White	32.69	4.1%	8.2%	34.6%	18.8%	6.3%	15.9%	12.1%	100%
Non-Hispanic Black	4.38	8.4%	17.0%	35.0%	16.2%	6.6%	8.8%	8.1%	100%
Hispanic	3.37	34.3%	11.4%	25.5%	11.8%	6.8%	5.4%	4.8%	100%

Source: Analysis of data from the 2014 Survey of Income and Program Participation and 2014 Social Security Administration Supplement on Retirement, Pensions, and Related Content.

[a] Persons 60 years or older living in a household in which both the householder and spouse/partner (if any) worked fewer than 30 hours per week, on average, in 2013.

[b] Estimates of persons are based on those respondents who self-identified as either Non-Hispanic White, Non-Hispanic Black, or Hispanic.

TECHNICAL APPENDIX

Data Sources

The primary data sources are the 2014 Survey of Income and Program Participation (SIPP) and the 2014 Social Security Administration (SSA) Supplement on Retirement, Pensions, and Related Content. The SIPP is a representative national panel sample of the non-institutionalized U.S. civilian that was first developed by the U.S Census Bureau in 1983 to collect longitudinal data on demographic composition of households, labor force participation, income by source and social program participation. While some modest changes were made to the SIPP survey design in the past, major changes were made to the survey design of the re-engineered 2014 SIPP. Prior to the 2014 SIPP, respondents were interviewed in person at four-month intervals (waves) over a 4-year time span. Each interview solicited information on a core set of income, labor force, and program participation questions. Topical module questions, which were focused on specific topics such as pension plan coverage, adult well-being, employment history, and health, were asked at selected interviews during the multi-year span of the panel survey. The redesign of the SIPP was motivated by budgetary problems, and many of the changes were made to reduce costs. Households are now interviewed annually instead of three times per year, and all topical modules were eliminated. Whereas respondents previously had to recall information over a four-month period, 2014 SIPP respondents had to recall information over a full calendar year. Although most of the core interview content and some content of the topical modules was retained in the 2014 SIPP, a good number of variables from earlier SIPP panels were dropped. Of particular relevance to this study are the loss of some questions about DB pensions and material hardships that were previously asked in topical modules.

As a consequence of variables lost in the re-engineered 2014 SIPP, the Social Security Administration commissioned the 2014 SSA Supplement on Retirement, Pensions, and Related Content to help meet its information needs. The 2014 SSA Supplement was a one-time telephone survey of Wave 1 SIPP respondents conducted between September and November 2014. Much of the 2014 SSA Supplement content was drawn discontinued SIPP topical modules, such as the Annual Income and Retirement Accounts and Retirement and Pension Plan Coverage modules. Although SSA Supplement questions about finances used the same 2013 calendar year reference period as the SIPP, respondents were interviewed between three to ten months after completion of their SIPP interviews.

The U.S. Census Bureau sought to make the information in the reengineered 2014 SIPP comparable to the information from earlier SIPP panels through use of event history calendars and various other methodological enhancements. However, the changes in the survey design, information content, and wording of questions are great enough that caution must be exercised in comparing estimates based on the 2014 SIPP with those derived from earlier SIPP panels. This is particularly important for estimates derived from information drawn from the 2014 SSA Supplement given its very low response rate of 52.2 percent. The U.S. Census Bureau asked the National Academies of Sciences, Engineering, and Medicine (2018)[1] to conduct an independent evaluation of the redesign of the SIPP. Regarding data quality, the review panel concluded that the reengineered SIPP design was not uniformly better or worse than earlier SIPP designs. However, it raised concerns about analyses which combine or compare data from older and reengineered SIPP panels. In Conclusion 9-1, the panel states that "Our analysis of wave 1 data, however, documents significant differences in a number of estimates between the 2008 and 2014 SIPP panels. Researchers interested in using SIPP panels as repeated cross-sectional data to generate consistent time trends should be aware of how changes (to the design, sample dynamics, reference period, question wording and ordering) may impact their findings. (National Academies of Sciences, Engineering, and Medicine, 2018 p.7)[2] Regarding content, the review panel concluded that the overall content of the reengineered SIPP was remarkably consistent with earlier SIPP data. However, they raised concerns about the loss of variables which generated the need for the SSA Supplement and for potential response biases in the SSA Supplement data due to its low response rate of 52.2 percent.[3] The panel recommended that the U.S, Census

Bureau reevaluate whether critical content from the SSA Supplement can be added back to the reengineered SIPP.

Analytic File Construction

The analysis data file contained one annual record per respondent for individuals who were respondents to both the Wave 1 SIPP and 2014 SSA Supplement surveys. This file was constructed in a series of steps. Separate data files containing one annual record per respondent were created from SIPP and SSA data files. These were subsequently merged together yielding a data file with data from respondents to both the SIPP and SSA Supplement surveys.

The 2014 SIPP data file contains 12 records for each respondent corresponding to months of the 2013 calendar year. Some variables contain information which can vary by month, such as income and the types of income received each month. Other variables contain information which does not vary over time, such a race/ethnicity and birth year. We first created a data file for SIPP respondents containing one summary record per respondent from the monthly data file in several steps. First, we selected the December 2013 record for a subset of SIPP variables with time-invariant information along with unique SIPP identifiers for the household unit (SSUID) and person number (PNUM). Second, for the subset of variables containing monthly reported amounts that could vary over time, we created a second data file containing summed calendar year 2013 annual total amounts for those variables. Third, we created a third data file containing respondents' monthly annual averages of selected variables. In the fourth data file we created a set of dummy variables which distinguished respondents who reported certain information in at least one month of the 2013 calendar year. For example, some individuals reported receiving a distribution from an IRA or 401(k)/403(b) retirement account in only selected months during 2013. These four intermediate data files were then merged together to produce a person-level data file containing SIPP variables measured on an annual basis.

