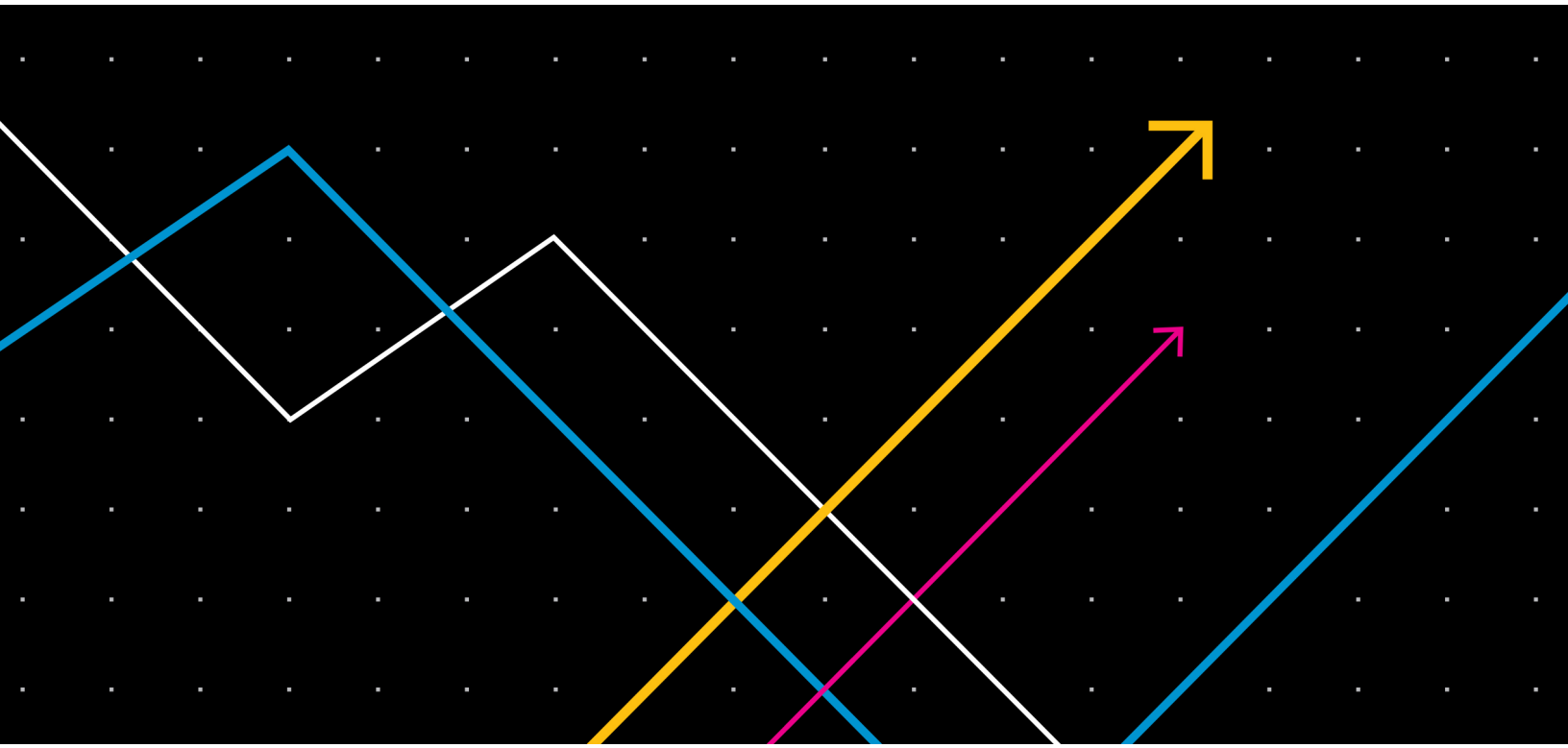

RESEARCH REPORT

# Preparing for Retirement Reforms

## Potential Consequences for Saving, Work, and Retirement Plans

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# Contents

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# Executive Summary

**Each of the three pillars of the US retirement system—Social Security, employer pensions, and private savings—suffers from serious problems that could threaten the financial security of future retirees. Social Security is at risk of becoming insolvent. If policymakers fail to act, Social Security benefits will be cut by about 25 percent starting in 2035, and even with reform, some combination of a slowdown in benefit growth for retirees and higher taxes on workers likely will occur.**

As policymakers are forced to tackle significant changes to Social Security costs and revenues for the first time since 1983, they could seize the opportunity to bolster the broader retirement income system. Structural reforms to this system could include strengthening work incentives, bolstering private retirement saving, and ensuring better financial security for low-income seniors and disabled individuals.

This study first quantifies the share of Social Security beneficiaries, both aged and disabled, as well as elderly persons eligible for Supplemental Security Income (SSI), who are deemed to have inadequate retirement income. While we quantify that level of inadequacy under current law, with its scheduled, cliff-like, across-the-board cuts in Social Security benefits, we believed it more relevant for most purposes to measure the level of inadequacy likely to remain under a more realistic scenario. For that purpose, we chose the Social Security component of a reform proposal adopted by the Bipartisan Policy Center's (BPC's) Commission on Retirement Security and Personal Savings. The BPC proposal aimed to achieve solvency roughly half through benefit cuts and half through tax increases. While this proposal substantially improves retirement security compared with current law, by many measures it still leaves many Social Security beneficiaries with inadequate retirement income.

We start with a traditional measure of adequacy equal to a 75 percent replacement of preretirement income. We hold this constant relative to average wages throughout retirement to allow for the effect of new goods and services, including health care, on what might be adequate, say, at age 65 versus 85. We then supplement that measure in two ways. First, we include a minimum absolute standard of adequacy equal to 25 percent of the average wage in the economy, not far from the official poverty measure for a single person in 2020. Second, individuals achieving incomes higher than the average earnings of workers ($54,000 in 2019) are assumed to have achieved adequacy regardless of their replacement rate.

In addition to getting a handle on the size and composition of those with inadequate retirement income under current law and a sustainable Social Security system, we next attempt to quantify the extent to which adequacy gaps can be reduced through additional work and additional saving. We further examine how a well-targeted Social Security minimum benefit reform could improve retirement income adequacy for those with income near or below the federal poverty level in retirement.

Using the Urban Institute's Dynamic Simulation of Income (DYNASIM) microsimulation model, we project that under current law, the share of Social Security beneficiaries with inadequate income will increase from 26 percent in 2020 to 45 percent by 2090, including a sharp increase after 2034 when, absent Congressional action, Social Security can cover only about four-fifths of scheduled benefits. While the BPC proposal avoids that level of benefit cut, it still leaves 39 percent of beneficiaries falling short of this standard by 2090.

Working longer by one year, by two years, or in line with increases in life expectancy would reduce the share of Social Security beneficiaries unable to replace 75 percent of their preretirement earnings by 2 to 5 percentage points. Working longer generates more earnings, allows workers to save more, and reduces the number of years that any accumulated savings need to fund. Workers who also delay claiming Social Security receive permanently higher future benefits. Still, unless working longer is paired with delayed Social Security claiming, or, unless the government uses the extra revenues to fund other retirement supports, working longer generates only modest increases in retirement income because added late-career savings have little time to grow. That is, only a portion of those gains directly increase incomes in retirement rather than consumption before retirement. A person with a 50 percent replacement rate, for example, might increase that number to 54 percent with an extra year of work but still fall short of the target replacement rate.

An immediate but permanent increase in the saving rate initially has a smaller impact on retirement income adequacy than an immediate but permanent increase in years of work, but in later years, saving more has a bigger impact on retirement income adequacy. By 2065, more saving reduces the share of Social Security beneficiaries unable to replace 75 percent of preretirement earnings by 5 to 13 percentage points. The higher the saving rate, the greater the share of beneficiaries achieving adequate retirement income.

Low earners and people with few work years gain only modestly from both working longer and saving more. Adding minimum benefits to Social Security and SSI substantially improves retirement income adequacy for these vulnerable groups.

Changes in the share of the population reaching adequacy, however, do not account for the extent to which the gap between adequacy and current income is closed. We define the income gap for an individual as the additional annual income needed to close the gap, and we define the savings gap as the additional savings needed to generate enough annual income to close the income gap throughout retirement. The average projected income gap among those Social Security beneficiaries with income below our adequacy standard in 2065 is $13,330 in 2018 price-adjusted dollars. To fill this gap, vulnerable workers would need to save about $272,700 more on average to close their income gap for 20 to 25 years of expected retirement. The savings gap is higher for high lifetime earners than for low lifetime earners because high lifetime earners have a higher absolute income standard and Social Security replaces a lower share of their preretirement earnings. Among top-quintile lifetime earners, one more year of work could close 25 percent of the savings gap, while saving 10 percent of earnings more could close 60 percent of the savings gap. For bottom-quintile lifetime earners, one more year of work could close 9 percent of the savings gap, while saving 10 percent of earnings more could close 19 percent of the gap.

Part of what drives these results is that many people who end up poor in retirement work relatively few years because of poor health or caregiving responsibilities. We project that adding a minimum benefit equal to the 2025 single-person poverty income level indexed by wage growth to Social Security and SSI would close 41 percent of the savings gap among bottom-quintile lifetime earners and 25 percent of the gap for second-quintile lifetime earners in 2065.

Suppose that government was able to enact a "feasible reform" that included the minimum benefit assumed here, successfully encouraged most nondisabled individuals to increase their years of work by the same amount as their increase in longevity, and introduced an additional 5 percent contribution to retirement saving (escalating to 10 percent over time) but for which an individual could opt out. We found that under such a scenario the savings gap on average would be closed by over 40 percent for most disability beneficiaries and for people age 62 and older by the year 2065.

That percentage tends to understate the degree of potential success in improving the lives of all Americans. First, recall that we now measure the share of the gap closed relative to BPC proposal, which had already reduced the gap relative to current law. Second, working more and saving more both can make substantial contributions to overall government finances. Those additional funds could then

support spending on the elderly and other important needs. Finally, the 75 percent income replacement standard, maintained relative to average wages in the economy over time, sets a high bar. The worker who works one more year and increases a replacement rate from 50 to 54 percent may only close 4/25 (16 percent) of the gap but replaces 40 percent of the gap using a 60 percent replacement rate standard. Put another way, the first dollars of gap replacement are the most important for attaining a comfortable lifestyle.

# Preparing for Retirement Reforms

As baby boomers increasingly transition from work to retirement, the number of Social Security and Medicare beneficiaries will rise rapidly relative to the number of taxpayers supporting their benefits. Trust funds built up over the past four decades, when tax revenues from the large generation of baby boomer workers exceeded benefit payments, can cover the shortfall for about a decade and a half, but annual spending is already increasingly exceeding annual revenues, and the Social Security trustees' project that Social Security trust funds will be depleted in 2034.[1] When that happens, the program will be able to cover only about four-fifths of scheduled benefits. To deal with these shortfalls, reform proposals to date have suggested either tax increases, a paring of the benefit growth for future elderly beneficiaries, or a combination of both. Meanwhile, the majority of people already retire with no or very modest amounts of private retirement income to supplement their Social Security. A third of older workers have no retirement savings, and the median retirement account balance in 2014 of workers approaching retirement was just $15,000 (Ghilarducci, Papadopoulos, and Webb 2017).

Social Security has achieved remarkable success in improving the well-being of the elderly. Poverty rates among adults age 65 and older have fallen from 35 percent in 1959 to 8.9 percent in 2019 (DeNavas-Walt, Proctor, and Smith 2007; US Census Bureau 2020). At the same time, significant gaps in the ability of many elderly to sustain their standard of living already exist and will likely remain without changes in our public and private retirement systems. Cosic et al. (2019) project that the share of 70-year-olds unable to replace 75 percent of preretirement earnings will increase from 26 percent for pre-boomer cohorts (defined as people born from 1936 to 1945) to 30 percent of Gen Xers (those born from 1966 to 1975), and if benefits are reduced to match available tax revenues once the trust funds are depleted, the percent of Gen Xers unable to replace 75 percent would increase to 38 percent. Butrica, Smith, and Iams (2012) find that compared with pre-boomers, median wage-adjusted career replacement rates fall for Gen Xers in all lifetime earnings quintiles, and all education and race groups. Declining replacement rates largely reflect a reduction in Social Security replacement rates due to the scheduled increase in the full retirement age (equivalent to a 13.3 percent benefit cut for a Gen X worker retiring at age 65 compared with a 65-year-old retiring in 2000), but also increased taxation of benefits, rising Medicare premiums, and demographic changes (Ghilarducci et al. 2018).

