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How Much Should the Poor Save for Retirement? Data and Simulations on Retirement Income Adequacy among Low-earning Households

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How Much Should the Poor Save for Retirement? Data and Simulations on Retirement Income Adequacy among Low-earning Households

Abstract

Both policymakers and members of the public are concerned regarding the adequacy of U.S. households' retirement savings. In response, proposals have been made to expand Social Security benefits and to establish state government-run retirement plans for private sector employees. In both cases, the largest effects would be on low-earning households, who currently have low rates of retirement plan coverage and participation and who rely heavily upon Social Security benefits in retirement. However, there has been little systematic analysis of the retirement saving needs of low-earning households other to point out that they currently save little. But this leaves open the possibility that low savings are appropriate given Social Security's progressive benefits. I explore these questions in two ways. First, I present a variety of data on the retirement saving and retirement incomes of low-earning households. While these households save little, their retirement incomes have risen steadily over the past decades and their poverty rates dropped significantly, seemingly as a result of rising real Social Security benefits. Low-income retirees express less satisfaction with the adequacy of their retirement incomes than other retirees, but their self-assessed retirement income adequacy has increased in recent years. Second, I present a simple model to calculate the household wealth and saving rates necessary for stylized earners to achieve income-specific retirement income replacement rate targets, net of scheduled Social Security benefits. For very low earners, roughly the poorest quintile of the earning distribution, little savings are necessary on top of Social Security. For earners above that level saving requirements increase, but are likely achievable so long as an earner has access to a retirement plan and participates in it.

Keywords

retirement, Social Security, poverty

Disciplines

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Comments

The published version of this working paper may be found in the 2020 publication: *Remaking Retirement: Debt in an Aging Economy*.

Remaking Retirement

Debt in an Aging Economy

EDITED BY

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Contents

<i>List of Figures</i>	ix
<i>List of Tables</i>	xiii
<i>Notes on Contributors</i>	xvii
1. Introduction: Debt in an Aging Economy <i>Olivia S. Mitchell and Annamaria Lusardi</i>	1
Part I. Debt Developments in an Aging Economy	
2. Debt Close to Retirement and its Implications for Retirement Well-being <i>Annamaria Lusardi, Olivia S. Mitchell, and Noemi Oggero</i>	15
3. The Graying of American Debt <i>Meta Brown, Donghoon Lee, Joelle Scally, and Wilbert van der Klaauw</i>	35
4. The Risk of Financial Hardship in Retirement: A Cohort Analysis <i>Jason Brown, Karen Dynan, and Theodore Figinski</i>	60
Part II. Retirement, Debt, and Financial Fragility at Older Ages	
5. Financial Distress among the Elderly: Bankruptcy Reform and the Financial Crisis <i>Wenli Li and Michelle J. White</i>	89
6. Mortgage Foreclosures and Older Americans: A Decade after the Great Recession <i>Lori A. Trawinski</i>	106
7. Paying It Back: Real-world Debt Service Trends and Implications for Retirement Planning <i>Anne Lester, Katherine S. Santiago, Je Oh, Livia Wu, and Ekaterina Chegaeva</i>	116

viii Contents

8. Is Rising Household Debt Affecting Retirement Decisions? 132
Barbara A. Butrica and Nadia S. Karamcheva

Part III. Policy Perspectives on Debt at Older Ages

9. How Much Should the Poor Save for Retirement? Data and Simulations on Retirement Income Adequacy among Low-earning Households 167
Andrew G. Biggs
10. Financial Well-being of State and Local Government Retirees in North Carolina 184
Robert L. Clark and Siyan Liu
11. Household Debt and Aging in Japan 207
Charles Yuji Horioka and Yoko Niimi
12. Understanding the Macro-financial Effects of Household Debt: A Global Perspective 226
Adrian Alter, Alan Feng, and Nico Valckx
- The Pension Research Council* 255
Index 259

Chapter 9

How Much Should the Poor Save for Retirement? Data and Simulations on Retirement Income Adequacy among Low-earning Households

Andrew G. Biggs

There is substantial public concern over retirement income adequacy in the United States, particularly as several studies project that a majority of US households have retirement savings significantly below the levels required to maintain their pre-retirement standards of living (Rhee 2013; Brown et al. 2020). While other studies present a much more optimistic picture (Gale et al. 2009), opinion polls show most Americans believe the nation faces a ‘retirement crisis.’