Since the 2014 SSA Supplement data file contains only one record per respondent and the reference time period is the full calendar year 2013, we directly selected the variables relevant for our analyses from the file and merged these variables to the SIPP file with annual variables. The match rate for this file merger was only about 52 percent for SIPP respondents of all ages because of the low response rate for the SSA Supplement telephone survey. We retained the records of all respondents with successful matches producing a data file containing annual records for all individuals who were respondents in both the SIPP and SSA Supplement data files.

The last steps in the analytic file creation involved adding variables containing relevant information about the spouse/partner of respondents who lived with a spouse or partner in the same household. This was done so that we could measure variables such as whether a respondent's spouse/partner received DB pension, DC plan, or social security income associated with his/her own former job or business. Employing the spouse and partner identifier variables in the SIPP, a spouse/partner data file with selected variables was first created from the merged SIPP/SSA respondent data file. The spouse/partner person-records were subsequently merged to the person-records of all SIPP/SSA respondents with a spouse/partner. The result person analysis data file contained variables required for household-level measurement of selected variables that were reported by respondents for themselves rather than for the household. A household analysis file was then created by selecting the records of individual householders who were eligible for selection to the study populations.

Study populations

The study population of older persons is defined to include all respondents age 60 years or older who, on average, worked fewer than 30 hours per week, in 2013. Given this study's focus on the economic welfare of older persons and households with different sources of retirement income, it is appropriate to exclude individuals who work full-time because their total economic resources may reflect their full-time employment more than their retirement resources. While most of the older persons in the study population can be considered to be "retired," some of them were engaged in part-time paid work.[4]

The study population of older households is defined to include households where the householder is 60 years or older and both the householder and his/her spouse or partner, if any, worked fewer than 30 hours per week, on average, in 2013. The householder is one of the persons in whose name the housing unit is owned or rented, and who, for practical purposes, might be considered the "head of the household."[5] This definition excludes households in which an older person or couple lives in a dependent living arrangement with a younger householder. This exclusion is appropriate in light of this study's focus on the economic welfare

implications that inadequate retirement income has for older households. For example, if an older person lives with the family of a householder who is one of his/her children, the aggregate income of the household is more likely to reflect the financial resources of the child and his/her spouse rather than the co-resident older parent(s). Unless otherwise noted, the specified attributes of older households, such as their gender, race, and education, are those of the householder when the householder lives with a spouse/partner.

The estimation samples of older persons and older households were comprised of individuals who were interview respondents in *both* Wave 1 of the 2014 SIPP *and* the 2014 SSA Supplement.[6] There were 7,138 older SIPP and SSA respondents who did not work, or worked fewer than 30 hours per week, on average, in 2013. There were 4,884 older households in which both the householder and spouse/partner did not work, or worked fewer than 30 hours per week, on average, in 2013.

Own DB Pension Income Receipt and Amounts Received

Own defined benefit (DB) pension receipt, as defined here, requires that an individual report receipt of disability, retirement, or survivor income in 2013 that is derived from one's own former job or business. The income must also be expected to continue regularly for the remainder of one's life, and the amounts received must be based on pay and years of service rather than a retirement account balance. Under this definition a one-time receipt of a lump sum distribution, and retirement income paid out in a time-limited series of payments are not counted as DB pension income receipt. The annual amount of DB pension income received was computed by multiplying the monthly pension amount reported in the SSA Supplement by twelve to produce an *own annual DB pension income* amount.[8]

Household DB Pension Income Receipt and Amounts Received

Individuals benefit not only from pension income from their own former employment, but also from survivor income associated with a former spouse. At the household level individuals also benefit from DB pension income received by their current spouse/partner, either as a survivor or from their former employment. Hence, *household DB pension receipt* is defined to include four potential sources of DB pension income: (1) own DB pension receipt by the householder, (2) lifetime survivor DB pension income receipt by the householder derived from either a former spouse's job or business, or an unknown source, (3) own DB pension receipt by the spouse/partner of the householder, and (4) lifetime survivor DB pension income receipt by the spouse/partner of the householder.[8] We added together annualized amounts from these four reported monthly pension amounts of the householder and his/her spouse/partner to produce annual *household DB pension income* amounts for households.

Own DC Retirement Income Receipt and Amounts Received

Own DC income receipt is defined to include situations where an individual reported any of the following types of income receipt in 2013: (1) receipt of a distribution from an employee plan (401(k), 403(b), thrift plan), (2) receipt of a distribution from an IRA or Keogh account, (3) receipt of retirement, survivor, or disability income from one's own former job or business, where payments are expected to continue until death, but the amounts received are either based on an individual account balance, or it is unknown, and (4) receipt of retirement, survivor, or disability income from one's own former job or business, where a limited number of payments are expected, and the amounts received are either based on an individual account balance or it is unknown, and (5) receipt of retirement, survivor, or disability income that was not derived from one's own former job or business, received in a limited number of payments. Single lump sum distributions from a retirement account are not counted as DC retirement income receipt.