A recent Congressional Budget Office (CBO 2020) study finds that a person living in an elderly household is less likely than a person living in a nonelderly household to be in the poorest two quintiles (bottom 40 percent) of the income distribution. This success probably places some limit on the extent to which future solvency-related Social Security reform proposals can rely only on tax increases on the

nonelderly to achieve solvency, so some slowdown in the rate of lifetime benefit increase for future retirees is likely to be part of any reform.

What is the size of the adequate retirement living standard gap and for whom? And what can be done to reduce the gap? This study provides a new way to measure the adequate retirement income gaps based on two commonly perceived notions of what adequacy means in terms of both replacement of past earnings and maintenance of income above the federal poverty level. It then assesses the extent to which these gaps could be reduced by broad changes in individual choices like how much to save or when to retire. It also assesses how a well-targeted Social Security reform could improve retirement living standards. Our analysis quantifies the size of the gap and how much and for whom changes in personal behavior and policy reforms could close the gaps.

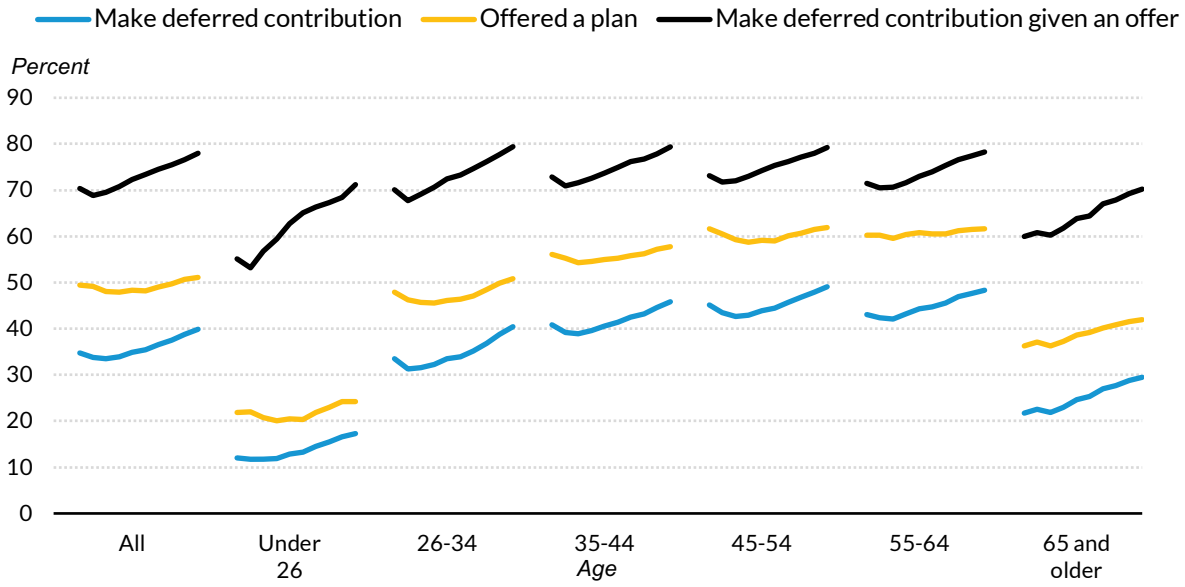
The remainder of this report is organized as follows. We first offer some background on current pension and retirement savings trends to put in context the extent and amount saving reforms could improve retirement savings. Next, we provide some background for measuring replacement rates to provide some context for our modified replacement rate measure. We then present our methods, provide more details about our microsimulation model, and describe our analysis measures. We then provide more information on the set of work more, save more, and minimum benefit reforms we simulated. We then present our results followed by our conclusions.

# Background

Employer-sponsored defined-benefit (DB) pension plans, which guarantee retirees a lifetime stream of cash benefits, have largely been supplanted by defined-contribution (DC) retirement plans, such as 401(k) accounts. Among private sector pension plans, the share of active DB plan participants has declined from 71 percent in 1975 to 14 percent in 2018, while the DC share has increased from 29 percent to 86 percent over the same period (Department of Labor 2021). In 2020, 15 percent of civilian workers had access to both a DB and DC pension (Department of Labor 2020). While DC plans have become the dominant pension type, only about half of taxpayers with wage income are offered a DC plan (figure 1). Between 2008 and 2017, participation rates increased but never exceeded 50 percent, even for workers ages 55 to 64 (who are nearing retirement). Partly due to the rising prevalence of automatic enrollment and the improved post–Great Recession economy, participation rates among wage earners offered a DC plan rose from 2009 to 2017. Still, only 78 percent of wage earners who were offered a DC pension plan in 2017 contributed to one.

FIGURE 1

**Percentage of Taxpayers with Wage Income Who Were Offered a DC Plan, Who Make Deferred Contributions, and Make Deferred Contributions Given an Offer by Age for 2008 to 2017**

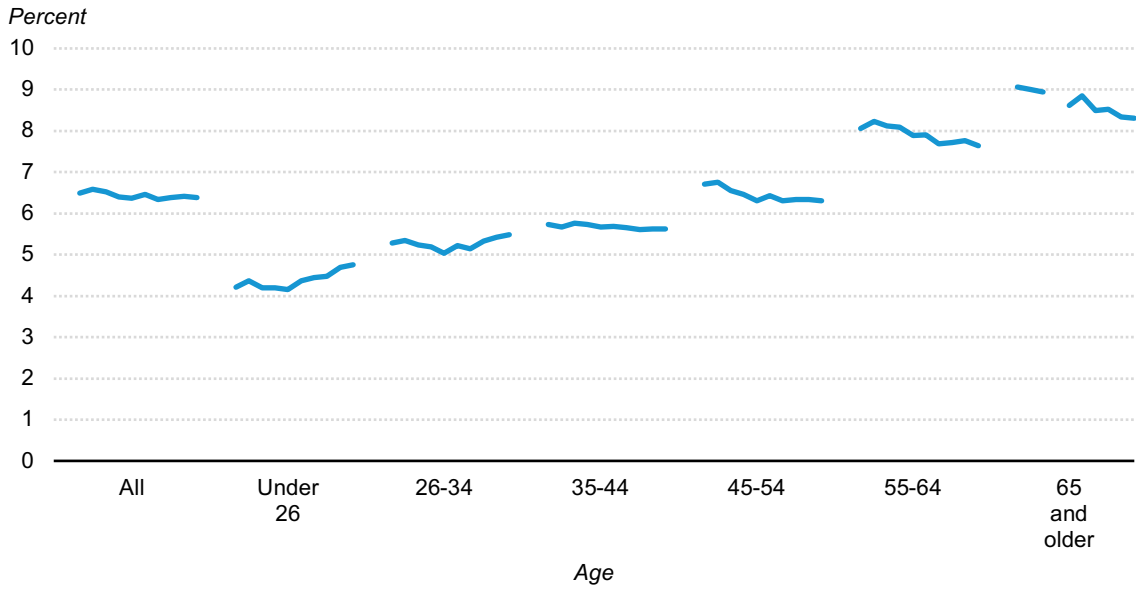



**Source**: Authors' calculations from Internal Revenue Service W2 tax statistics (Internal Revenue Service 2020).
**Notes:** Lines show values for 2008 to 2017 for each age group and statistic.

Among wage earners making deferred retirement contributions, workers contribute about 6.5 percent of their gross earnings (figure 2). Average contribution rates are lower at younger ages (4 to 5 percent) and higher at older ages (7.5 to 8.1 percent), but the average annual worker contribution in 2017 was just over $5,000. In 2020, employee contributions to DC plans are capped at $19,500 plus $6,500 for workers age 50 and older, and individual retirement account (IRA) contributions are capped at $6,000 plus $1,000 for workers age 50 and older. Because of the contribution limits, average contributions as a share of earnings fall for higher earners. Still, in 2017, only 8 percent of all contributors made maximum contributions, and only 71 percent of contributors with adjusted gross income over $1 million made maximum contributions (Internal Revenue Service 2020).

FIGURE 2

**Average Elective Contributions as a Percent of Medicare Wages among Taxpayers with Elective Retirement Contributions by Age, 2008-2017**




**Source**: Authors' calculations from Internal Revenue Service W2 tax statistics (Internal Revenue Service 2020).
**Notes:** Lines show values for 2008 to 2017 for each age group.

# Replacement Rate and Poverty Gaps

For decades, Social Security has been designed to provide about a 40 percent replacement rate at the full retirement age (65 for most years, but now 67 for retirees born after 1959) for an average-income worker and a higher level for those with below-average income (Social Security Administration 2004). "Average income" in Social Security's traditional calculation has been defined as a worker earning average wages every year, reaching a peak level of real earnings by age 62 as real wages increase in the wider economy. That simple calculation yields a higher replacement rate than 40 percent under more real-world earnings patterns that include years out of the workforce (the average wage for those working does not equal the average wage for all lifetime workers, including those temporarily out of the workforce for some years) and earning reductions in years nearer to retirement (Steuerle, Spiro, and Carasso 2000; Clingman and Burkhalter 2020). For example, 14 percent of newly entitled retired worker beneficiaries in 2008 (prior to the financial crisis) had no earnings in the five years prior to claiming benefits and 46 percent had lower average wage-indexed earnings in the five years before benefit claiming than their career average wage-indexed earnings (Goss et al. 2014). Spousal benefits also raise replacement rates for many households: In the extreme case, where only one spouse works,

replacement rates average 60 percent for someone at the Social Security measure of average wage, while a single worker with the same earnings gets a worker-only replacement of 40 percent.

Importantly, the Social Security method of calculating replacement fails to account for the decline in relative incomes as people age in retirement. That is, a retiree's Social Security benefit is only indexed for price growth, and therefore it declines relative to average wages in the economy over his or her retirement years. If set at 40 percent of some average wage in the economy at age 67, for instance, that retiree's benefit would fall to about 34 percent of the average wage at age 82 if real wages for workers are increasing on average at 1 percent per year. Also, the majority of people currently retire before the full retirement age and collect a reduced benefit (Social Security Administration 2019: table 6.B5). These factors lead to a lower Social Security replacement rate in older ages.

A common rule of thumb for retirement income adequacy is for retirees to replace 75 percent of preretirement earnings.[2] The rate is less than 100 percent because after retirement, people no longer pay payroll taxes or need to save for retirement. Expenses also usually go down after children have left home. Investment specialist Christine Benz, however, suggests that 75 percent replacement rate is too low for lower-income workers who save less and pay lower taxes while working because they don't realize those same spending reductions in retirement (Benz 2012).

There is no consensus on the earnings measure to include in the replacement rate denominator (Biggs and Springstead 2008; Butrica, Smith, and Iams 2012; Johnson, Smith, and Cosic 2016). Some researchers use recent earnings, some use lifetime earnings, and some use career-high earnings. MacDonald, Osberg, and Moore (2016) show the replacement rate measure is a poor predictor of retirement income adequacy when based on a single year of preretirement earnings, and they advocate averaging preretirement earnings over a longer period. There is also no consensus on how to index historic earnings. Social Security wage-adjusts lifetime earnings when setting the replacement rate, but many people may be happy to retain their preretirement standard of living, which is typically measured by price indexing. Price-adjusting earnings will generate a lower replacement rate denominator than wage-adjusting earnings, and recent earnings will typically generally generate a higher denominator than average career earnings.

# Methodology and Data

This study uses the Urban Institute's Dynamic Simulation of Income Model Version 4 (DYNASIM). DYNASIM is the most sophisticated microsimulation model for retirement behavior available outside of

government. It has been used to assess the impact of recent Social Security reform proposals, such as those of Republican and Democratic chairs of the Ways and Means Subcommittee on Social Security (Johnson and Smith 2020), five of the 2020 Democratic presidential candidates (Smith, Johnson, and Favreault 2020), a Bipartisan Policy Center (BPC) commission (Bipartisan Policy Center 2016), and the National Commission on Fiscal Responsibility and Reform (Favreault and Karamcheva 2011). DYNASIM has been extensively validated (Smith et al. 2018) and produces long-term projections that are consistent with the 2020 Social Security Trustees projections adjusted for the COVID-19 pandemic (Board of Trustees 2020; Goss and Glenn 2020).