In response, elected officials at the federal, state, and even city levels have proposed policies to increase retirement incomes, in particular for low-income retirees. A majority of the Democratic Members of the US House of Representatives co-sponsored the ‘Social Security 2100 Act,’ which would increase social security benefits for all retirees, but particularly for households with low lifetime earnings. At the state and city levels, governments are establishing ‘auto-IRA’ plans that would automatically enroll employees who lack a workplace retirement plan into an Individual Retirement Account (IRA) administered by the state. Low-earning workers are far less likely to be offered a retirement plan at work than high earners. According to the Bureau of Labor Statistics (2017) National Compensation Survey, which gathers data from employers, only 34 percent of the lowest decile of wage earners is offered a retirement plan at work, versus 91 percent of the highest decile (BLS 2017). Thus, low earners are a target population for these new auto-IRAs plans.

Nevertheless, little attention has been paid to how much low-income households need to save in order to maintain their standards of living in retirement. Low-income households do save little for retirement above the amounts they and their employers contribute to the Social Security program, but that fact alone does not indicate that their saving is inadequate. Given the costs of expanding social security and of establishing state- or

168 Remaking Retirement

city-run auto-IRA plans, saving requirements for low earners are a relevant topic for policymakers at all levels of government.

This chapter approaches this question from two perspectives. First, I present background data on levels and trends of incomes and income sources of low-income retiree households. Some of these data are relatively new or not well known, and they may provide new perspectives on retirement income adequacy among lower-income households. Second, I construct a simple model of lifetime earnings, social security benefits, and retirement income adequacy. Using that model, I infer the level of savings that would enable low-earning households to meet a target replacement rate once they retire. I conclude that low-earning households, like all households, are a diverse group. It is impossible to determine whether ‘the poor’ need to save more for retirement overall. Yet both the data and the model results imply that, as a group, most low earners would be able to maintain their pre-retirement standards of living with levels of savings and retirement wealth significantly below those recommended for middle and upper-income households.

Retirement Preparedness of Low-income Households

A great deal of research on retirement saving and retirement incomes is conducted using household surveys, including the Current Population Survey (CPS), the Survey of Consumer Finances (SCF), the Health and Retirement Study (HRS), the Survey of Income and Program Participation (SIPP), and others. A recurring issue with household surveys, and the studies of retirement saving and incomes that rely on them, has to do with data quality. For instance, Current Population Survey data on self-reported household responses indicate that less than 40 percent of full-time employees are offered a retirement plan at work. By contrast, employer responses in the National Compensation Survey indicate that over 80 percent of full-time employees are offered a plan. Likewise, matching SIPP data to income tax records reveals that participation in employer-sponsored retirement plans is roughly one-quarter higher than is reported by SIPP respondents (Dushi and Iams 2010).

Using Internal Revenue Service (IRS) data, Bee and Mitchell (2016, 2017) have shown that the SIPP and CPS fail to capture roughly half of the income that retirees receive from private retirement plans. This causes the CPS data to understate median retiree incomes by 30 percent and overstates the degree to which retirees rely upon social security in retirement. Retiree incomes measured using IRS data exceed not only those in the CPS, but also the HRS and SIPP as well. This can be inferred from comparing Bee and Mitchell (2017) to Dushi et al. (2017). These data-quality issues even affect

How Much Should the Poor Save for Retirement? 169

low-income retirees, where private retirement plan benefits are not very prevalent. For instance, Bee and Mitchell (2017) find that incomes at the 10th percentile of the retirement population are 13 percent higher measured using administrative data, compared to CPS responses; at the 25th percentile, incomes are 26 percent higher. Despite the mountain of research on retirement savings and incomes, it is hard to avoid the conclusion that we as researchers often know substantially less than we purport to.

Nevertheless, we can work around these data weaknesses. For instance, since retirement income adequacy is at least partly subjective, one way to judge it is simply to ask retirees to describe their incomes. Table 9.1 uses SCF data for 1992 and 2016, in which households age 65+ assess the adequacy of their retirement incomes ranging from ‘totally inadequate’ to ‘very satisfactory.’ I present figures both for the entire 65+ population and for 65+ households in the bottom quartile of the income distribution, measured on a household rather than an individual basis. Therefore, though they may not accurately reflect the distribution of responses within the retiree population, they do provide some insight into how retirees view the adequacy of their incomes. Among households in the bottom quartile of the income distribution in 1992 and 2016, a substantial number viewed their incomes with great dissatisfaction. In 1992, 55 percent of low-income retirees declared their incomes to be either ‘totally inadequate’ or one step above

TABLE 9.1. Self-assessed retirement income adequacy, by year and income

Households with incomes below the 25th percentile (%)		
Descriptor	1992	2016
1 (Described to respondents as ‘Totally Inadequate’)	38.5	32.1
2	16.5	11.5
3 (‘Enough to Maintain Standard of Living’)	38.0	38.7
4	2.4	5.8
5 (‘Very Satisfactory’)	4.7	11.8
Households with incomes above the 25th percentile		
Descriptor	1992	2016
1 (Described to respondents as ‘Totally Inadequate’)	21.3	8.5
2	12.5	10.2
3 (‘Enough to Maintain Standard of Living’)	51.2	32.9
4	4.1	18.7
5 (‘Very Satisfactory’)	10.9	29.7

Note: Respondents are asked to rate the adequacy of their incomes on a 1 to 5 scale; only points 1, 3, and 5 are given descriptive labels.