Amounts of DC income distributions from 401(k), 403(b), and thrift plans and distributions from IRA or Keogh accounts were directly obtained from questions contained in the 2014 SSA Supplement. DC lifetime annuity income receipt and annual income amounts received were measured from the same set of SSA Supplement questions used for own DB pension income. Own DC plan income amounts received in limited payments in 2013 could not be directly determined because there is no variable in the 2014 SSA Supplement containing information about the number of payments received in 2013. For this relatively small subgroup of SSA-SIPP respondents we had to add up their reported monthly amounts of retirement income received in 2013 from the 2014 SIPP.[9]

Household DC Income Receipt and Amounts Received

Households are classified as having household DC income receipt when either the householder or the spouse/partner of the householder as individuals are identified as a DC income recipient. Hence *household DC income receipt* is defined to include eight potential sources of DC income: (1) IRA/ Keogh distributions received by the householder, (2) IRA/ Keogh distributions received by the spouse/partner of the householder, (3) 401(k),403(b) and thrift plan distributions received by householder, (4) 401(k),403(b) and thrift plan distributions received by the spouse/partner of the householder, (5) DC lifetime annuity income received by the householder, (6) DC lifetime annuity income received by the spouse/partner of the householder, (7) time-limited DC income payments received by the householder, and (8) time-limited DC income payments received by the spouse/ partner of the householder. *Household DC income amounts received* were computed by adding up the amounts received by householders and their spouse/partners as individuals.

Own Social Security Income Receipt and Amounts Received

Own social security income receipt was measured from only SIPP variables because the 2014 SSA Supplement does not contain any information on social security receipt and amounts received. Receipt requires that an individual report reception of social security benefits during 2013 because of his/her own retirement or disability. Survivor social security benefits and reception of social security for other reasons are not counted as own social security.[10] Annual own social security income was computed by adding up the monthly amounts reported in the SIPP.

Household Social Security Income Receipt and Amounts Received

Although receipt of social security income that is not associated with one's own former employment is not counted as own social security income receipt, it is counted as a component of household social security income receipt. Other social security receipt for an individual requires that an individual report reception of social security benefits in 2013 because of widowhood, one's spouse's former employment, or other reason, and not report reception of social security income based on his/her own former employment. *Household social security income receipt* is indicated when the householder and/or spouse/partner of the householder received security income in 2013 because of his/her own former employment, own disability, widowhood, former employment of his/her spouse, or other reason. Annual household social security income in 2013 was computed by adding up the monthly amounts of social security income reported in the SIPP for both the householder and spouse/partner of the householder.

Poverty Class

The SIPP contains a monthly household-level poverty ratio variable containing the ratio of total household income to the federal poverty level (FPL) for the household (based on household composition and age of the household). Poverty class was based on the average poverty ratio in 2013. Each household was then classified in three poverty level classes: (1) *poor* income at or below the FPL, (2) *near-poor* income above the FPL but at or below 200% of the FPL, and (3) *not poor* income greater than 200% of the FPL.

Material Hardship Indicators

Most of the indicators used in the previous studies of Porell and Almeida (2009)[11] and Porell and Oakley (2012)[12] could not be replicated with the questions available in the reengineered 2014 SIPP. Several material hardship indicators were constructed from 2014 SIPP questions. These indicators include hardships related to: inability to meet basic shelter expenses, food insecurity, excessive housing costs, and inadequate use of medical or dental care services. Definitions for these indicators are discussed below.

A household is classified as having experienced a *shelter hardship* or housing insecurity if it reported that it experienced either or both of the following two hardships at some time during the previous year 2013: (1) "unable to pay the full rent or mortgage", and (2) "unable to fully pay the utility bills (gas, electricity, oil)."

A *food insecurity hardship* is defined by a measure derived from a three-point food security scale used by the U.S. Department of Agriculture (USDA).[13] The *food insecurity hardship* outcome indicator is based on responses to six questions. A score of one is assigned to responses of "often" or "sometimes "in the last 12 months as to whether: (1)"the food that we bought just didn't last and we didn't have money to get more?" and (2) "we couldn't afford to eat balanced meals?" A score of one is assigned to affirmative

responses to questions about whether in the last 12 months any adults in the household: (3) "ever ate less than he/she felt one should because there wasn't enough money for food?", (4) "were ever hungry, but didn't eat, because there wasn't enough money for food?", (5) "ever cut the size of your meals or skip meals because there wasn't enough money for food?". An additional score of one is assigned for individuals who responded "almost every month" or "some months" to a follow up question (6) about" how often adults cut the size of meals or skipped meals?". Households with total scores of two or more out of six, indicating "low" or "very low" food security, were classified as having a *food insecurity hardship*.

Thirty-percent of household income has been widely used as a standard rule of thumb for the amount of income that a family could spend on housing and still have enough left over for other nondiscretionary spending.[14] A household is classified as having an *unaffordable housing hardship* if its reported expenditures for rent/mortgage and utilities exceeded 30 percent of total household income.

Unfortunately, the 2014 SIPP no longer contains questions about whether a household member did not see a doctor or dentist in the previous year when such a visit was needed. Without self-reported information about "need", we created a health care hardship indicator from self-reported information about the number of doctor and dentist visits made in 2013. Under the premise that it is good health behavior for an older person to visit a doctor and dentist at least once per year, a household is classified as having a *health care hardship* if either the householder or his/her spouse/partner reported making no doctor visit and/or no dentist visit in 2013.

Public Assistance Receipt and Amounts

The SIPP contains information about various types of cash and noncash forms of public assistance received by households, as well as amounts received for some cash and noncash assistance. Means-tested cash assistance includes Supplemental Security Income (SSI), Temporary Assistance for Needy Families (TANF), and general assistance. Noncash public assistance reported in the SIPP technically includes Supplemental Nutrition Assistance Program (SNAP) benefits (i.e., food stamps) and Women, Infants, and Children Nutrition Program (WIC) benefits. However, no SIPP respondents age 60 years or older reported receipt of WIC benefits. Household *public assistance receipt* is defined as the receipt of SSI, TANF, general assistance, SNAP, or WIC benefits by a respondent or his/her spouse/partner in at least one month in 2013. Monthly amounts of these public assistance benefits were summed to produce the annual amount of *public assistance income* received in 2013.