DYNASIM starts with a representative sample of the US population in 2006 and ages them year by year, simulating key demographic, economic, and health events. The model projects that, each year, some people in the sample get married, have a child, or find a job, and other people become divorced or widowed, stop working, begin collecting Social Security, become disabled, or die. These transitions are based on probabilities generated by carefully calibrated equations estimated from nationally representative household survey data. The equations account for important differences by sex, education, earnings, and other characteristics in the likelihood of various experiences. Other equations in DYNASIM project annual earnings, savings, and home values. The model uses program rules—combined with projections of lifetime earnings, disability status, and household income and wealth—to project Social Security retirement and disability benefits and Medicaid coverage. For consistency with Social Security's projections about system's finances, we generally follow the Social Security and Medicare trustees' assumptions.

## Adequacy Standard

Absent consensus on replacement rate measures, we believe that most people nearing retirement would consider themselves as having adequate retirement income if their postretirement income can replace at least 75 percent of recent preretirement earnings based on the average price-adjusted earnings from ages 50 to 59 (couples split income and earnings in years they are married).

Our measure of retirement income is the sum of Social Security, SSI, DB pension income, earnings, income from partnerships and limited liability companies, investment income (interest, dividends, rental income, capital gains), and other cash benefits. Our measure of taxes includes federal and state income taxes, Social Security and Medicare payroll taxes (including the 3.8 percent net investment income surtax and the 0.9 percent additional Medicare tax imposed on some high-income taxpayers), and income-related premiums for Medicare Parts B and D in excess of the base premiums. All incomes and

taxes are calculated in 2018 price-adjusted dollars and measured on a per capita basis by dividing total family amounts by two for married people in years when married.

When defining the income for our adequacy measure, we replace annual investment income with the fair market annuity income that could be purchased with 80 percent of financial and retirement account assets, plus imputed rental income based on a 2.3 percent real rate of return on home equity among homeowners.[3] The annuity measure allows us to compare the well-being of individuals with annuitized assets such as DB pensions with the well-being of individuals with nonannuitized assets such as DC pensions. We include only 80 percent of the assets in the annuity measure to account for the risk of outliving one's assets if one is consuming from nonannuitized wealth.

We make two modifications to the standard replacement rate calculation. First, people with very low preretirement earnings can have very high retirement income replacement rates (infinite for people with zero earnings) while still having retirement income below the federal poverty level. We define adult Social Security beneficiaries as having inadequate income in a given year if their retirement income is below 25 percent of the average wage of workers in the same year ($13,439 in 2019), even if their replacement rate is above 75 percent. Second, people with very high preretirement earnings can have a low postretirement replacement rate despite having relatively high postretirement income. We define adult Social Security beneficiaries as having adequate retirement income if their retirement income exceeds the average wage index (AWI) ($53,756 in 2019).[4] The average wage index grows with real wage growth (projected to increase 1.1 percent per year on average faster than inflation), so our adequacy measure requires retirement income to keep pace with real wage growth. Our retirement income standard is as follows:

$$I = \min(\max(0.75*E, 0.25*AWI), AWI)$$

where I is the income standard, E is the average price-adjusted shared earnings from age 50 to 59 (prior 10 years if measured before age 59). AWI is the economy-wide annual average earnings in each year of benefit receipt for each person. Annual earnings and AWI are in 2018 price-adjusted dollars.

## Retirement Savings Gap

For Social Security beneficiaries with retirement income below the standard, we define the income gap as the amount their income is below the standard as follows:

$$G = \max(0, I-Y)$$

where G is the income gap, I is the income standard, and Y is current per capita income using annuitized assets.

We define the savings gap as the additional savings that would generate enough income to close the income gap based on the following formula:

$$PV = G \sum_{a=A}^{120} \frac{S(a|a \geq A)(1+\pi)^{a-A}}{(1+i)^{a-A}}$$

where PV is current present value; G is the income gap; A is current age; $S(a|a \geq A)$ is the unisex survival function at age a conditional on surviving to age A; π is the rate of increase in the cost of living; and $i$ is the nominal interest rate.[5]

The appendix provides information on how DYNASIM models retirement account participation, contributions, and investment behavior. For more information on methods and behavioral assumptions see Smith, Johnson, and Favreault (2020). For more information about DYNASIM, see Favreault, Smith, and Johnson (2015).

Although Social Security maintains two trust funds—one for Old-Age and Survivors Insurance and one for Disability Insurance—we follow the common practice of combining these trust funds in our projections. For each of our simulations we report trust fund ratios from 2005 to 2095. The trust fund ratio is defined as the combined Social Security trust fund reserves expressed as a percentage of annual program cost. The program is considered solvent when the trust fund ratio remains positive throughout the 75-year projection period.

Additionally, our analysis examines how each proposal would change federal revenues and expenditures. Our revenue measure includes changes in receipts from the federal individual income tax, Social Security and Medicare payroll tax (including the 3.8 percent net investment income surtax and the 0.9 percent additional Medicare tax imposed on some high-income taxpayers), and income-related premiums for Medicare Parts B and D.

Much of our analysis focuses on how each of the proposals would affect the net incomes of people age 62 and older and adult Social Security disability beneficiaries. We show different outcomes based on demographic and income characteristics. We show both changes in per capita net income shown in 2018 price-adjusted dollars and percentage changes for selected options.

We report the share of aged and disabled full-year Social Security beneficiaries projected to have family income below wage-adjusted poverty level. The poverty thresholds are normally increased

annually by the change in the consumer price index. For our wage-adjusted poverty measure, we increase 2025 poverty thresholds by annual wage growth. This adjustment provides a family poverty standard that keeps pace with growth in the economy and includes adjustments based on family size.

We report the share of full-year adult Social Security beneficiaries with family income below our adequacy income standard. We also show the distribution of the savings gap (the amount of additional savings a person needs to have adequate retirement income). We often focus on results in 2065, when most of the reforms will be fully phased in. Lastly, we report the average income gap and savings gap for aged and disabled people in 2065 by selected characteristics and show how much the gaps change for each of our simulations.

## The Extent of the Gaps under Alternative Scenarios

We estimate the gaps in retirement income under different policy scenarios for years from 2015 to 2095. We start with current-law scheduled and current-law payable benefits. Scheduled benefits are based on Social Security benefits using current benefit rules without regard to the trust funds' ability to fund benefits. Payable benefits are based on payments that Social Security could afford to make under existing tax rates and benefit rules, with benefits reduced (20 to 26 percent) to match available tax revenues once the trust funds are depleted in 2035.

Neither scenario, however, provides a realistic assessment of what retirement income gaps likely will remain in the future. No one expects Congress to force beneficiaries to take a cut from amounts "payable" and on which they would have become dependent. For scheduled benefits to remain, one would have to assume only tax increases, either through payroll taxes or through general revenues such as the income tax, which would largely be paid by younger age groups. Any resort to borrowing from general revenues also implies a net tax increase on future taxpayers.

Accordingly, we needed a third scenario to demonstrate the likely size of the various gaps in the future. We used the Social Security proposal of the Commission on Retirement Policy and Personal Saving, brought together by the BPC, as this third scenario (hereafter, the "BPC proposal").[6] Box 1 describes the provisions of the BPC proposal with phase-in dates adjusted for the delay start date. We do not ascribe to all of the provisions of that proposal, but it provides a more realistic baseline under a reform proposal that attains long-term Social Security solvency. The BPC commission aimed to achieve solvency roughly half through benefit cuts and half through tax increases (Goss 2016).[7] The BPC proposal relied heavily on tax increases in the initial years, as benefit reductions only gradually phase in.

Delaying the timing of tax increases (originally proposed to begin in 2018) and lower projected real wage growth means that a higher share of BPC solvency if implemented in 2021 is now achieved through benefit cuts (70 percent) than through tax increases (30 percent), though the benefit changes, because they compound, eventually become more dominant than the tax increases.

BOX 1

**Summary of Provisions in the BPC Proposal Adjusted for Delayed Start Date**

- Use an annualized mini–Primary Insurance Amount (PIA) formula beginning with retired worker beneficiaries becoming newly eligible in 2023, phased in over 5 years. The mini-PIA calculation would compute an individual average monthly indexed earnings (AIME) and PIA for each year with taxable earnings.
- Replace the current-law Windfall Elimination Provision and Government Pension Offset for most Old-Age and Survivors Insurance benefits with a new calculation based on covered and non-covered earnings, beginning with individuals newly eligible in 2023.
- Limit the spousal benefit paid on the account of a retired worker newly eligible in 2023 to the benefit received by the spouse of a newly eligible retired worker with AIME at the 75th percentile.
- Compute retired worker and spouse benefits for those married when first starting benefits in 2023 or later using a specified joint-and-survivor annuity approach.
- Beginning with retired worker beneficiaries newly eligible in 2023, add a new PIA bend point at the wage-indexed equivalent of the 50th percentile of the AIME distribution for retired workers newly eligible in 2015, minus $100. In addition, change the present-law first PIA bend point on a wage-indexed equivalent basis from $826 to $1,050 for 2015 and apply more progressive PIA factors.
- Increase the Social Security taxable maximum to 203,700 for 2021, and index by growth in the AWI plus 0.5 percentage point annually thereafter. Additional taxed earnings are includable for AIME computations.
- Increase the total Social Security payroll tax rate by 0.1 percentage point per year for 2023 through 2032, increasing the total rate from 12.4 percent for 2022 to 13.4 percent for 2032 and later.
- After the normal retirement age reaches age 67 for those attaining age 62 in 2022, increase it by one month every two years until the normal retirement age reaches 69 for those attaining age 62 in 2070. Also, increase the age up to which delayed retirement credits may be earned from 70 to 72 on the same schedule.
- Use the chain-weighted version of the Consumer Price Index for All Urban Consumers to calculate the cost-of-living adjustment (COLA), beginning with the December 2023 COLA.

- Beginning in 2023, extend student benefits to age 22 for children of disabled or deceased workers, if the child is a full-time student in high school or below, college, or vocational school.
- Beginning in 2023, for single, head-of-household, or married-filing-separate taxpayers with modified adjusted gross income of $250,000 or more and for joint filers with modified adjusted gross income of $500,000 or more, include up to 100 percent of Social Security benefits (up from 85 percent) in income subject to federal personal income tax. All additional revenue would be credited to the Old-Age and Survivors Insurance and Disability Insurance trust funds.
- Beginning in 2023, create a new Social Security Basic Minimum Benefit. This new minimum benefit would be available only after attaining the normal retirement age and would be set at different levels for single persons and married couples. Individuals with adjusted gross income above specified thresholds would have the Basic Minimum Benefit reduced or completely eliminated.

## What Happens if People Save More and Work Longer?

Changing Social Security taxes and benefits is not the only way that society can address the needs of a population when soon close to one-third of adults will be receiving Social Security benefits for about one-third of their adult lives (close to two decades for the average person and three decades for the longer-living spouse of a couple). Both saving more and working longer could also help alleviate retirement income gaps in the future.

Here we try to determine just how much of a difference increases in saving and work might mean for covering replacement income gaps. We also explore how much adding well-targeted Social Security and SSI reforms could close replacement income gaps.

### WORKING LONGER

We simulate the impact of working longer on retirement incomes and government budgets. We examined three work-longer scenarios: work one more year, work two more years, and increase work years in tandem with increases in life expectancy at age 65 compared with people born in 1956 (age 65 in 2021). The third option would add one year of work for men born from 1973 to 1987, two additional work years for men born from 1988 to 2006, three additional work years for men born from 2007 to 2026, and four additional work years for men born from 2027 to 2049. The life expectancy gains and thus work years are slightly greater for men than for women.[8]

We implement the first two scenarios by shifting simulated work and earnings to the right for each nondisabled worker starting in 2022 or the year the worker attains age 50. For instance, in the "work

one more year" scenario, wage-indexed earnings at age 50 are repeated at age 51, earnings at age 51 now occur at age 52, and so forth until the end of life. In addition to working longer, we also have workers delay claiming Social Security by the same number of additional work years as long as their earnings in the year are above the retirement-earnings-test exempt amount ($18,240 in 2020 indexed annually by wage growth) and the claiming age is before age 70. This method preserves the work patterns at older ages as people transition from work to partial retirement to full retirement. Working longer is then paired with delayed Social Security claiming. Importantly, disabled workers, low earners, and people who stop working before age 62 do not delay claiming.