Source: Author’s calculations, Survey of Consumer Finances.

170 Remaking Retirement

that level (on a one-to-five scale). By 2016, only 43 percent of low-income retirees had a similar assessment. While an improvement, there are still a large number of low-income retirees with very poor assessments of their retirement incomes. Among non-poor retirees, self-assessed retirement income adequacy started stronger in 1992 and improved thereafter. In 1992, 34 percent of retirees with incomes above the 25th percentile judged their incomes to be in the bottom two categories of adequacy; 15 percent judged their incomes to be in the top two categories of sufficiency. By 2016, only 19 percent of non-poor retirees judged their incomes in the bottom two sufficiency categories, while nearly half (48%) judged their incomes to be in the top two of five sufficiency categories.

At the same time, changes in the underlying income figures denoting the poorest quartile of the retiree population present a much more positive picture for low-income retirees. In 1992, the 25th percentile threshold of the 65+ household income distribution was \$15,780 (in 2016 dollars). By 2016, the 25th percentile was at \$24,000 in household income, a 52 percent real increase in household incomes over the course of 24 years.¹ For context, over that same time period, median incomes for near-retiree households in the SCF age 50–59 declined by 3 percent in real terms, while real income for near-retirees at the 25th percentile declined by 8 percent. While these data do not allow for direct comparisons of retiree incomes to their own pre-retirement earnings, the significantly more rapid increase in incomes for poor retirees than for poor near-retirees in the SCF points toward greater retirement income adequacy for that group.

Additionally, Bee and Mitchell's (2017) analysis using Current Population Survey data matched to IRS administrative data finds that the poverty rate among the age 65+ population fell from 9.7 percent in 1990, to 6.9 percent in 2012. Moreover, of retirees living in poverty in 2012, roughly half (47%) owned their homes outright; 13 percent were homeowners with mortgages, while 40 percent were renters. Nevertheless, this population remains heavily dependent on government programs. According to Butrica et al. (2012), roughly 20 percent of the bottom quintile of lifetime earners will fail to qualify for social security retirement benefits, thus lending a greater role for means-tested sources of income including Supplemental Security Income (SSI). Bee and Mitchell (2017) show that the average household in the bottom fifth of the retiree income distribution in 2012 received 87 percent of its income from social security and SSI benefits (Table 9.2). Most of the reduction in retiree poverty over the past two decades is likely attributable to the real increase in social security benefits, driven by initial retirement benefits from cohort to cohort rising at the rate of wage growth rather than inflation. Low-income retirees have few private retirement plan benefits and SSI benefits are indexed only to inflation, so it is likely that social security has played the largest role in reducing old age poverty.

How Much Should the Poor Save for Retirement? 171

TABLE 9.2. Composition of retirement income for bottom quintile of retiree population

Retirement plan income										
Mean income	Earnings	Social security	SSI	Interest	Total	DB	IRA	Non-IRA	Un-known	Other income
\$10,282	\$308	\$7,482	\$1,389	\$281	\$617	\$514	\$65	\$0	\$0	\$140
Shares	3%	73%	14%	3%	6%	5%	1%	0%	0%	1%

Source: Derived from Bee and Mitchell (2017).

It is also worth considering replacement rates for low-earning households. These represent retirement income as a percentage of pre-retirement earnings, and as such are an approximation of the life cycle metric where households tend to smooth consumption over time. A replacement rate of 100 percent of pre-retirement earnings is not necessary because household expenses tend to decline in retirement. Moreover, while the concept of the replacement rate is well-understood—retirement income as a percentage of pre-retirement earnings—there is no consensus on the target measure of pre-retirement earnings that best represents pre-retirement consumption. In a Keynesian-style consumption function, in which households spend some percentage of their annual income, earnings just prior to retirement might be a relevant denominator. In a lifecycle model approach, by contrast, real earnings over a full working career might be a better approximation. The SSA's Office of the Chief Actuary compares social security benefits to pre-retirement earnings indexed for the growth of national average wages, which in effect compares social security benefits in a given year to workers' earnings that year. This approach implicitly assumes that households follow a relative income model in which they seek retirement incomes that keep up with the earnings of working-age households (Biggs 2017). This discussion is simply to make readers aware of the diversity of replacement rate figures available, so these figures can represent different underlying concepts of retirement income adequacy.