Medicaid Enrollment and Medicaid expenditures

Medicaid is distinguished from other means-tested public assistance benefits because the SIPP only contains information about Medicaid enrollment. There is no information about public Medicaid expenditures. *Medicaid enrollee* is defined here as respondents at least 65 years of age who reported having Medicaid coverage for at least one month in 2013.[15] Calendar year 2013 Public Medicaid expenditures per enrollee was estimated from national data on Medicaid expenditures per enrollee 65 years and older for fiscal years 2013 (October 2012- September 2013) and 2014 (October 2013- September 2014). First, calendar year 2013 national Medicaid expenditures per enrollee were estimated by first taking a weighted average of published data on (3/4) FY 2013 ($15,503) and (1/4) FY 2014 ($13,063) national Medicaid expenditures per enrollee 65 years or older.[16] This amount was adjusted downward by the average fraction of the 2013 year that SIPP respondents 65 years or older reported having Medicaid coverage (11.62 months out of 12 months) in 2013. This produced a national 2013 calendar year estimate of $14,442 per Medicaid enrollee.

Multivariate Analyses of the Impacts of DB, DC, and social security income receipt

Statistical outcome models were estimated on an estimation sample of 4,884 older households for shelter, food insecurity, excessive housing costs, and health care material hardships, poverty status, and public assistance receipt outcomes. For Medicaid enrollee, a statistical model was estimated on a sample of 6,441 persons 65 years or older who did not work, or worked fewer than 30 hours per week, on average, in 2013. The dependent variables for these outcome models are defined below:

Shelter hardship	1= household reports rent/mortgage or utility payment hardship in 2013 0= otherwise

Food insecurity hardship	1= household classified as low or very low food security in 2013 0= otherwise
Unaffordable housing hardship	1= household spent more than 30% of household income on rent/mortgage and utlities in 2013 0= otherwise
Health care hardship	1= householder or spouse/partner made no visit to a doctor or dentist in 2013 0= otherwise
Poverty status	2013 household income relative to the FPL, 1= poor (< FPL), 2= near poor (100-199% FPL), 3= not poor (200+% FPL)
Medicaid enrollee	1= individual had at least 1 month of Medicaid coverage in 2013 0= otherwise
Public assistance receipt	1= household received public assistance in 2013 0= otherwise

Logistic regression models were estimated for the five outcome models with binary (1,0) dependent variables defined above. A multinomial logit model was estimated for the categorical dependent poverty status variable because statistical tests did not support the proportional odds assumption required for estimating an ordinal logit model specification. Observations were weighted with the population weights supplied in the 2014 SSA Supplement. The standard errors of coefficient estimates are adjusted for the complex survey design of the SSA by use of ***svy logit*** and ***svy mlogit*** procedures in Stata/MP V15.1.

The key independent variables of major interest that are specified in all of the models are dummy variables indicating the receipt of any DB pension income, defined contribution (DC) income, and Social Security income by the householder and/or spouse regardless of the amounts received. A good number of control variables are also specified to account for other socio-demographic factors that should theoretically affect the risk of the various material hardships, poverty status, public assistance receipt, and Medicaid enrollment among older households and persons. Given the content differences between the 2014 re-engineered SIPP and previous SIPP panels it was not possible to specify the same set of control variables used by Porell and Almeida (2009)[17] and Porell and Oakley (2012)[18] in the statistical models used to make projections of the impacts of DB, DC, and Social Security receipt. Table A-1 contains definitions of all independent variables specified in these outcome models and sample means are reported in Table A-2 for the estimation samples of older households and persons. The rationales for specifying most of the control variables are fairly obvious and require no discussion. Most of the control variables reflect demographic and socioeconomic attributes which are widely viewed as associated with the types of jobs which a retired older person likely held in the past and differential access to employer-sponsored retirement plans found in those types of jobs. It is important to note that net worth exclusive of retirement assets is specified as a control variable because economic welfare in later life is naturally related to the level of non-retirement wealth that households accumulate over the life course. Whereas the median net worth exclusive of retirement assets of older households reporting receipt of DB pension and Social Security income in 2013 was $184,491 and $150,131, respectively, the median amount was $308,870 among households reporting receipt of DC plan income. These substantial differences in non-retirement wealth would likely confound the estimated impacts that different retirement income sources have on economic welfare outcomes if non-retirement asset wealth were not specified as a control variable.

Table A-3 contains estimated relative risk ratios from the multinomial logit model of household poverty status. Odds ratio estimates from the logit models of household public assistance receipt, and material hardship outcomes are reported in Table A-4. Table A-5 contains odds ratio estimates from the logit model of Medicaid enrollment outcomes for older persons rather than households.

Limitations

The statistical outcome models should be fully-specified so that effects of omitted variables are not erroneously attributed to the effects of DB, DC, or Social Security income receipt. A particular concern may be raised about bias associated with the potential endogeneity of DB, DC, and Social Security income receipt in the statistical models. Some persons with stronger "tastes for saving" may self-select to work in jobs with DB pension or DC plans as a means of saving for retirement. If this is true, the estimated impacts of DB pension and DC income receipt from the statistical models may be overstated under the following reasoning. If persons with stronger preferences for retirement security

tend to disproportionately obtain jobs with a DB pension plan and a measure of savings preference is not specified as a control variable in the statistical model, then the coefficient estimate for DB pension receipt will not only reflect the true effect of DB pension income receipt, but also the effect a preference toward greater saving for retirement. The reasoning is that in the absence of having a DB pension plan, persons with a stronger "taste for saving" would accumulate greater retirement savings from other sources, such as greater personal savings, to compensate for the lack of a DB pension at retirement. As a consequence of this type of compensatory economic behavior, the projected impacts of DB pension income receipt on poverty, material hardships, and public assistance receipt derived from statistical models lacking a variable measuring savings preference may overstate these projected impacts. In other words, additional personal savings for retirement would offset some of estimated positive effects of retirement income receipt on economic welfare.