### SAVE MORE

We simulate the impact of saving more on retirement incomes and government budgets. We examined three "save more" scenarios: save 3 percent of earnings more than their baseline saving rate, save 5 percent more, and save 10 percent more. The baseline saving rate is the model-projected saving rate before the reform, reflecting recent saving behavior. It varies by worker and job characteristics and by individual taste for saving. We cap the additional savings at the worker's 401(k) contribution limits ($19,500 plus $6,500 for people age 50 and older in 2021 and indexed annually by price growth). We assume the additional contributions are tax deferred, they are invested in a tax-deferred account, and investments are taxable upon withdrawal. We do not let workers cash out or withdraw these additional savings until retirement. The additional saving is invested in a blend of stocks and bonds using the same investment strategy as in the baseline, which reduces the stock share at older ages and includes a lower stock share for more risk-averse investors. The appendix provides more information on DYNASIM's pension and retirement account methods.

We modeled the "save more" options both as an "add-on," where individuals save more in addition to their baseline saving rate, and as a "top-up," where individuals who save less than the 3 percent, 5 percent, or 10 percent target top-up their baseline savings to hit the target. People save more when modeled as an add-on, but results when modeled as a top-up are often similar. We present results primarily for the add-on provisions to keep the results tractable. We note the results from the top-up simulations when differences are significant.

### WELL-TARGETED PENSION, SOCIAL SECURITY, AND SSI REFORM

In our final set of simulations, we build on the "work more" and "save more" options but add the following more realistic assumptions to the BPC proposal.

- We assume workers will work more based on increases in life expectancy.

- We assume more realistically that not all workers will increase saving. We modified the save more option by only *offering* all previously uncovered workers access to a 401(k)-type retirement account with automatic enrollment and a 5 percent default contribution rate that automatically escalates to 10 percent (1 percent per year). Participation is thereby voluntary and includes no employer contributions. We assume that half of newly offered workers select the default contribution rate; the other half use DYNASIM's model-generated baseline participation and contribution assumptions, which allow workers to set their own contribution rate or to opt out. In this option, we also allow workers to cash out these additional savings. The appendix provides more detail on DYNASIM's estimated baseline behavioral models.
- We assume workers invest half of their bond allocation each year to an age-65-deferred annuity. Married couples split annual deferred annuity contributions. The deferred annuity is calculated using cohort-specific unisex survival probabilities and a 2.8 percent real discount rate. Annuity payments are payable at age 65 and are COLA adjusted annually by the change in the consumer price index. The deferred annuity provides a guaranteed inflation-adjusted income in retirement and longevity insurance compared with standard bond investments.
- We add a meaningful minimum benefit to Social Security and enhance SSI benefits based on six provisions described in table 1. These six poverty elimination provisions (PEPs) virtually eliminate wage-adjusted poverty for all aged and disabled Social Security beneficiaries (Steuerle and Smith 2021). We reduce scheduled BPC Social Security benefits 14 percent to help pay for the minimum benefit enhancements.

TABLE 1

**Description of Provisions to Eliminate Poverty among Social Security Beneficiaries**

| Step | Option | Description |
|---|---|---|
| 1 | Add Social Security minimum benefit | For all Social Security beneficiaries with 40 or more covered quarters, provide a wage-indexed poverty level minimum monthly benefit. The minimum benefit is equal to the 2018 FPL indexed annually by wage-growth. |
| 2 | Add caregiver credits | Allocate four covered quarters for each year that a parent cares for a child under age 16. This provision affects the calculated covered quarters but does not change annual earnings. The additional quarters help caregivers qualify for the minimum benefit. |
| 3 | Add minimum benefit for DI beneficiaries | Allow all DI worker beneficiaries to qualify for the minimum benefit regardless of the number of covered quarters. |
| 4 | Add auxiliary minimum benefit | Allow spouse and widow beneficiaries to qualify for the minimum benefit regardless of the number of covered quarters. |
| 5 | Add SSI enhancement at ages 62 and older | Provide a wage-indexed poverty-level SSI benefit for all DI beneficiaries and individuals at or above age 62. |
| 6 | Add child SSI minimum benefit | Provide a wage-indexed poverty-level SSI benefit for all DI beneficiaries and individuals at or above age 62 and their dependent children. |

**Notes:** DI = Disability Insurance. We assume all provisions are enacted in 2021. FPL = the federal poverty level for a single person.

We show results for these provisions including only the PEPs ("BPC with minimum benefit (payable)") and the PEPs combined with the "work more" and "save more" options ("feasible reform").

# Results

## Social Security Trust Fund Ratio

Figure 3 shows projected trust fund ratios for the current-law payable scenario and selected options from 2005 to 2095. Social Security is considered solvent if the trust fund ratio remains above zero over the 75-year horizon (through 2095). The left panel shows projected trust fund ratios for the current-law payable scenario, the BPC proposal, and three "work more" options. The middle panel shows values for the BPC proposal and three "save more" options, and the right panel shows values for the BPC proposal; BPC with enhanced minimum benefits; and BPC with enhanced minimum benefits, more work, more savings, and added deferred annuity investments labeled "feasible reform."

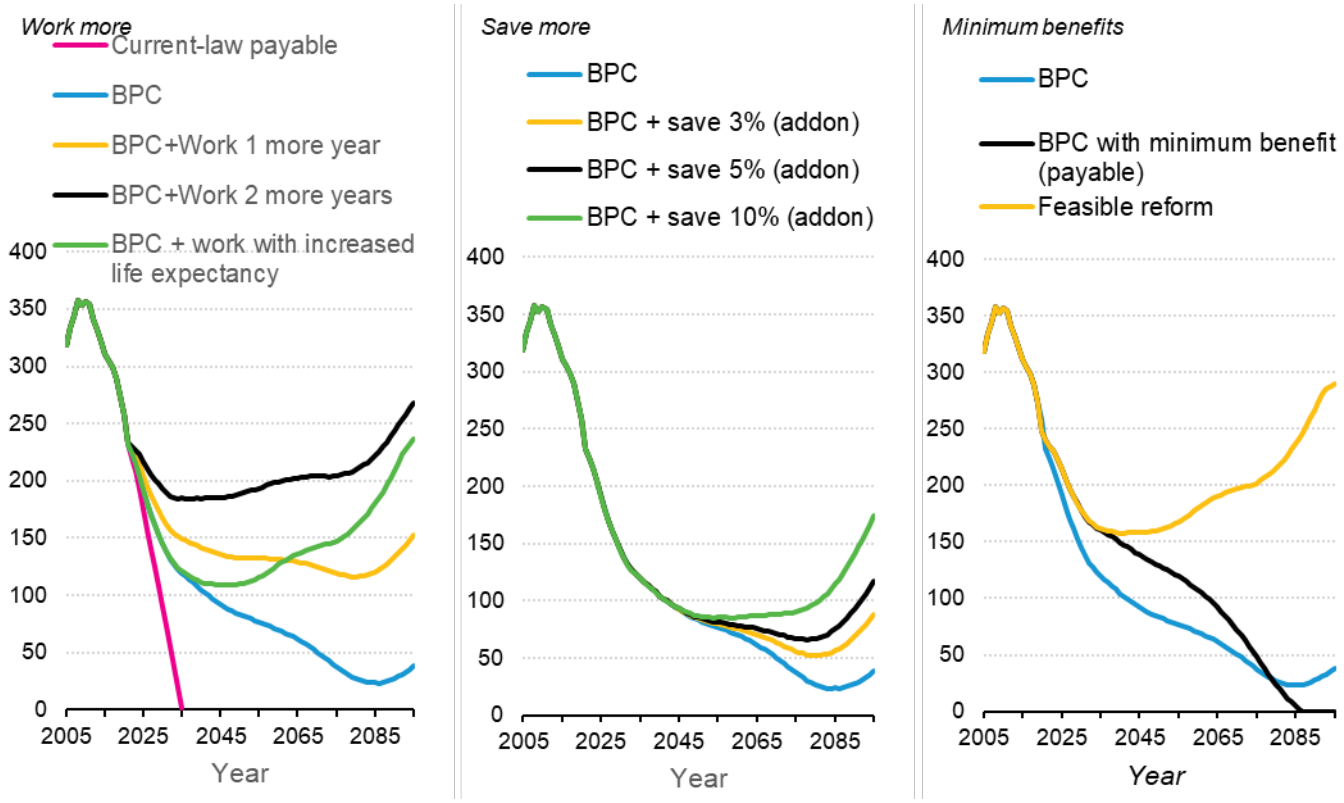
The trust fund ratio peaked in 2008 and is projected to decline each year until funds are exhausted in 2035 under current law. The BPC proposal includes both tax increases and benefit reductions and is solvent through the 75-year projection horizon.

BPC paired with additional work improves long-term solvency (left panel). When people work more, they pay more payroll taxes without substantially changing Social Security costs. While delayed claiming as modeled will increase annual benefits because of smaller actuarial reductions, beneficiaries also receive fewer years of benefits. Initially, revenue increases from the added payroll tax and benefits go down because of delayed claiming. By 2035, changes in revenue and costs stabilize, but the timing differences improve Social Security finances. Working two more years increases trust fund ratios more than working one more year.

FIGURE 3

**Projected Trust Fund Ratio, 2005-95**

*Percent*




**Source:** DYNASIM4 id981.

**Notes:** The trust fund ratio is defined as the asset reserves at the beginning of a year expressed as a percentage of the cost during the year. The left panel shows the trust fund ratio under the current-law payable scenario, BPC proposal, and three "work more" options. The middle panel shows values for the BPC proposal and three "save more" options, and the right panel shows values for the BPC proposal, the payable BPC proposal with the minimum benefit provisions, and the BPC proposal with additional work, savings, and minimum benefit provisions.

When work years increase with increases in life expectancy, early cohorts (those born before 1957) do not change work behavior. Accordingly, the added years of work only gradually increase trust fund ratios as more people in later cohorts work longer and delay claiming with later cohorts simulated to work up to four more years by the end of the 75-year projection period. Note that when it comes to working more, this "feasible reform" option is more realistic as to how a policy of this type would phase in over time.

Saving more modestly improves Social Security finances (middle panel). Savings does not affect payroll taxes or Social Security benefits. To the extent there is any modest change, added savings mainly affects the taxation of Social Security benefits because of an increase in beneficiaries' taxable income. The higher retirement income generated from the higher savings is projected to increase trust fund

ratios after 2045. Because the added saving happens when people are working, taxation of current beneficiaries is unchanged. As new savers age and claim benefits, their higher retirement incomes generate higher revenue from taxation of benefits. The higher the saving rate, the bigger the increase in trust fund ratios.

The payable BPC proposal paired with minimum benefits initially reduces benefits for middle- and high-income beneficiaries to keep total benefit spending roughly equal as we enhanced benefits for low-income beneficiaries. Because the minimum benefits increase with real wage growth and the BPC provisions reduce the rate of growth in benefits for later cohorts, eventually the minimum benefit provisions increase cost slightly more relative to BPC and the trust fund ratio declines slightly. This option was designed roughly to be trust fund–neutral relative to BPC over 75 years.[9] However, when the minimum benefit is paired with working more and saving more, even using the less generous work and saving provisions under the "feasible reform" simulation, Social Security finances improve significantly while eliminating poverty among older and disabled people.