Table 9.3 shows social security replacement rates measured using the Congressional Budget Office Long Term model (CBOLT), a microsimulation model of the US population (CBO 2017). Replacement rates are measured using the retiree's initial social security benefit assuming benefits are claimed at age 65, as a percentage of the inflation-adjusted average of career-long pre-retirement earnings. Implicitly, this calculation assumes that households smooth consumption over long periods of time. The sample population consists of individuals eligible to receive benefits based on their own earnings who had not previously claimed a disability or other benefit. Benefits calculated are based on the beneficiary's own earnings record and exclude any

172 Remaking Retirement

TABLE 9.3. Social security replacement rates, measured relative to career-average earnings adjusted for inflation

Year of birth	Lifetime income quintile (%)				
	Lowest	Second	Middle	Fourth	Highest
1940s	94	70	60	52	39
1950s	84	63	54	46	34
1960s	83	64	54	46	33
1970s	89	67	56	47	33
1980s	94	71	58	49	36
1990s	96	72	60	50	36
2000s	94	70	58	49	36

Source: Derived from Congressional Budget Office (2017).

auxiliary benefits paid to spouses and widows. According to Social Security Office of the Chief Actuary (2017) estimates, approximately 39 percent of the lowest quintile of lifetime earnings are dually entitled and thus eligible to receive a supplemental benefit. As a result, Table 9.3 showing replacement rates for low-income retirees should be considered conservative. Nevertheless, the CBO calculations show the bottom quintile of retirees receiving replacement rates of between 84 and 96 percent of real average pre-retirement earnings, depending upon their birth cohort. While other approaches are available to calculate replacement rates, these figures do not express a pressing need for additional retirement savings by the poorest fifth of the population. Even in the second quintile, only modest additional retirement savings would be needed to maintain pre-retirement levels of expenditures.

The Social Security Administration's (SSA) Model of Income in the Near Term (MINT) projects both social security benefits and other forms of retirement income, providing insights into the evolution of retirement income adequacy. Using MINT, Butrica et al. (2012) calculate total retirement income replacement rates for households in the bottom fifth of the lifetime earnings distribution. These replacement rates are measured relative to the wage-indexed average of pre-retirement earnings. As noted above, wage-indexed replacement rates equate the incomes of retirees at a given spot in the income distribution, to those of contemporaneous workers at the same spot in the earnings distribution. Thus in Butrica et al. (2012), a replacement rate of 100 percent for the bottom quintile of lifetime earners in a given year indicates that those retired households have incomes approximately equal to the earnings of the bottom fifth of workers that year. The MINT analysis indicates a steep decline in wage-indexed replacement rates for low-earning households, but to levels that most financial planners would nevertheless consider to be more than adequate to maintain pre-retirement standards of living. MINT calculates that the bottom quintile of retirees born

How Much Should the Poor Save for Retirement? 173

during the Depression era, from 1926 to 1935, had median wage-indexed replacement rates of 145 percent. For the late Baby Boomers born 1956 to 1965, median replacement rates for the lowest-quintile of lifetime earners had fallen to 103 percent, projected to rise slightly to 104 percent for the Gen-X cohorts born 1966 to 1975. This decline is steep, but it still leaves the lowest-earning fifth of retirees with higher incomes than similarly situated workers at that time. Relative to their own pre-retirement earnings adjusted for inflation, which are roughly 25 percent lower than their wage-indexed average earnings (Biggs et al. 2015), the MINT figures imply median replacement rates for low-earning households of well over 100 percent.

These MINT data are supported by recent research that uses IRS administrative evidence to assess alternative measures of pre- and post-retirement adequacy. Brady et al. (2017) calculate a replacement rate that compares per capita household incomes three years following social security claiming, to incomes in the year prior to claiming. For retirees in the lowest income quintile, the median replacement rate was 123 percent, with an interquartile range of 90 to 174 percent. Ten percent of the bottom quintile of retirees had replacement rates below 60 percent. Bee and Mitchell (2017) calculated pseudo-replacement rates comparing incomes of retirees at different points in the retiree income distribution to pre-retirement earnings over different averaging periods in those same percentiles of the earnings distribution. Several figures are presented, but here I compare per capita incomes at the 25th percentile of the retiree income distribution five years following social security benefit claiming, equal to \$26,553 in 2012, to inflation-adjusted earnings at the 25th percentile over various periods leading up to retirement. Relative to the five years prior to retirement, retirees at the 25th percentile had replacement rates of 124 percent. For a decade prior to retirement the figure was 105 percent; for 15 years, 93 percent; over 20 years, 88 percent; and for 25 years, 82 percent. While there is no definitive interpretation of these figures, they do support the conclusion that current low-income retirees do not have standards of living substantially below those experienced during their working years.