We sought to test the sensitivity of the outcome model results to the potential endogeneity of DB pension receipt, DC income receipt, and SS income receipt through estimation of two-step probit models for each hardship outcome. The first step entails estimation of separate probit models for DB, DC, and SS income receipt to create predicted probabilities of each of these sources of retirement income. These predicted probabilities are used as instrumental variables that are specified in place of the observed retirement source dummy variables. These two-step procedures generally work well when it is possible to specify variables that are strong predictors of the endogenous covariates in the outcome model, but not the outcome itself. In our case such a variable would be a strong predictor of DB, DC, or SS income receipt, but not the various material hardship outcomes. In previous SIPP panels, there were variables containing information about the occupation and industry of pre-retirement jobs and measures of the continuity of work histories. Unfortunately, we were unable to find SIPP or SSA Supplement variables of this sort and the two-step probit models were quite fragile and did not provide much insight about the robustness of the outcome models.

Estimating of the Impacts of DB, DC, and SS income receipt on welfare outcomes

The estimated coefficients from the statistical models described were used to derive estimates of the number of additional older households that were able to avoid poverty, material hardships, and dependency on public assistance due DB, DC, and Social Security income receipt. These projected impacts on economic welfare outcomes were derived under a three-step procedure described below for public assistance receipt and DB pension income receipt. The same approach was used for other adverse welfare outcomes, and for estimating the impacts of DC and Social Security income receipt.

(1) Predicted values are obtained from the estimated model with actual SIPP/SSA respondent values for DB pension receipt. These predicted values were multiplied by SSA Supplement population weights and summed to obtain a national estimate of the number of households with DB pensions receiving public assistance.

(2) A second set of predicted values is then obtained. For these predictions, the DB pension receipt variable was set to zero for all households with DB pensions rather than their actual value of one. These predicted values were then multiplied by SSA Supplement population weights and summed to obtain a national estimate of the number of households that would be expected to receive public assistance if no households had received any DB pension income.

(3) Since DB pension receipt was negatively associated with public assistance receipt, the difference between these two predicted values is the national estimate of the additional number of households that would be expected to receive public assistance in the absence of their DB pension income receipt.

The dollar impact of DB, DC, and Social Security receipt on public assistance expenditures in 2013 is then obtained by multiplying the estimate of additional households from step 3 by the mean annual amount of public assistance received by older households in 2013 from the SIPP study data, or $5,357. The dollar impacts of DB, DC, and Social Security income receipt on 2013 Medicaid expenditures is estimated similarly. Since neither the SIPP or SSA Supplement contained any information on Medicaid expenditures, published data on Medicaid expenditures per enrollee were used to assign a 2013 annual average expenditure amount of $14,442 per Medicaid enrollee 65 years of age or older.

Table A-1: **Definitions of Independent Variables**

Variable Name	Definition
DB pension receipt	1= householder and/or spouse received DB pension income in 2013; 0= no
DC income receipt	1= householder and/or spouse received DC income in 2013; 0= no
SS income receipt	1= householder and/or spouse received Social Security income in 2013; 0= no
Male	1= male householder; 0= female householder
Age	Householder age in years
Foreign born	1= householder born outside of the U.S.; 0= born in U.S.
Non-Hispanic White (omitted reference group)	1= householder self-identifies as Non-Hispanic White; 0= otherwise
Non-Hispanic Black	1= householder self-identifies as Non-Hispanic Black; 0= otherwise
Hispanic	1= householder self-identifies as Hispanic; 0=otherwise
Other race	1= householder self-identifies as other race; 0= otherwise
Married (omitted reference group)	1= householder is currently married; 0= otherwise
Widowed	1= householder is currently widowed; 0= otherwise
Divorced or separated	1= householder is currently divorced or separated; 0= otherwise
Never married	1= householder never married; 0= otherwise
Times married	Number of times householder was ever married
Household size	Count of household members
Linguistic isolation	1= limited English-speaking household [a]; 0= otherwise
Fair or poor health	1= householder and/or spouse reports to be in fair or poor health; 0= otherwise
0-8 years of schooling (omitted reference group)	1= householder completed fewer than 9 years of schooling; 0= otherwise
9-12 years of schooling	1= householder completed 9-12 years of schooling, high school diploma; 0= otherwise
High school graduate or GED	1= householder received a high school diploma, GED, or equivalent; 0= otherwise
Some college	1= householder completed some college but no degree; 0= otherwise
Associate degree	1= householder received an Associate college degree; 0= otherwise
Bachelor's degree	1= householder received a Bachelor's college degree; 0= otherwise
Graduate degree	1= householder received a graduate college degree; 0= otherwise
Part-time employment	1= householder and/or spouse employed 1-29 hours/week, on average, in 2013; 0= otherwise
Net worth Quartile 1 (omitted reference group)	1= household net worth exclusive of retirement assets in lowest quartile (<$29,070); 0=otherwise
Net worth Quartile 2	1= household net worth exclusive of retirement assets in second quartile ($29,071-$140,550); 0= otherwise
Net worth Quartile 3	1= household net worth exclusive of retirement assets in third quartile ($140,551-$365,845); 0= otherwise

Net worth Quartile 4	1= household net worth exclusive of retirement assets in highest quartile (>$365,845); 0= otherwise
Northeast (omitted reference group)	1= residence in Northeast Census Region; 0= otherwise
Midwest	1= residence in Midwest Census Region; 0= otherwise
South	1= residence in South Census Region; 0= otherwise
West	1= residence in West Census Region; 0= otherwise

Source: Analysis of data from the 2014 Survey of Income and Program Participation and 2014 Social Security Administration Supplement on Retirement, Pensions, and Related Content.