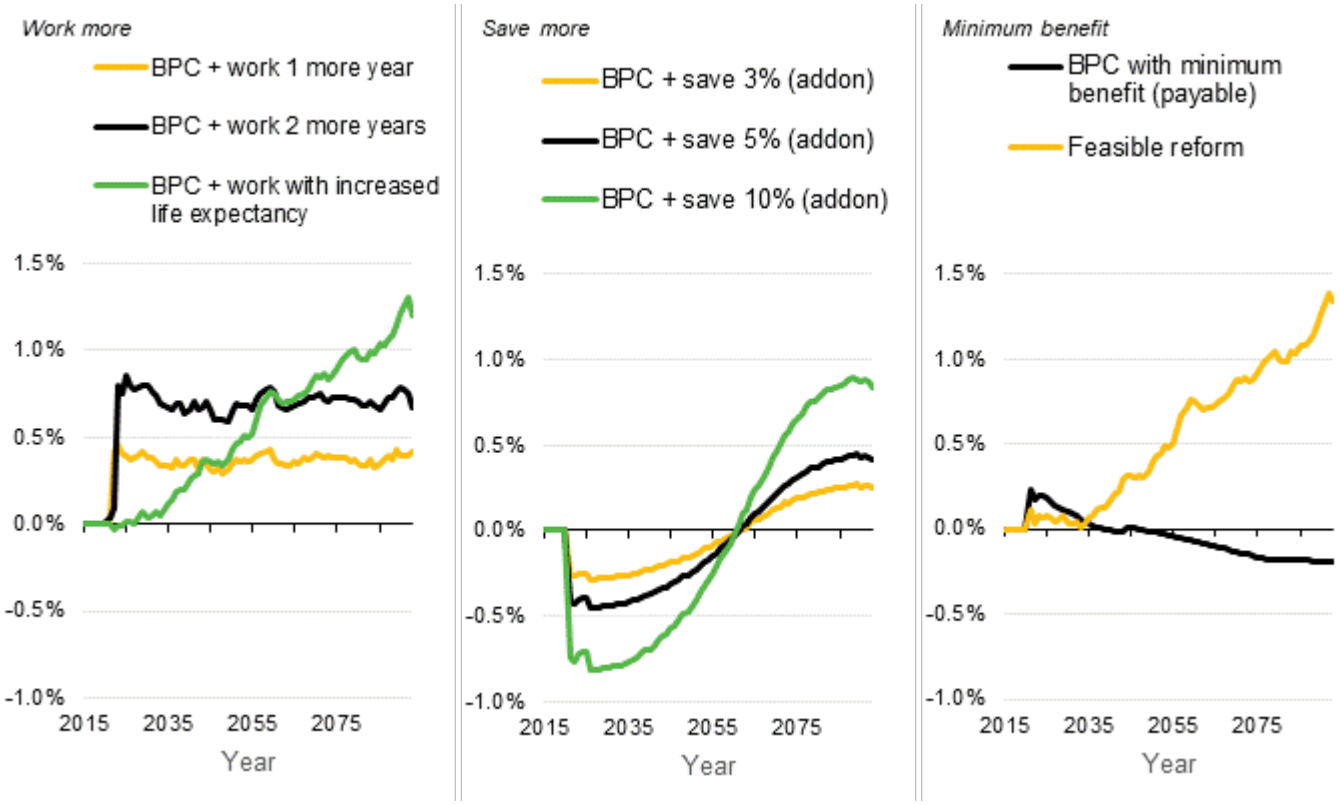
## Change in Federal Revenue and Expenditures

Figure 4 shows the change in federal revenue minus federal expenditure as a percentage of gross domestic product (GDP) compared with the BPC proposal for our work more, save more, and minimum benefit options. Working one more year increases the net federal budget compared with the BPC proposal in every year, but the percentage gain is bigger in the short run than in the long run because of the initial increases in income and payroll taxes from the added earnings and the initial reductions in Social Security benefits from the delayed claiming (left panel). As with trust fund balances, the relative timing of the tax increases and benefit reductions has a bigger earlier impact than in the long run once benefit claiming resumes.

Working two more years increases the net federal budget more than working one more year. The option that slowly adds additional work years with increases in life expectancy increases the projected net federal budget more slowly than an immediate two-year increase in work, but it eventually increases the net federal budget in later years as the increase in work years compounds toward four additional years.

FIGURE 4

**Change in Federal Revenue Minus Federal Expenditure as a Percentage of GDP by Year Compared with BPC**




**Source:** DYNASIM4 ID981.

**Notes:** Federal revenue includes changes in federal income tax, payroll tax, Medicare surtax, and income-related Medicare premiums. Expenditures include changes in Social Security benefits, SSI, and other cash benefits. The federal budget change also includes the change in interest on government debt. GDP is the gross domestic product under current law (Board of Trustees 2020, table VI.G6).

The pattern of the change in the net federal budget is substantially different in the "save more" options (middle panel) than the "work more" options. Retirement account contributions are tax deferred, allowing workers to reduce their federal income tax liability in years they make contributions. However, as workers with higher deferred savings retire and draw down their higher accumulated tax deferred savings, the net federal budget increases relative to BPC after 2060. The gains and losses in the net federal budget are larger the higher the added saving rate because tax deferrals are larger with higher saving rates and taxable withdrawals are larger with greater accumulated savings from higher saving rates.

Adding minimum benefits to the BPC proposal initially increases the net federal budget surplus because of an assumed across-the-board benefit reduction in Social Security benefits among middle-

and high-income beneficiaries needed to fund the long-term minimum benefit expansion. Over time, as the enhanced Social Security benefits increase, the change in the net government budget relative to BPC proposal becomes negative. Adding more saving and more work to the minimum benefit option ("feasible reform") increases the net federal budget after 2035 as savers begin to retire and withdraw higher accumulated savings and workers increasingly work longer.

## Net Retirement Income

Table 2 shows average projected net per capita income among people age 62 and older and adult disability beneficiaries for the current-law payable scenario and the BPC proposal in 2025, 2035, 2045, 2055, and 2065 by selected characteristics. Under the current-law payable scenario, average per capita net income is projected to rise from $44,280 in 2025 to $55,730 in 2065 in 2018 price-adjusted dollars. Average net per capita income is higher for people with more work years, with higher lifetime earnings, with more education, with a marital partner, and who are white than for people with fewer work years, with lower lifetime earnings, with less education, with no marital partner, and who are Black and Hispanic. Compared with the current-law payable scenario, the BPC proposal initially reduces net incomes among the higher-income groups as it constrains Social Security cost growth for high-income beneficiaries, but by increasing revenue it avoids the 20 to 25 percent benefit cuts after trust funds are exhausted in 2035. Under the BPC proposal, average net per capita income rises from $44,280 in 2025 to $58,230 by 2065, adding $2,500 (4.5 percent) per year relative to the current-law payable scenario. In 2065, the BPC proposal gives the highest gains compared with the current-law payable scenario to the disabled (14.4 percent), people age 85 and older (10.5 percent), widows and widowers (12.9 percent), and lowest-quintile lifetime earners (17 percent), but all groups have higher average net income.

TABLE 2

**Average Per Capita Net Income by Selected Characteristics and Option in Selected Years**

*People age 62 and older and adult disability beneficiaries (2018 price-adjusted dollars)*

| | Current-law payable | | | | | BPC proposal | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Year | | | | | Year | | | | |
| | 2025 | 2035 | 2045 | 2055 | 2065 | 2025 | 2035 | 2045 | 2055 | 2065 |
| **All** | 44,280 | 44,040 | 46,810 | 53,630 | 55,730 | 44,250 | 46,000 | 49,040 | 55,740 | 58,230 |
| **Age** | | | | | | | | | | |
| 0-35 | 28,050 | 28,790 | 30,320 | 33,110 | 35,560 | 28,170 | 31,750 | 34,380 | 37,530 | 40,840 |
| 36-45 | 29,500 | 28,990 | 33,490 | 33,440 | 37,370 | 29,710 | 32,140 | 37,720 | 38,040 | 43,310 |
| 46-55 | 30,050 | 29,360 | 31,190 | 35,730 | 37,670 | 30,240 | 32,370 | 35,370 | 40,180 | 43,200 |
| 56-67 | 37,840 | 33,150 | 36,630 | 45,320 | 44,220 | 37,900 | 35,770 | 40,290 | 49,390 | 49,030 |
| Never DI | 46,790 | 46,610 | 49,340 | 56,580 | 58,860 | 46,730 | 48,400 | 51,250 | 58,260 | 60,820 |
| **Age** | | | | | | | | | | |
| 0-61 | 31,590 | 32,270 | 34,290 | 36,790 | 41,370 | 31,750 | 35,420 | 38,710 | 41,580 | 47,330 |
| 62-69 | 48,170 | 51,160 | 57,800 | 69,210 | 70,860 | 47,980 | 51,610 | 58,480 | 69,580 | 71,020 |
| 70-74 | 47,260 | 43,770 | 46,220 | 54,070 | 55,300 | 47,310 | 45,920 | 48,390 | 56,280 | 57,830 |
| 75-79 | 42,440 | 40,520 | 40,460 | 44,110 | 48,880 | 42,500 | 43,430 | 42,970 | 46,790 | 51,960 |
| 80-84 | 41,060 | 41,330 | 41,110 | 44,570 | 47,100 | 41,170 | 44,270 | 44,230 | 47,520 | 50,530 |
| 85+ | 35,340 | 38,900 | 41,360 | 42,080 | 44,210 | 35,460 | 41,760 | 44,940 | 45,550 | 48,850 |
| **Sex** | | | | | | | | | | |
| Female | 42,320 | 42,700 | 45,550 | 50,950 | 56,080 | 42,320 | 44,810 | 48,000 | 53,350 | 59,010 |
| Male | 46,580 | 45,610 | 48,270 | 56,710 | 55,340 | 46,510 | 47,390 | 50,250 | 58,480 | 57,350 |
| **Education** | | | | | | | | | | |
| No high school diploma | 19,400 | 16,850 | 18,160 | 18,360 | 20,410 | 19,670 | 18,700 | 20,380 | 20,650 | 22,980 |
| High school graduate | 32,820 | 30,470 | 30,220 | 37,700 | 40,920 | 32,870 | 32,740 | 32,980 | 40,330 | 43,890 |
| Some college | 43,130 | 39,950 | 41,480 | 45,590 | 49,280 | 43,110 | 42,040 | 43,940 | 48,010 | 52,080 |
| College graduate | 67,760 | 68,520 | 71,680 | 79,150 | 78,350 | 67,530 | 70,150 | 73,360 | 80,650 | 80,330 |
| **Race and Hispanic origin** | | | | | | | | | | |
| White non-Hispanic | 49,440 | 49,620 | 53,800 | 63,280 | 61,510 | 49,350 | 51,680 | 56,090 | 65,420 | 64,170 |
| Black non-Hispanic | 34,280 | 33,860 | 37,650 | 41,520 | 44,340 | 34,430 | 36,100 | 40,400 | 44,230 | 47,480 |
| Hispanic | 26,070 | 24,930 | 27,250 | 34,650 | 44,640 | 26,270 | 26,530 | 29,310 | 36,720 | 46,840 |
| Other | 38,890 | 48,610 | 51,370 | 53,950 | 65,460 | 38,890 | 50,060 | 52,930 | 55,290 | 67,160 |
| **Marital status** | | | | | | | | | | |
| Married | 48,370 | 48,990 | 52,980 | 60,360 | 62,260 | 48,210 | 50,080 | 53,760 | 60,550 | 62,330 |
| Widowed | 41,450 | 42,770 | 46,010 | 50,230 | 53,910 | 41,510 | 45,880 | 50,370 | 55,690 | 60,890 |
| Divorced | 42,630 | 40,350 | 42,040 | 51,010 | 55,160 | 42,750 | 43,050 | 45,220 | 53,820 | 58,390 |
| Never married | 32,700 | 31,360 | 33,030 | 41,200 | 41,750 | 32,870 | 33,840 | 36,030 | 44,210 | 45,370 |
| **Own work years** | | | | | | | | | | |
| 0 - 9 | 18,570 | 16,560 | 19,230 | 19,820 | 22,010 | 18,720 | 17,890 | 20,760 | 21,470 | 23,880 |
| 10-14 | 25,580 | 23,090 | 22,010 | 25,610 | 26,070 | 25,920 | 25,210 | 24,790 | 28,440 | 29,370 |
| 15-19 | 31,160 | 23,590 | 22,880 | 24,460 | 26,480 | 31,530 | 25,890 | 25,720 | 27,190 | 29,990 |
| 20-24 | 29,160 | 26,860 | 27,630 | 27,860 | 29,390 | 29,410 | 29,000 | 30,300 | 30,680 | 32,610 |
| 25-29 | 33,120 | 32,210 | 28,050 | 29,970 | 51,630 | 33,260 | 34,220 | 30,730 | 32,600 | 54,450 |
| 30-34 | 33,610 | 33,270 | 31,260 | 34,680 | 35,330 | 33,660 | 35,220 | 33,710 | 37,130 | 38,240 |