In combination, these data lead to the conclusion that most low-earning households save relatively little for retirement, yet low saving does not in general preclude them from maintaining their pre-retirement standards of living. The major reason to the relative progressivity of social security and the availability of other government benefits such as SSI.

Modeling Saving Adequacy for Low Earners

Next, I construct a simple model of retirement income adequacy, accounting for the amounts needed in retirement on top of social security benefits

174 Remaking Retirement

scheduled under current law. I begin with stylized earners created by the SSA's Office of the Chief Actuary (Clingman and Burkhalter 2015), these stylized earners are described in Table 9.4. The 'very-low' and 'low-' wage earners are most relevant for the current discussion, but I include the higher-earning stylized workers for completeness. The 'very-low' earners have career-average annual earnings equal to 25 percent of the national average wage, which result from low-wage rates and/or truncated working careers. The 'low-' earners have average annual earnings equal to 45 percent of the average wage. These two worker types make up approximately the bottom two quintiles of the lifetime earnings distribution.

Of course, these stylized workers do not earn the same every year. Rather, the SSA actuaries utilize administrative data from the agency's Continuous Work History Sample.² Average earnings by age are calculated, resulting in the typical concave earnings patterns followed by many individuals, in which earnings rise as workers gain experience but then decline as they near retirement and reduce work hours or drop out of the labor force entirely. This concave age-earnings profile is then adjusted upward or downward to produce average lifetime earnings for each stylized worker type. The exception to this concave pattern is the 'maximum' wage earner, who is assumed to earn the maximum wage subject to payroll taxes in each year of his working career. For each stylized worker, I calculate annual social security benefits payable at the full retirement age.

To calculate social security replacement rates, I compare the initial social security benefit to inflation-adjusted average earnings from age 45–60. The use of age 45–60 earnings in the denominator of the replacement rate calculation is intended as a rough compromise between figures relying on full-career earnings and those that focus on earnings just prior to retirement (Table 9.5). For a very low earner, the social security replacement rate shown is 87 percent. For a low-wage earner, the social security replacement rate is 63 percent.

TABLE 9.4. Descriptive statistics on SSA stylized earners

Stylized earner designation	Average annual earnings (\$)	Average earnings as a % of average wage index	% of actual workers with earnings closest to scaled earner
Very low	11,610	25	19
Low	20,898	45	23
Medium	46,439	100	30
High	74,303	160	20
Maximum	112,537	242	9

Source: Derived from Clingman and Burkhalter (2015).

How Much Should the Poor Save for Retirement? 175

Next, we establish replacement rate goals for total retirement incomes relative to pre-retirement earnings, net of the social security benefit.³ The SSA (2019) states that ‘most financial advisors say you’ll need about 70 percent of your pre-retirement earnings to comfortably maintain your pre-retirement standard of living.’ Nevertheless, most experts also believe that low-income retirees require higher replacement rates to maintain their pre-retirement standards of living, because they pay lower taxes during their working years and devote smaller shares of their pre-retirement earnings to saving. Likewise, higher earners should aim for a higher replacement rate. Myers (1983) analyzes wages, working costs, and federal and state income taxes, estimating that a total replacement rate of 70 to 75 percent of final earnings would be appropriate for an average wage worker, with target replacement rates of 85 to 90 percent of earnings for the lowest earners and 55 to 60 percent for workers at the maximum taxable wage.⁴ Based on these recommendations, I use figures at the higher end of Myers’s ranges (see Table 9.6). I select a target replacement rate of 90 percent for the

TABLE 9.5. Social security benefits and replacement rates for SSA stylized earners

	SSA stylized earning level, retiring at 66 in 2015				
	Very low	Low	Medium	High	Max
Social security benefit at age 66	\$8,868	\$11,602	\$19,115	\$25,342	\$30,834
Average real earnings, age 46–60	\$10,807	\$17,107	\$38,014	\$60,821	\$112,779
Social security replacement rate (%)	82	68	50	42	27

Note: Replacement rate compares initial social security benefits to average inflation-adjusted earnings from ages 46 through 60.

Source: Author’s calculations from 2016 Social Security Trustees Report, Table V.C7.