[a] In a limited English-speaking household, no one 14 and over speaks English, or speaks a language other than English at home and speaks English "very well."

Table A-2: **Sample Means for Multivariate Analysis Estimation Samples**

	Households [b] (n=4,884)		Persons 65+ years [c] (n=6,441)	
Variable	**Mean**	**Standard Deviation**	**Mean**	**Standard Deviation**
Food insecurity hardship	0.10	0.30		
Health care hardship	0.48	0.50		
Shelter hardship	0.07	0.25		
Unaffordable housing costs	0.34	0.47		
Poor	0.13	0.33		
Near poor	0.24	0.43		
Not poor	0.63	0.48		
Public assistance receipt	0.15	0.35		
Medicaid enrollee	0.12	0.32	0.11	0.31
DB pension receipt	0.42	0.49	0.43	0.50
DC income receipt	0.31	0.46	0.35	0.48
SS income receipt	0.88	0.33	0.92	0.27
Male	0.42	0.49	0.43	0.49
Age	73.3	8.06	74.6	6.88
Foreign born	0.09	0.29	0.12	0.32
Non-Hispanic White [a]	0.77	0.42	0.78	0.42
Non-Hispanic Black	0.11	0.32	0.09	0.29
Hispanic	0.07	0.25	0.08	0.27
Other race	0.05	0.21	0.05	0.22
Married [a]	0.40	0.49	0.57	0.49
Widowed	0.21	0.41	0.13	0.34
Divorced or separated	0.31	0.46	0.25	0.43
Never married	0.08	0.26	0.05	0.22
Times married	1.29	0.74	1.31	0.71
Household size	1.71	0.94	2.00	1.10
Linguistic isolation	0.02	0.14	0.02	0.13
Fair or poor health	0.35	0.48	0.34	0.47
0-8 years of schooling [a]	0.07	0.25	0.08	0.27
9-12 years of schooling	0.10	0.29	0.09	0.29
High school graduate or GED	0.32	0.47	0.33	0.47
Some college	0.19	0.39	0.18	0.38
Associate degree	0.07	0.25	0.06	0.23
Bachelor's degree	0.15	0.35	0.15	0.36
Graduate degree	0.12	0.32	0.12	0.32
Part-time employment	0.12	0.33	0.11	0.31
Net worth Quartile 1 [a]	0.28	0.45	0.22	0.41
Net worth Quartile 2	0.22	0.41	0.21	0.41
Net worth Quartile 3	0.24	0.43	0.26	0.44
Net worth Quartile 4	0.25	0.44	0.31	0.46

Northeast [a]	0.18	0.39	0.18	0.39
Midwest	0.22	0.42	0.21	0.41
South	0.38	0.48	0.38	0.49
West	0.22	0.41	0.22	0.42

Source: Analysis of data from the 2014 Survey of Income and Program Participation and 2014 Social Security Administration Supplement on Retirement, Pensions, and Related Content.

[a] Omitted reference group.

[b] Households include households with a householder 60 years and older in which both the householder and his/her spouse/partner worked fewer than 30 hours per week, on average, in 2013.

[c] Persons include individuals 65 years and older who worked fewer than 30 hours per week, on average, in 2013.

Table A-3: **Multinominal Logit Model Results for Household Poverty Class (n=4,484)**

	Poor relative to Not-Poor		Near-Poor relative to Not-Poor	
Variables	**Relative Risk Ratio**	**p-value**	**Relative Risk Ratio**	**p-value**
DB pension receipt	0.27	0.000	0.38	0.000
DC income receipt	0.50	0.000	0.59	0.000
SS income receipt	0.06	0.000	0.52	0.000
Male	0.94	0.650	0.82	0.038
Age	0.97	0.000	1.00	0.523
Foreign born	2.27	0.001	1.10	0.614
Non-Hispanic Black	1.35	0.065	1.29	0.075
Hispanic	0.88	0.665	1.25	0.269
Other race (White) [a]	1.71	0.065	1.44	0.144
Widowed	2.78	0.000	1.45	0.020
Divorced or separated	2.33	0.000	1.63	0.001
Never married (Married)	3.00	0.000	1.40	0.105
Times married	0.97	0.707	0.91	0.159
Household size	0.88	0.170	0.79	0.000
Linguistic isolation	2.83	0.008	1.19	0.688
Fair or poor health	1.39	0.018	1.13	0.194
9-12 years of schooling	0.59	0.052	0.81	0.316
High school graduate or GED	0.47	0.004	0.54	0.003
Some college	0.18	0.000	0.35	0.000
Associate degree	0.22	0.000	0.35	0.000
Bachelor's degree	0.16	0.000	0.34	0.000
Graduate degree (0-8 years)	0.13	0.000	0.17	0.000
Part-time employment	0.24	0.000	0.35	0.000
Net worth Quartile 2	0.45	0.000	0.52	0.000
Net worth Quartile 3	0.32	0.000	0.32	0.000
Net worth Quartile 4 (NW Quartile 1)	0.13	0.000	0.15	0.000
1Midwest	0.83	0.342	0.63	0.001
South	1.29	0.192	0.79	0.062
West (Northeast)	0.70	0.101	0.68	0.005
Pseudo R-square	0.27			

Source: Analysis of data from the 2014 Survey of Income and Program Participation and 2014 Social Security Administration Supplement on Retirement, Pensions, and Related Content.

[a] Omitted reference groups are in parentheses.