| | Current-law payable | | | | | BPC proposal | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Year | | | | | Year | | | | |
| | 2025 | 2035 | 2045 | 2055 | 2065 | 2025 | 2035 | 2045 | 2055 | 2065 |
| 35-39 | 38,310 | 40,250 | 38,590 | 39,620 | 47,510 | 38,290 | 42,020 | 40,760 | 41,770 | 50,030 |
| 40+ | 55,790 | 54,390 | 58,840 | 67,930 | 67,260 | 55,620 | 56,380 | 60,940 | 69,830 | 69,560 |
| **Income quintile** | | | | | | | | | | |
| Bottom quintile | 9,930 | 8,830 | 8,630 | 9,020 | 9,350 | 10,300 | 10,640 | 10,910 | 11,490 | 12,130 |
| Second quintile | 20,710 | 18,970 | 18,920 | 20,680 | 22,000 | 20,790 | 21,380 | 21,840 | 23,690 | 25,460 |
| Middle quintile | 32,020 | 30,350 | 30,480 | 33,360 | 35,310 | 32,020 | 32,710 | 33,320 | 36,160 | 38,700 |
| Fourth quintile | 48,820 | 47,770 | 48,700 | 52,550 | 55,770 | 48,760 | 49,840 | 50,890 | 54,640 | 58,330 |
| Top quintile | 109,920 | 114,300 | 127,320 | 152,550 | 156,250 | 109,410 | 115,430 | 128,240 | 152,730 | 156,540 |
| **Lifetime earnings quintile** | | | | | | | | | | |
| Bottom quintile | 18,110 | 16,540 | 16,740 | 18,080 | 19,150 | 18,540 | 18,570 | 19,320 | 20,820 | 22,410 |
| Second quintile | 28,850 | 26,640 | 26,450 | 28,630 | 30,520 | 28,920 | 28,810 | 29,310 | 31,690 | 34,050 |
| Middle quintile | 38,430 | 36,340 | 37,100 | 41,380 | 43,220 | 38,370 | 38,430 | 39,630 | 43,890 | 46,250 |
| Fourth quintile | 50,490 | 50,410 | 53,050 | 56,350 | 60,750 | 50,360 | 52,310 | 55,020 | 58,230 | 62,880 |
| Top quintile | 85,530 | 90,270 | 100,720 | 123,710 | 125,030 | 85,080 | 91,880 | 101,910 | 124,070 | 125,600 |

**Source:** DYNASIM4 ID981.

**Notes:** DI = Disability Insurance. The table includes all adults age 62 and older and younger adults receiving Social Security benefits. Net income is calculated on a per capita basis and includes earnings, partnership and S-corporation income, Social Security benefits, Supplemental Security Income, defined-benefit pension income, other cash benefits, interest, dividends, rental and royalty income, capital gains, and taxable retirement account withdrawals, all minus federal and state income tax, worker Social Security and Medicare payroll taxes (including the additional Medicare tax and the net investment income surtax), and income-related Medicare Part B and Part D premiums above the base premium. Incomes are reported in 2018 inflation-adjusted dollars.

Table 3 shows the change in average net per capita income compared with the BPC proposal for our series of "work more," "save more," "deferred annuity," and "minimum benefits" options among people age 62 and older and younger adults receiving Social Security benefits over time. In the short term, working more increases net income more than saving more, but in the long term, saving more increases net income more than working more. Working more increases net incomes by the net additional earnings in the new work years. Among people age 62 and older, gains are mostly limited to people ages 62 to 69 who we simulate to work longer. Because working longer is often paired with delayed claiming, new workers often receive higher Social Security benefits after claiming because of a smaller actuarial reduction or higher delayed retirement credit. Working longer also reduces the number of years that accumulated savings needs to fund.

Shifting half of bond investments to a deferred annuity rather than simple bond purchases doesn't change who invests or how much is invested, it simply shifts some of the saving into a guaranteed price-adjusted annuity. Because we assume the returns on the deferred annuity receive essentially the same return as ordinary government and corporate bonds, the resulting lifetime income from the

investments are mostly the same. Deferred annuities, however, prevent investors from prematurely cashing out savings before retirement, increasing average net income in retirement slightly. Compared with self-invested bond returns that have stochastic returns, investors who had poor investment returns are better off with the deferred annuity, but investors who had high returns are worse off.

TABLE 3

**Change in Average Net Per Capita Income Compared with BPC in Selected Years by Option**

*People age 62 and older and adult disability beneficiaries (2018 price-adjusted dollars)*

| | Year | | | | |
|---|---|---|---|---|---|
| | 2025 | 2035 | 2045 | 2055 | 2065 |
| BPC + work 1 more year | 1,290 | 1,760 | 1,910 | 1,700 | 1,980 |
| BPC + work 2 more years | 2,660 | 3,050 | 3,200 | 3,540 | 4,180 |
| BPC + work with increased life expectancy | 0 | 260 | 1,300 | 1,930 | 3,650 |
| BPC + save 3% (addon) | 130 | 270 | 750 | 1,650 | 2,990 |
| BPC + save 5% (addon) | 200 | 440 | 1,260 | 2,770 | 4,860 |
| BPC + save 10% (addon) | 370 | 870 | 2,430 | 5,250 | 9,130 |
| BPC + save 3% (topup) | -60 | -50 | 130 | 500 | 1,060 |
| BPC + save 5% (topup) | 10 | 90 | 450 | 1,170 | 2,410 |
| BPC + save 10% (topup) | 200 | 480 | 1,440 | 3,370 | 6,330 |
| BPC + invest half of bonds in deferred annuity | 30 | 110 | 210 | 300 | 340 |
| BPC with minimum benefit (payable) | -470 | -10 | 260 | 440 | 650 |
| BPC + DC mandate with optout | 110 | 170 | 420 | 920 | 1,570 |
| Feasible reform | -330 | 560 | 2,230 | 3,550 | 6,060 |

**Source:** DYNASIM4 ID981.

**Notes:** Income changes are shown relative to the BPC proposal. The table includes all adults age 62 and older and younger adults receiving Social Security benefits. Net income is calculated on a per capita basis and includes earnings, partnership and S-corporation income, Social Security benefits, Supplemental Security Income, defined-benefit pension income, other cash benefits, interest, dividends, rental and royalty income, capital gains, and taxable retirement account withdrawals, all minus federal and state income tax, worker Social Security and Medicare payroll taxes (including the additional Medicare tax and the net investment income surtax), and income-related Medicare Part B and Part D premiums above the base premium. Incomes are reported in 2018 inflation-adjusted dollars.

## WORK MORE

High lifetime earners gain more from working longer than low lifetime earners in dollar terms (table 4), but percentage gains are more evenly distributed by earnings level (table 5), especially in later years. In all years, 62- to 69-year-olds gain the most from working longer because they are more likely to be the ones working longer than people age 70 and older. College graduates gain more in absolute terms from working longer because college graduates earn more on average than people with less education. Because we assume only nondisabled people work longer, few disability beneficiaries (age 61 and under) gain from working longer, and those with higher incomes gain from higher spousal earnings and higher Social Security auxiliary benefits. Keep in mind from figure 4 that the higher Social Security and other federal revenues from the added taxable earnings would also inure to elderly and nonelderly

populations depending upon what Congress decided to do with those monies. These gains are not reflected in tables 4 and 5.

TABLE 4

**Change in Average Net Per Capita Income from Working Two More Years Compared with BPC by Selected Characteristics in Selected Years**

*People age 62 and older and adult disability beneficiaries (2018 price-adjusted dollars)*

| | Year | | | | |
|---|---|---|---|---|---|
| | 2025 | 2035 | 2045 | 2055 | 2065 |
| **All** | 2,660 | 3,050 | 3,200 | 3,540 | 4,180 |
| **Age** | | | | | |
| 0-61 | 610 | 2,060 | 180 | 1,580 | 410 |
| 62-69 | 4,630 | 4,170 | 4,390 | 4,620 | 6,610 |
| 70-74 | 2,620 | 4,720 | 4,660 | 4,670 | 4,710 |
| 75-79 | 1,010 | 2,340 | 2,830 | 2,640 | 3,160 |
| 80-84 | 680 | 1,120 | 2,450 | 2,340 | 2,650 |
| 85+ | 140 | 380 | 1,380 | 2,460 | 2,290 |
| **Sex** | | | | | |
| Female | 2,670 | 2,860 | 3,070 | 4,060 | 3,820 |
| Male | 2,660 | 3,280 | 3,360 | 2,950 | 4,580 |
| **Education** | | | | | |
| No high school diploma | 660 | 860 | 1,240 | 1,410 | 1,880 |
| High school graduate | 1,240 | 1,880 | 2,070 | 1,410 | 2,570 |
| Some college | 3,640 | 3,110 | 3,220 | 3,370 | 3,870 |
| College graduate | 4,220 | 4,800 | 4,630 | 5,600 | 5,970 |
| **Race and Hispanic origin** | | | | | |
| White non-Hispanic | 2,970 | 3,670 | 3,340 | 3,330 | 4,660 |
| Black non-Hispanic | 1,660 | 2,570 | 2,530 | 4,300 | 5,540 |
| Hispanic | 1,620 | 1,700 | 2,490 | 3,370 | 2,780 |
| Other | 2,910 | 1,280 | 4,610 | 4,210 | 3,540 |
| **Marital status** | | | | | |
| Married | 3,200 | 3,810 | 3,670 | 3,710 | 4,940 |
| Widowed | 1,340 | 1,670 | 2,520 | 3,230 | 3,450 |
| Divorced | 2,770 | 2,950 | 3,510 | 3,610 | 3,810 |
| Never married | 2,070 | 2,060 | 1,920 | 3,290 | 3,390 |
| **Own work years** | | | | | |
| 0 - 9 | 590 | 1,000 | 1,190 | 1,100 | 1,360 |
| 10-14 | 450 | 750 | 1,080 | 1,190 | 1,870 |
| 15-19 | 1,240 | 1,060 | 570 | 2,580 | 2,220 |
| 20-24 | 1,360 | 1,010 | 1,310 | 1,910 | 1,770 |
| 25-29 | 1,910 | 1,850 | 3,320 | 2,690 | 200 |
| 30-34 | 1,560 | 3,230 | 2,440 | 2,140 | 3,630 |
| 35-39 | 3,500 | 3,100 | 2,460 | 1,900 | 3,770 |
| 40+ | 3,320 | 3,250 | 3,140 | 3,400 | 4,330 |
| **Lifetime earnings quintile** | | | | | |
| Bottom quintile | 860 | 1,420 | 1,190 | 1,000 | 1,420 |
| Second quintile | 1,200 | 1,510 | 1,700 | 1,880 | 2,200 |
| Middle quintile | 1,480 | 2,230 | 2,760 | 3,080 | 3,540 |
| Fourth quintile | 2,580 | 3,340 | 4,050 | 4,270 | 5,370 |
| Top quintile | 7,190 | 6,770 | 6,330 | 7,470 | 8,370 |

**Source:** DYNASIM4 ID981.

**Notes:** The table includes all adults age 62 and older and younger adults receiving Social Security benefits. The change is calculated compared with BPC from working two more years beginning in 2022.