TABLE 9.6. Target replacement rates, retirement savings and pre-retirement saving rates

	SSA stylized earnings level, retiring at 66 in 2015				
	Very low	Low	Medium	High	Max
Social security replacement rate (%)	87	63	47	39	29
Target replacement rates from Myers (1993) (%)	90	83	75	67	60
Required replacement rate from personal savings (%)	3	20	28	28	31
Assumed longevity at age 66 (years)	15	17	20	23	25
Target savings as multiple of age 65 earnings	0.6	4.0	6.6	7.5	6.2
Target saving rate as percent of age 30–65 earnings (%)	0.4	2.6	4.4	4.9	6.4

Source: Author’s calculations.

176 Remaking Retirement

very-low-wage earner, 83 percent for the low-wage worker, 75 percent for the medium wage earner, 67 percent for the high-wage worker, and 60 percent for the maximum wage earner.

Netting the target replacement rate against the social security replacement rate produces the retirement income replacement rates that individuals must generate via their own savings. For the very low earners this savings-based replacement rate is 3 percent of pre-retirement earnings; for the low earners it rises to 20 percent. At the high end, maximum-wage earners must generate additional retirement income equal to 31 percent of their pre-retirement earnings.

I next calculate the savings necessary as of the retirement age to generate these supplements to social security benefits. The first choice is the interest rate to be assumed on savings both pre- and post-retirement. I assume that earners invest their savings in a portfolio consisting of 60 percent equities and 40 percent bonds, earning the average return from 1926 to 2015 (Vanguard 2017). This return is 8.7 percent in nominal terms and 5.7 percent when adjusted for inflation using the CPI-U. To generate inflation-adjusted drawdowns over retirement, I use the 2015 implied real yield on 10-year Treasury Inflation Protected Securities of 0.8 percent.⁵ The idea is to illustrate the mix of relatively high historical investment returns coupled with the low interest rate environment retirees have experienced in recent years.

One must also make an assumption about the period of time over which these savings must last. A common approach is to assume that each retiree purchases a life annuity based upon population-average mortality. Few retirees actually purchase such annuities, but for analysis of an average retiree, this is not an unreasonable shorthand approach. Nevertheless, research finds widening differentials in mortality by income levels, such that high-income retirees can be expected to survive substantially longer after retirement than lower-income retirees. The GAO (2016) survey of recent research on differential mortality patterns concluded that, due to differences in life spans, a retiree at the 75th percentile of the income distribution would survive 17 percent longer than the average retiree, while a low-income retiree at the 25th percentile of the income distribution would have a 13 percent shorter duration of retirement. The 25th and 75th percentiles of the income distribution equate approximately to the SSA 'low' and 'high' wage stylized workers. Using these figures coupled with the Social Security Trustees' assumed average life expectancy of 20.5 years as of age 65, I generate life expectancies at retirement age for the low and high-wage stylized workers. I then linearly extrapolate this pattern to the very low and maximum wage earners. Because I assume retirement at age 66, I reduce each worker type's life expectancy by one year. Thus, the very low-wage earner is assumed to survive for 15 years past retirement, versus

How Much Should the Poor Save for Retirement? 177

25 years for the maximum wage earner. This reduces required savings by lower earners, but it increases the benchmark for higher earners.

These assumptions produce target savings as of retirement: to render these figures more understandable, I express them relative to annual earnings as of age 65. Savings to final earnings targets are commonly discussed in retirement planning. For the very-low- and low-wage earners, the savings to final salary targets are 0.6 and 4.0, respectively. Target savings amounts rise with earnings through the medium- and high-wage earning distributions, but they are lower for maximum wage earners. This is a function of how the maximum wage earner's earnings are assumed to evolve late in their career. For the very-low- through high-scaled-earners, earnings follow an inverted-U pattern such that earnings decline somewhat years approaching retirement. The maximum wage earner is assumed to continue working at whatever the maximum taxable wage is for the year, and thus there is no decline. This produces a lower ratio of target savings to final earnings.

I next translate these target savings as of retirement age into a saving rate as a percentage of the worker's earnings. I assume that stylized workers do not begin saving until age 30, which is consistent with a life cycle approach. The required saving rate is the present value of the target retirement savings as of age 66 expressed as a percentage of career earnings from age 30 through age 65, where the discount rate is equal to 5.7 percent. These calculations imply practically no required savings by very low earners, at only 0.4 percent of earnings from age 30–65. Required saving rates rise to 2.6 percent of earnings for the low-wage worker, and 6.4 percent of earnings for the maximum-wage-earner. These required rates of retirement saving seem readily accomplishable without creating undue stress on household finances. Yet if low-earner households do not save at all for retirement, they may not reach retirement saving goals. At higher earnings levels, these low target saving rates may explain why current retirees generally express satisfaction with their standards of living, even if many household savings levels appear to be modest.