Table A-4: **Logistic Regression Results for Household Hardship Outcome Models (n=4,484)**

	Food Insecurity		Health Care Hardship		Shelter Hardship		Unaffordable Housing		Public Assistance	
Variables	**Odds Ratio**	**p-value**	**Odds Ratio**	**p-value**	**Odds Ratio**	**p-value**	**Odds Ratio**	**p-value**	**Odds Ratio**	**p-value**
DB pension receipt	0.75	0.030	0.83	0.018	0.96	0.774	0.90	0.213	0.37	0.000
DC income receipt	0.67	0.031	0.61	0.000	0.73	0.110	0.81	0.020	0.47	0.001
SS income receipt	1.00	0.977	0.78	0.053	1.08	0.742	0.34	0.000	0.44	0.000
Male	0.93	0.610	1.29	0.001	1.05	0.765	0.98	0.800	0.72	0.012
Age	0.94	0.000	0.99	0.295	0.96	0.000	0.99	0.022	0.99	0.058
Foreign born	1.26	0.327	0.84	0.316	1.58	0.068	1.25	0.259	1.94	0.004
Non-Hispanic Black	1.45	0.024	1.09	0.450	1.99	0.000	1.21	0.127	2.42	0.000
Hispanic	1.19	0.529	0.83	0.238	1.26	0.390	0.99	0.943	1.09	0.715
Other race (White) [a]	0.73	0.333	1.04	0.871	0.81	0.587	1.00	0.983	1.69	0.068
Widowed	1.63	0.011	0.71	0.007	1.79	0.005	1.30	0.035	2.00	0.000
Divorced or separated	1.35	0.105	0.69	0.001	1.60	0.024	1.37	0.007	1.12	0.528
Never married (Married)	1.97	0.014	0.51	0.001	2.42	0.002	1.42	0.060	1.39	0.221
Times married	1.22	0.024	1.04	0.457	1.26	0.011	1.09	0.134	0.93	0.361
Household size	0.92	0.325	1.15	0.005	1.31	0.000	0.75	0.000	1.17	0.031
Linguistic isolation	0.81	0.631	0.86	0.647	0.65	0.312	1.07	0.827	2.30	0.029
Fair or poor health	2.19	0.000	1.32	0.001	1.73	0.001	1.18	0.053	1.87	0.000
9-12 years of schooling	0.83	0.442	1.26	0.266	0.78	0.404	0.97	0.871	0.75	0.211
High school graduate or GED	0.63	0.059	0.81	0.261	0.77	0.318	0.95	0.712	0.43	0.000
Some college	0.54	0.025	0.53	0.001	0.84	0.551	0.89	0.489	0.42	0.001
Associate degree	0.51	0.026	0.48	0.001	0.97	0.933	0.87	0.516	0.32	0.000
Bachelor's degree	0.39	0.003	0.32	0.000	0.55	0.137	0.98	0.905	0.34	0.000
Graduate degree (0-8 years of schooling)	0.28	0.000	0.29	0.000	0.63	0.210	0.69	0.069	0.20	0.000
Part-time employment	1.02	0.902	0.73	0.008	1.86	0.002	0.76	0.025	0.32	0.000
Net worth Quartile 2	0.54	0.000	0.63	0.000	0.45	0.000	0.55	0.000	0.29	0.000
Net worth Quartile 3	0.24	0.000	0.45	0.000	0.28	0.000	0.34	0.000	0.15	0.000
Net worth Quartile 4 (NW Quartile 1)	0.08	0.000	0.26	0.000	0.16	0.000	0.26	0.000	0.11	0.000
Midwest	0.88	0.539	1.22	0.081	0.90	0.668	0.68	0.003	0.52	0.000
South	0.91	0.659	1.23	0.078	1.03	0.893	0.68	0.002	0.59	0.001
West (Northeast)	1.11	0.665	1.22	0.113	1.03	0.912	0.80	0.089	0.64	0.031
Pseudo R-square	0.23		0.14		0.17		0.14		0.35	

Source: Analysis of data from the 2014 Survey of Income and Program Participation and 2014 Social Security Administration Supplement on Retirement, Pensions, and Related Content.

[a] Omitted reference groups are in parentheses.

Table A-5: **Logit Model Results for Medicaid Enrollment Status Outcome (n=6,441)**

Variables	Odds Ratio	p-value
DB pension receipt	0.45	0.000
DC income receipt	0.46	0.001
SS income receipt	0.51	0.000
Male	0.88	0.257
Age	1.01	0.482
Foreign born	1.81	0.001
Non-Hispanic Black	1.68	0.003
Hispanic	1.88	0.005
Other Race (Non-Hispanic White) [a]	2.09	0.006
Widowed	2.39	0.000
Divorced or separated	1.24	0.159
Never married (Married)	2.75	0.001
Times married	0.90	0.283
Household size	1.17	0.002
Linguistic isolation	2.37	0.016
Fair or poor health	1.61	0.000
9-12 years of schooling	0.79	0.260
High school graduate or GED	0.54	0.000
Some college	0.46	0.000
Associate degree	0.21	0.000
Bachelor's degree	0.39	0.001
Graduate degree (0-8 years of schooling)	0.36	0.001
Part-time employment	0.30	0.000
Net worth Quartile 2	0.24	0.000
Net worth Quartile 3	0.14	0.000
Net worth Quartile 4 (NW Quartile 1)	0.08	0.000
Midwest	0.60	0.020
South	0.66	0.028
West (Northeast)	0.80	0.277
Pseudo R-square	0.37	

Source: Analysis of data from the 2014 Survey of Income and Program Participation and 2014 Social Security Administration Supplement on Retirement, Pensions, and Related Content.

[a] Omitted reference groups are in parentheses.