TABLE 5

**Percentage Change in Average Net Per Capita Income from Working Two More Years Compared with BPC by Selected Characteristics in Selected Years**

*People age 62 and older and adult disability beneficiaries (percent)*

| | Year | | | | |
|---|---|---|---|---|---|
| | 2025 | 2035 | 2045 | 2055 | 2065 |
| **All** | 6.0 | 6.6 | 6.5 | 6.4 | 7.2 |
| **Age** | | | | | |
| 0-61 | 1.9 | 5.8 | 0.5 | 3.8 | 0.9 |
| 62-69 | 9.6 | 8.1 | 7.5 | 6.6 | 9.3 |
| 70-74 | 5.5 | 10.3 | 9.6 | 8.3 | 8.1 |
| 75-79 | 2.4 | 5.4 | 6.6 | 5.6 | 6.1 |
| 80-84 | 1.7 | 2.5 | 5.5 | 4.9 | 5.2 |
| 85+ | 0.4 | 0.9 | 3.1 | 5.4 | 4.7 |
| **Sex** | | | | | |
| Female | 6.3 | 6.4 | 6.4 | 7.6 | 6.5 |
| Male | 5.7 | 6.9 | 6.7 | 5.0 | 8.0 |
| **Education** | | | | | |
| No high school diploma | 3.4 | 4.6 | 6.1 | 6.8 | 8.2 |
| High school graduate | 3.8 | 5.7 | 6.3 | 3.5 | 5.9 |
| Some college | 8.5 | 7.4 | 7.3 | 7.0 | 7.4 |
| College graduate | 6.2 | 6.8 | 6.3 | 6.9 | 7.4 |
| **Race and Hispanic origin** | | | | | |
| White non-Hispanic | 6.0 | 7.1 | 6.0 | 5.1 | 7.3 |
| Black non-Hispanic | 4.8 | 7.1 | 6.3 | 9.7 | 11.7 |
| Hispanic | 6.2 | 6.4 | 8.5 | 9.2 | 5.9 |
| Other | 7.5 | 2.5 | 8.7 | 7.6 | 5.3 |
| **Marital status** | | | | | |
| Married | 6.6 | 7.6 | 6.8 | 6.1 | 7.9 |
| Widowed | 3.2 | 3.6 | 5.0 | 5.8 | 5.7 |
| Divorced | 6.5 | 6.8 | 7.8 | 6.7 | 6.5 |
| Never married | 6.3 | 6.1 | 5.3 | 7.5 | 7.5 |
| **Own work years** | | | | | |
| 0 - 9 | 3.1 | 5.6 | 5.7 | 5.1 | 5.7 |
| 10-14 | 1.7 | 3.0 | 4.3 | 4.2 | 6.4 |
| 15-19 | 3.9 | 4.1 | 2.2 | 9.5 | 7.4 |
| 20-24 | 4.6 | 3.5 | 4.3 | 6.2 | 5.4 |
| 25-29 | 5.7 | 5.4 | 10.8 | 8.3 | 0.4 |
| 30-34 | 4.6 | 9.2 | 7.2 | 5.8 | 9.5 |
| 35-39 | 9.1 | 7.4 | 6.0 | 4.5 | 7.5 |
| 40+ | 6.0 | 5.8 | 5.2 | 4.9 | 6.2 |
| **Lifetime earnings quintile** | | | | | |
| Bottom quintile | 4.6 | 7.6 | 6.2 | 4.8 | 6.3 |
| Second quintile | 4.1 | 5.2 | 5.8 | 5.9 | 6.5 |
| Middle quintile | 3.9 | 5.8 | 7.0 | 7.0 | 7.7 |
| Fourth quintile | 5.1 | 6.4 | 7.4 | 7.3 | 8.5 |
| Top quintile | 8.5 | 7.4 | 6.2 | 6.0 | 6.7 |

**Source:** DYNASIM4 ID981.

**Notes:** The table includes all adults age 62 and older and younger adults receiving Social Security benefits. The change is calculated compared with BPC from working two more years beginning in 2022.

### SAVE MORE

Under the "save more" options, those people with the most years of earnings will have the most years of added saving, as can be seen in tables 6 and 7 when people are classified by "own work years." Because the behavior change begins in 2021, however, relatively few of the older retirees had any work years with higher saving in 2025. Thus, the share of retirees with additional retirement savings increases over time. Accordingly, the 62- to 69-year-old group consistently has higher net income increases than older retirees because the younger group has more work years with additional saving and more years of compounded investments returns. Top-quintile lifetime earners gain the most in dollar terms from the "save more" option, but middle earners gain the most in percentage terms after 2035. Additional savings are assumed here to face 401(k) contribution limits, thus constraining shares of additional earnings saved by the highest earners. Low lifetime earners gain from the additional saving, but one of the reasons people have low lifetime earnings is because they work relatively few years. Thus, in addition to saving from a smaller base earnings amount, they also save for fewer years than long-career workers and high earners.

The age pattern from saving more changes significantly over time (tables 6 and 7). Among people age 62 and older in 2025, people ages 62 to 69 are the most likely to work and to have saved more of their earnings. Each decade later, more people age 62 and older have additional savings from work earlier in their careers and they benefit from more years of investment returns. At older ages, people begin to spend their accumulated savings, so even in the later decades, the change in average net incomes decline with age. By 2065, we project that saving 10 percent of earnings more per work year will increase average net per capita annual income by $9,130 in 2018 price-adjusted dollars (a 15.7 percent increase). Bottom-quintile lifetime earners gain $2,270 (10.1 percent), and top-quintile lifetime earners, who have more years of earnings out of which to add saving, gain $16,330 (13 percent).

TABLE 6

**Change in Average Net Per Capita Income from Saving 10 Percent of Earnings More Compared with BPC by Selected Characteristics in Selected Years**

*People age 62 and older and adult disability beneficiaries (2018 price-adjusted dollars)*

| | Year | | | | |
|---|---|---|---|---|---|
| | 2025 | 2035 | 2045 | 2055 | 2065 |
| **All** | 370 | 870 | 2,430 | 5,250 | 9,130 |
| **Age** | | | | | |
| 0-61 | 230 | 370 | 570 | 1,180 | 1,200 |
| 62-69 | 710 | 1,360 | 2,610 | 4,520 | 6,330 |
| 70-74 | 250 | 1,410 | 4,360 | 8,450 | 14,100 |
| 75-79 | 120 | 530 | 3,130 | 6,810 | 12,390 |
| 80-84 | 60 | 120 | 1,760 | 5,610 | 11,050 |
| 85+ | 10 | 10 | 430 | 2,980 | 7,410 |
| **Sex** | | | | | |
| Female | 340 | 770 | 2,290 | 5,080 | 8,840 |
| Male | 410 | 980 | 2,590 | 5,440 | 9,450 |
| **Education** | | | | | |
| No high school diploma | 60 | 130 | 800 | 1,920 | 3,460 |
| High school graduate | 170 | 510 | 1,600 | 3,700 | 6,970 |
| Some college | 360 | 770 | 2,310 | 5,240 | 9,070 |
| College graduate | 730 | 1,500 | 3,620 | 7,150 | 11,930 |
| **Race and Hispanic origin** | | | | | |
| White non-Hispanic | 420 | 970 | 2,670 | 5,820 | 10,230 |
| Black non-Hispanic | 270 | 660 | 2,130 | 4,690 | 8,600 |
| Hispanic | 190 | 520 | 1,690 | 4,000 | 7,060 |
| Other | 370 | 950 | 2,700 | 5,340 | 9,080 |
| **Marital status** | | | | | |
| Married | 500 | 1,140 | 2,900 | 5,690 | 9,400 |
| Widowed | 160 | 560 | 2,260 | 5,910 | 11,480 |
| Divorced | 310 | 660 | 1,950 | 4,600 | 8,440 |
| Never married | 270 | 540 | 1,720 | 4,120 | 7,140 |
| **Own work years** | | | | | |
| 0 - 9 | 60 | 20 | 90 | 340 | 970 |
| 10-14 | 100 | 120 | 580 | 1,450 | 1,690 |
| 15-19 | 190 | 360 | 760 | 1,390 | 2,610 |
| 20-24 | 240 | 410 | 1,200 | 2,300 | 3,860 |
| 25-29 | 280 | 510 | 1,360 | 2,690 | 4,900 |
| 30-34 | 230 | 700 | 1,750 | 3,850 | 6,320 |
| 35-39 | 290 | 800 | 2,310 | 4,500 | 7,730 |
| 40+ | 510 | 1,140 | 3,130 | 6,750 | 11,740 |
| **Lifetime earnings quintile** | | | | | |
| Bottom quintile | 60 | 140 | 560 | 1,340 | 2,270 |
| Second quintile | 180 | 470 | 1,480 | 3,470 | 5,990 |
| Middle quintile | 260 | 690 | 2,250 | 5,210 | 8,930 |
| Fourth quintile | 400 | 1,060 | 3,210 | 6,830 | 12,110 |
| Top quintile | 970 | 1,960 | 4,650 | 9,380 | 16,330 |

**Source:** DYNASIM4 ID981.

**Notes:** The table includes all adults age 62 and older and younger adults receiving Social Security benefits. The change is calculated compared with BPC from saving 10 percent of earnings more per year in addition to baseline saving beginning in 2021. Amounts are in 2018 price-adjusted dollars.

TABLE 7

**Percentage Change in Average Net Per Capita Income from Saving 10 Percent of Earnings More Compared with BPC by Selected Characteristics in Selected Years**

*People age 62 and older and adult disability beneficiaries (percent)*

| | Year | | | | |
|---|---|---|---|---|---|
| | 2025 | 2035 | 2045 | 2055 | 2065 |
| **All** | 0.8 | 1.9 | 5.0 | 9.4 | 15.7 |
| **Age** | | | | | |
| 0-61 | 0.7 | 1.0 | 1.5 | 2.8 | 2.5 |
| 62-69 | 1.5 | 2.6 | 4.5 | 6.5 | 8.9 |
| 70-74 | 0.5 | 3.1 | 9.0 | 15.0 | 24.4 |
| 75-79 | 0.3 | 1.2 | 7.3 | 14.6 | 23.8 |
| 80-84 | 0.1 | 0.3 | 4.0 | 11.8 | 21.9 |
| 85+ | 0.0 | 0.0 | 1.0 | 6.5 | 15.2 |
| **Sex** | | | | | |
| Female | 0.8 | 1.7 | 4.8 | 9.5 | 15.0 |
| Male | 0.9 | 2.1 | 5.2 | 9.3 | 16.5 |
| **Education** | | | | | |
| No high school diploma | 0.3 | 0.7 | 3.9 | 9.3 | 15.1 |
| High school graduate | 0.5 | 1.5 | 4.9 | 9.2 | 15.9 |
| Some college | 0.8 | 1.8 | 5.3 | 10.9 | 17.4 |
| College graduate | 1.1 | 2.1 | 4.9 | 8.9 | 14.9 |
| **Race and Hispanic origin** | | | | | |
| White non-Hispanic | 0.9 | 1.9 | 4.8 | 8.9 | 15.9 |
| Black non-Hispanic | 0.8 | 1.8 | 5.3 | 10.6 | 18.1 |
| Hispanic | 0.7 | 2.0 | 5.8 | 10.9 | 15.1 |
| Other | 1.0 | 1.9 | 5.1 | 9.7 | 13.5 |
| **Marital status** | | | | | |
| Married | 1.0 | 2.3 | 5.4 | 9.4 | 15.1 |
| Widowed | 0.4 | 1.2 | 4.5 | 10.6 | 18.9 |
| Divorced | 0.7 | 1.5 | 4.3 | 8.5 | 14.5 |
| Never married | 0.8 | 1.6 | 4.8 | 9.3 | 15.7 |
| **Own work years** | | | | | |
| 0 - 9 | 0.3 | 0.1 | 0.4 | 1.6 | 4.1 |
| 10-14 | 0.4 | 0.5 | 2.4 | 5.1 | 5.8 |
| 15-19 | 0.6 | 1.4 | 3.0 | 5.1 | 8.7 |
| 20-24 | 0.8 | 1.4 | 3.9 | 7.5 | 11.8 |
| 25-29 | 0.8 | 1.5 | 4.4 | 8.3 | 9.0 |
| 30-34 | 0.7 | 2.0 | 5.2 | 10.4 | 16.5 |
| 35-39 | 0.8 | 1.9 | 5.7 | 10.8 | 15.5 |
| 40+ | 0.9 | 2.0 | 5.1 | 9.7 | 16.9 |
| **Lifetime earnings quintile** | | | | | |
| Bottom quintile | 0.3 | 0.7 | 2.9 | 6.4 | 10.1 |
| Second quintile | 0.6 | 1.6 | 5.0 | 11.0 | 17.6 |
| Middle quintile | 0.7 | 1.8 | 5.7 | 11.9 | 19.3 |
| Fourth quintile | 0.8 | 2.0 | 5.8 | 11.7 | 19.3 |
| Top quintile | 1.1 | 2.1 | 4.6 | 7.6 | 13.0 |

**Source:** DYNASIM4 ID981.

**Notes:** The table includes all adults age 62 and older and younger adults receiving Social Security benefits. The change is calculated compared with BPC from saving 10 percent of earnings more per year in addition to baseline saving beginning in 2021.