I next turn to sensitivity analysis of these figures, so as to illustrate how much target retirement savings and saving rates could vary with alternate assumptions. Instead of using historical interest rates, which combine a high return on pre-retirement savings with a low yield on post-retirement savings, I instead use future rates implied in the CBO's projections based on its modeling of the Social Security program's finances. Annual-level assumptions are set for interest rates, both in real and nominal terms. For these purposes, I rely on interest rates projected for the year 2047, the most distant year for which CBO makes annual assumptions and one which might approximate what today's younger workers could experience in retirement. For 2047, the CBO projects a real interest rate of 2.3 percent on Treasury bonds held by the Social Security Trust Funds, and a nominal interest rate of

178 Remaking Retirement

4.7 percent. In sensitivity analysis, I will assume that workers could draw down their savings based on an underlying real interest rate of 2.3 percent, which is substantially higher than the market yields available to individuals retiring in 2015.

Yet the CBO also projects that returns on risky assets will be lower than the historical return used in its baseline calculations. Both the CBO and the SSA use a building-block approach in projecting returns in risky assets, by applying a risk premium to the low-risk yield on bonds held in the Social Security Trust Funds. The CBO (2004) assumes that stocks will pay, on average, a risk premium of 3.5 percentage points over the medium to long-term Treasury bonds held in the Social Security Trust Funds, while corporate bonds receive a 0.5 percentage point premium. For a 60–40 stock–corporate bond portfolio, this generates an assumed real return of 4.6 percent, substantially lower than the 5.7 percent real historical return assumed in the baseline projection. A lower assumed return on pre-retirement savings does not alter the income that retirees receive from any given savings-to-salary target, but it increases the personal saving rate required to achieve any given target.

Target retirement savings decrease slightly due to the higher assumed interest rate on post-retirement savings. For instance, for the very low earner, target savings decline from 0.6 to 0.5 times age 65 earnings (Table 9.7). Despite this, the saving rates required to achieve those targets increase, due to the downward shift in assumed pre-retirement rates of return. Thus, the required saving rates rise to 0.5 percent and 5.0 percent of pre-retirement earnings for the very-low- and low-wage earners, respectively.

In an additional analysis, I estimate the required saving rates for very low and low-wage earners using the CBO's assumed 4.9 percent yield on bonds held in the Social Security Trust Funds. This might make sense if we assume that low earners have less ability to adjust their saving rates late in life or their retirement ages in response to low returns on risky assets, or if we assume that low-income households require additional protection against

TABLE 9.7. Required saving targets assuming CBO-based interest rates

	SSA stylized earning level, retiring at 66				
	Very low	Low	Medium	High	Max
Target savings, as multiple of final earnings	0.5	3.5	5.7	6.4	5.2
Required saving rate, percent of earnings from age 30–65 (%)	0.5	5.0	8.1	9.0	11.1

Note: These calculations assume a real interest rate of 4.6% on pre-retirement savings and 2.3% on post-retirement savings.

Source: Author's calculations.

How Much Should the Poor Save for Retirement? 179

TABLE 9.8. Required saving rates assuming CBO-based interest rates and 20 percent greater post-retirement longevity, by lifetime earnings

	SSA stylized earning level, retiring at 66				
	Very low	Low	Medium	High	Max
Life expectancy at retirement (years)	18.0	20.4	24.0	27.6	30.0
Target savings, as multiple of final earnings	0.6	4.1	6.6	7.3	6.0
Required saving rate, percent of earnings from age 30–65 (%)	0.6	3.8	6.1	6.8	8.5

Source: Author's calculations.

falling below absolute income thresholds. This exercise also assumes pre-retirement earnings accumulate at the CBO's long-term assumed yield on Social Security Trust Fund bonds, which raises required saving rates to 0.7 percent and 5.4 percent of age 30–65 earnings for the very low and low wage earners, respectively.

I next revert to the CBO-based assumed real return of 4.6 percent on pre-retirement savings, but then I also assume that households wish to build in a margin of error in case they live beyond the average life expectancy for their income group. I arbitrarily posit that households wish to plan for a life expectancy up to 20 percent longer than their income group average. This produces a life expectancy at age 66 of 18 years for the very low earner, and 20 years for the low earner, and 30 years for the maximum wage earner (see Table 9.8). Required saving rates remain very modest for the very-low-wage earner at 0.6 percent of age 30–65 earnings, but they reach 3.8 percent of earnings for the low-wage earner. A low-wage earner who consistently participated in a 401(k) plan with an employer match could easily achieve this level of savings, but ensuring participation and contributions remains a more difficult issue given lower access among low-income households.