ENDNOTES

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12. See Figure 1 on Page 8. Government Accountability Office (2015, May). Most Households Approaching Retirement Have Low Savings. GAO-15-419.

13. A note on terminology: the U.S. Census Bureau, which conducts the SIPP, uses the term "Hispanic." We will use that term when referring to SIPP data for consistency. Otherwise, the authors will use the more inclusive term "Latino."

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24. Most studies have shown that workers will participate overwhelmingly if they have access to a plan.

25. Note that poverty status is measured using the combined income of all household members regardless of their relationship to the householder.

26. A description of the six-item U.S. Household Food Security Survey Module of the USDA can be found at https://www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-us/survey-tools.aspx#six

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1. National Academies of Sciences, Engineering, and Medicine.(2018). The 2014 Redesign of the Survey of Income and Program Participation: An Assessment. Washington, DC: The National Academies Press. https://doi.org/10.17226/24864

2. National Academies of Sciences, Engineering, and Medicine. (2018), op cit..

3. In addition to potential response bias from the low response rate for the SSA Supplement, there may be greater recall bias due to the lag time added between the SIPP and subsequent SSA interview. Our own comparisons of 2014 SSA and SIPP data on retirement income and account data revealed some inconsistencies between some SSA and SIPP reports about income receipt and the amounts received.

4. Retired individuals cannot be definitively distinguished from information available in the SIPP. Although SIPP respondents are asked whether they ever retired from a job, some individuals who respond affirmatively to that question also report to be working full-time. Other SIPP respondents who report to have never retired from a job report the reception of retirement income. It is appropriate to include some of these latter respondents in the study population, such as individuals receiving survivor pension income. While there are shortcomings in using age and full-time work status to define the study population of interest, other definitions of retired persons and households also have their shortcomings.

5. The technical definition of householder and other terms used by the U.S. Census Bureau can be found on the following link https://www.census.gov/programs-surveys/cps/technical-documentation/subject-definitions.html#householder. While the Census Bureau discontinued use of the term "head of household" since 1980, in the main body of the report we may use the term head of household interchangeably with householder.

6. As noted earlier, telephone interviews were only obtained for about 52 percent of SIPP Wave 1 respondents

7. There were 71 respondents where the reported monthly

pension amount in the SSA Supplement were implausibly large due to the insertion of $23,900 per month as top coded values for that variable by the Census Bureau. Multiplying this value by twelve yielded an annual amount that greatly exceeded the total annual household income reported by these respondents earlier in the SIPP. A SIPP technical support advisor suggested that the $23,900 top coded value was the mean of a highly skewed distribution with some large reported values for the monthly pension amount variable and suggested that we might use the median top coded value of $6,600 for these cases. We substituted the median for the mean top coded value for 69 respondents who reported annual household incomes in the SIPP below $286,600 ($23,900 x12).

8. Similar to own DB pension income receipt, survivor DB pension income receipt requires that respondent report retirement, disability, or disability income that is expected to continue for the rest of one's life and either derived from the job or business of a former spouse, or other job or business source. For income associated with the job or business of former spouse there was no follow-up question in the SSA Supplement concerning how the payment amount was determined (i.e., pay and years of service versus an account balance). Hence it is possible that the source of lifetime survivor income for some SSA respondents may have been the balance of a former spouse's DC account.

9. A shortcoming of this measurement strategy is that some individuals may have both DB and DC income reported as retirement income in the SIPP. Since relatively few SIPP respondents were found in this subgroup of DC income recipients, any bias on estimated mean or median DC income amounts should be modest.

10. Since SIPP questions about reason for social security benefits are asked each month some individuals may report more than one reason for social security benefits over the course of the year. To avoid potential double counting of social security benefit amounts, "own social security receipt" is given precedence over "other social security receipt." For example, if a respondent received social security benefits based on his/her own employment history for part of the year and social security benefits because of widowhood for part of the year, the respondent would be classified as receiving own social security income and none of the income received would be counted as survivor income.

11. Porell F. and Almeida, B. 2009. The Pension Factor: Assessing the Role of Defined Benefit Plans in Reducing Elder Economic Hardships. Washington, DC: National Institute on Retirement Security.

12. Porell, F., and Oakley, D. 2012. The Pension Factor 2012: Assessing the Role of Defined Benefit Plans in Reducing Elder Economic Hardships. Washington, DC: National Institute on Retirement Security

13. A description of the six-item U.S. Household Food Security Survey Module of the USDA can be found at https://www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-us/survey-tools.aspx#six

14. Although the simple 30-percent of income standard has limitations, it is nevertheless a fairly reliable indicator of affordable housing. See Hebert, C., Hermann, H., and McCue, D. 2018, Measuring Housing Affordability: Assessing the 30-Percent of Income Standard. Joint Center for Housing Studies, Harvard University. https://www.jchs.harvard.edu/sites/default/files/Harvard_JCHS_Herbert_Hermann_McCue_measuring_housing_affordability.pdf

15. Medicaid status was defined for individuals 65 years or older rather than for 60 years or older because there is considerable variation in Medicaid expenditures per enrollee among age groups. Whereas data on public Medicaid expenditures per enrollee age were not readily available for Medicaid enrollees 60 years and older, such data were available for the eligibility group of aged Medicaid enrollees 65 years and older. The adult Medicaid eligibility group included individuals over an age range spanning 18-64 years.

16. Medicaid and CHIP Payment and Access Commission. (2018). MACStats: Medicaid and CHIP Data Book (Washington, DC: Medicaid and CHIP Payment and Access Commission). https://www.macpac.gov/wp-content/uploads/2018/12/December-2018-MACStats-Data-Book.pdf

17. Porell and Almeida (2009), op cit.

18. Porell and Oakley (2012), op cit.

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