Conclusion

This study evaluates income adequacy for lower-income retirees from two perspectives. A data perspective shows that incomes have grown fairly rapidly for low-income retirees and poverty rates have declined substantially in recent decades. Most low-income retirees are able to maintain their pre-retirement standards of living. While lower-income retirees remain highly dependent upon social security and SSI, it is not at all clear that these households should increase how much they currently save for retirement. A model-based simulation tells a similar story. For the very poor, meaning roughly the bottom fifth of the lifetime earnings distribution, social security

180 Remaking Retirement

replacement rates approach the total retirement income replacement rate needed to maintain their pre-retirement standard of living. This implies that required supplemental savings tend to be very small, generally well below one percent of earnings from ages 30 through 65. For workers with somewhat higher earnings, in approximately the second earnings quintile, some supplemental saving is required but these requirements again are modest, in the range of 3 percent of earnings. Such a saving rate is likely achievable for low-earning most households, but only if they are offered a retirement plan and participate in it. For middle and upper-income households examined for completeness, required saving rates are higher but not extraordinarily so.

These two modes of analysis suggest that, to the degree that US households are undersaving for retirement, this undersaving is not focused among low earners. Steps to make retirement saving plans more readily accessible to low earners have merit, since currently many lack access to a retirement plan at work. Still, the demand for expanded access should be understood in context and the potential downsides borne in mind. By the age at which many households begin saving for retirement in earnest, most Americans are married. If both spouses are working, the chances that the *household* will have access to a workplace retirement plan are higher than those of either spouse alone. Internal Revenue Service (2018) data show that approximately 80 percent of married households have at least one spouse actively participating in an employer-sponsored retirement plan. If we assume that 85 percent of couples offered a retirement plan have at least one spouse that participates, this implies that 94 percent of married households have access to a retirement plan at work.

Moreover, Chen and Lerman (2004) show that boosting in savings by low-income working-age households can trigger punitive reductions in means-tested transfer benefits. For a married couple with two children, increasing the household's liquid assets from below \$1,000 to between \$1,000 and \$2,000 would reduce annual benefits from means-tested transfer programs by almost \$3,000. As that household's assets rise and cross the \$2,000 threshold, it would lose an additional \$5,600 in annual transfer benefits for a 47 percent reduction.

This implies that hasty efforts to expand retirement savings among low-income households may be counterproductive. Given that it does not appear that low-earners need to save substantially more in order to maintain their pre-retirement standards of living once they cease working, promoting such savings through either a hard or soft mandate might cause unnecessary hardship to working-age households. For instance, Beshears et al. (2017) find that federal employees with less than a high school education who were automatically enrolled in a defined contribution retirement plan increased borrowing for mortgage, auto, and revolving credit loans by substantially more than the amount by which their retirement plan contributions

How Much Should the Poor Save for Retirement? 181

increased. This could be caused, in part, by low-income households attempting to maintain their standards of living in light of reduced take-home pay. Given that replacement rates for low-income retirees are high and poverty rates are lower for retirees than for working-age households, it is not clear that most low-wage workers should be saving more.

Despite the substantial attention devoted to both retirement savings and poverty in recent years, better quality data and additional analytical work are necessary. Researchers and policymakers need a better grasp of the savings and retirement incomes of low-earning households today, and they also must devote additional attention to optimal savings levels for households that optimally may depend upon government transfers for a great deal of their income in retirement.

Notes

1. While the SCF may understate retiree incomes similarly to other household surveys, we assume that the understatement has at the least not improved over time.
2. SSA OACT limits its analysis to individuals who are fully insured, meaning that they have at least 40 quarters of covered earnings and are thus likely to receive benefits at retirement. Unless noted, references to individual data and characteristics cite the fully-insured individuals analyzed by SSA OACT, not the overall population of Social Security participants.
3. Here we assume that workers do not have access to a traditional defined benefit pension.
4. Myers also calculated ‘net replacement rates’ under current law for workers of various earnings levels retiring at 65 in 1990, taking into account federal and state taxes and working expenses. He found that for the lowest earners, social security took care ‘of the full economic needs of very low earners reasonably well,’ while for middle wage earners, social security benefits were a substantial but not complete source of retirement income (Myers 1993: 211).
5. See US Department of the Treasury (2019).

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182 Remaking Retirement

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How Much Should the Poor Save for Retirement? 183

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