### MINIMUM BENEFITS PAIRED WITH MORE WORK AND MORE SAVING

Table 8 shows the change in average net income among people age 62 and older and younger adult Social Security beneficiaries for our "feasible reform" that adds "payable" minimum benefits to the BPC proposal, adds increased work aligned with gains in life expectancy, adds an employer mandate to offer a deferred retirement plan with an opt out, and has people invest half of their bond allocation to deferred annuities beginning in 2021. Table 9 shows the percentage change for the same option.

In many of our previous examples, we have shown what would happen if people indeed would work longer and save more. Our feasible reform moves toward a more realistic assessment of what might be possible under legislation. The relaxed assumption for working more essentially assumes that Congress puts work incentives into Social Security and other policies sufficient to encourage people to work an additional year when their average life expectancy increases by one year, essentially keeping average years in retirement at about 20. For saving more, we try to take into account the extent to which people might increase retirement account saving if all workers have access to a workplace saving account through employer mandates. Such mandates here are assumed to be similar to legislated state mandates with automatic enrollment and sensible default investment options. Partly because working more and saving more, even when assumed to be fairly universal in their application, did little to address the needs of many with low lifetime earnings (see tables 4 and 6), we adopted a minimum benefit provision to provide almost everyone with a wage-indexed poverty-level minimum benefit.

One caveat is required. When people work more and save more, their incomes increase in part because their output increases.[10] In essence, people pay for their own increase in incomes. When government provides a minimum benefit, transfers are required from some to others to be budget neutral. Here we made the option "payable"—that is, to involve no change in aggregate government revenues less outlays based on BPC benefits—by reducing other Social Security benefits proportionately. Although Congress could technically phase in the minimum benefit increase, politically it is probably more realistic to assume that Congressional action in this direction would apply fairly quickly to improve benefits for eligible beneficiaries. At the same time, it would be politically difficult to quickly cut other benefits across the board, as assumed here. Instead, Congress would likely gradually reduce the rate of growth in benefits for future retirees. Such a scenario would require some additional source of funds that we did not deal with in this study, such as some temporary general revenue transfers that would be more than paid for over time by the very significant increases in general revenues and Social Security actuarial balances that would be generated by the increase in work and saving.

TABLE 8

**Change in Average Net Per Capita Income from BPC with Payable Minimum Benefits, Deferred Annuity Investment, More Saving, and More Work by Selected Characteristics in Selected Years**

*People age 62 and older and adult disability beneficiaries (2018 price adjusted dollars)*

| | Year | | | | |
|---|---|---|---|---|---|
| | 2025 | 2035 | 2045 | 2055 | 2065 |
| **All** | -330 | 560 | 2,230 | 3,550 | 6,060 |
| **Age** | | | | | |
| 0-61 | 120 | 1,020 | 80 | 1,280 | 560 |
| 62-69 | 240 | 1,800 | 4,380 | 5,210 | 9,760 |
| 70-74 | -790 | 340 | 3,390 | 5,830 | 7,550 |
| 75-79 | -820 | -280 | 1,070 | 2,620 | 4,940 |
| 80-84 | -850 | -410 | 640 | 1,650 | 3,710 |
| 85+ | -860 | -660 | -190 | 510 | 1,740 |
| **Sex** | | | | | |
| Female | -220 | 530 | 2,010 | 4,160 | 5,410 |
| Male | -450 | 610 | 2,480 | 2,850 | 6,790 |
| **Education** | | | | | |
| No high school diploma | 1,230 | 2,460 | 4,110 | 5,410 | 6,630 |
| High school graduate | -170 | 810 | 2,220 | 2,770 | 5,400 |
| Some college | -510 | 370 | 1,880 | 3,270 | 5,580 |
| College graduate | -980 | -160 | 1,910 | 3,750 | 6,650 |
| **Race and Hispanic origin** | | | | | |
| White non-Hispanic | -730 | 70 | 1,430 | 2,670 | 5,690 |
| Black non-Hispanic | 370 | 1,410 | 2,790 | 4,400 | 8,540 |
| Hispanic | 950 | 1,810 | 3,610 | 5,200 | 5,800 |
| Other | 500 | 1,100 | 4,080 | 4,010 | 5,710 |
| **Marital status** | | | | | |
| Married | -220 | 920 | 2,970 | 3,550 | 7,800 |
| Widowed | -1,280 | -750 | -130 | 780 | 2,260 |
| Divorced | -200 | 510 | 2,300 | 5,800 | 5,830 |
| Never married | 460 | 1,170 | 2,680 | 3,490 | 5,430 |
| **Own work years** | | | | | |
| 0 - 9 | 1,640 | 2,860 | 4,240 | 4,990 | 5,760 |
| 10-14 | 1,480 | 2,130 | 2,860 | 3,810 | 5,730 |
| 15-19 | 1,360 | 1,970 | 2,450 | 5,040 | 5,530 |
| 20-24 | 740 | 1,850 | 2,860 | 3,500 | 5,040 |
| 25-29 | 240 | 950 | 2,650 | 5,020 | 2,500 |
| 30-34 | -220 | 1,210 | 2,490 | 3,980 | 5,830 |
| 35-39 | -490 | 1,330 | 2,750 | 3,220 | 7,090 |
| 40+ | -1,010 | -230 | 1,650 | 2,800 | 5,730 |
| **Lifetime earnings quintile** | | | | | |
| Bottom quintile | 2,020 | 2,890 | 3,980 | 4,660 | 5,850 |
| Second quintile | -20 | 1,010 | 2,080 | 3,220 | 4,730 |
| Middle quintile | -800 | 60 | 1,470 | 2,850 | 4,950 |
| Fourth quintile | -1,290 | -460 | 1,490 | 2,410 | 6,040 |
| Top quintile | -1,530 | -690 | 2,120 | 4,600 | 8,710 |

**Source:** DYNASIM4 ID981.

**Notes:** The table includes all adults age 62 and older and younger adults receiving Social Security benefits. The change is calculated compared with the BPC proposal from adding a payable minimum benefit, investing half of bond allocation to deferred annuities, added savings with an opt out, and life expectancy-related increase in work years beginning in 2021 ("feasible reform" option).

TABLE 9

**Percentage Change in Average Net Per Capita Income from BPC with Payable Minimum Benefits, Deferred Annuity Investment, More Saving, and More Work in Selected Years**

*People age 62 and older and adult disability beneficiaries (percent)*

| | Year | | | | |
|---|---|---|---|---|---|
| | 2025 | 2035 | 2045 | 2055 | 2065 |
| **All** | -0.7 | 1.2 | 4.5 | 6.4 | 10.4 |
| **Age** | | | | | |
| 0-61 | 0.4 | 2.9 | 0.2 | 3.1 | 1.2 |
| 62-69 | 0.5 | 3.5 | 7.5 | 7.5 | 13.7 |
| 70-74 | -1.7 | 0.7 | 7.0 | 10.4 | 13.1 |
| 75-79 | -1.9 | -0.7 | 2.5 | 5.6 | 9.5 |
| 80-84 | -2.1 | -0.9 | 1.4 | 3.5 | 7.3 |
| 85+ | -2.4 | -1.6 | -0.4 | 1.1 | 3.6 |
| **Sex** | | | | | |
| Female | -0.5 | 1.2 | 4.2 | 7.8 | 9.2 |
| Male | -1.0 | 1.3 | 4.9 | 4.9 | 11.8 |
| **Education** | | | | | |
| No high school diploma | 6.2 | 13.2 | 20.2 | 26.2 | 28.9 |
| High school graduate | -0.5 | 2.5 | 6.7 | 6.9 | 12.3 |
| Some college | -1.2 | 0.9 | 4.3 | 6.8 | 10.7 |
| College graduate | -1.5 | -0.2 | 2.6 | 4.6 | 8.3 |
| **Race and Hispanic origin** | | | | | |
| White non-Hispanic | -1.5 | 0.1 | 2.6 | 4.1 | 8.9 |
| Black non-Hispanic | 1.1 | 3.9 | 6.9 | 9.9 | 18.0 |
| Hispanic | 3.6 | 6.8 | 12.3 | 14.2 | 12.4 |
| Other | 1.3 | 2.2 | 7.7 | 7.3 | 8.5 |
| **Marital status** | | | | | |
| Married | -0.4 | 1.8 | 5.5 | 5.9 | 12.5 |
| Widowed | -3.1 | -1.6 | -0.3 | 1.4 | 3.7 |
| Divorced | -0.5 | 1.2 | 5.1 | 10.8 | 10.0 |
| Never married | 1.4 | 3.5 | 7.4 | 7.9 | 12.0 |
| **Own work years** | | | | | |
| 0 - 9 | 8.8 | 16.0 | 20.4 | 23.2 | 24.1 |
| 10-14 | 5.7 | 8.4 | 11.5 | 13.4 | 19.5 |
| 15-19 | 4.3 | 7.6 | 9.5 | 18.5 | 18.4 |
| 20-24 | 2.5 | 6.4 | 9.4 | 11.4 | 15.4 |
| 25-29 | 0.7 | 2.8 | 8.6 | 15.4 | 4.6 |
| 30-34 | -0.7 | 3.4 | 7.4 | 10.7 | 15.2 |
| 35-39 | -1.3 | 3.2 | 6.7 | 7.7 | 14.2 |
| 40+ | -1.8 | -0.4 | 2.7 | 4.0 | 8.2 |
| **Lifetime earnings quintile** | | | | | |
| Bottom quintile | 10.9 | 15.5 | 20.6 | 22.4 | 26.1 |
| Second quintile | -0.1 | 3.5 | 7.1 | 10.2 | 13.9 |
| Middle quintile | -2.1 | 0.2 | 3.7 | 6.5 | 10.7 |
| Fourth quintile | -2.6 | -0.9 | 2.7 | 4.1 | 9.6 |
| Top quintile | -1.8 | -0.7 | 2.1 | 3.7 | 6.9 |

**Source:** DYNASIM4 ID981.

**Notes:** The table includes all adults age 62 and older and younger adults receiving Social Security benefits. The change is calculated compared with the BPC proposal from adding a payable minimum benefit, investing half of bond allocation to deferred annuities, added savings with an opt out, and life expectancy-related increase in work years beginning in 2021 ("feasible reform" option).

Those benefit cuts to pay for the minimum benefits largely explain the temporary reductions in income in table 8. In 2025, average net income falls by $330, but losses are limited to people in the top four quintiles of lifetime earnings who were assumed to pay for the Social Security minimum benefit and enhanced SSI benefits paid to bottom quintile earners. Over time, projected net incomes increase. By 2065, this option increases projected average net per capita income by $6,060 in 2018 price-adjusted dollars (10.4 percent). Consistent with the work more option shown in table 4, people ages 62 to 69 gain the most from working longer because people in this age range are the most likely to have new earnings. Note the overall gains for people ages 62 to 69 are higher in this option than in the "save 10 percent more" option alone (compare $9,760 and $6,330). Although they may not annually save as much as 10 percent, they benefit from the added work, added minimum benefit, added saving or reduced dissaving generated during the additional years of work, and delayed Social Security claiming.

The relaxed saving assumptions used in the "feasible reform" generates less saving for many higher-income workers than the mandated saving used in the "save 10 percent more" option (compare table 8 and table 6). Paired with the assumed slower growth in Social Security benefits used to pay for the minimum benefits, the income gains for higher-income groups are smaller than gains in the "10 percent mandated saving" option, still all subgroups have higher average net incomes under the "feasible reform" option than under the BPC proposal in later years. However, the minimum benefit provisions substantially increase net incomes for subgroups that gain little from the "work more" or "save more" options because of their poor health and low earnings. Compared with the BPC proposal in 2065, the "feasible reform" option increases projected average net per capita income by $5,850 (26.1 percent) for bottom-quintile lifetime earners and by $8,710 (6.9 percent) for top-quintile lifetime earners. People with fewer work years gain more than people with more work years in percentage terms. Projected average net incomes increase $8,540 (18 percent) for Black people and $5,800 (12.4 percent) for Hispanic people. As noted, even those income increases are understated by the extent that the additional general revenues could add to government outlays or reduce tax rates.

## Wage-Adjusted Poverty

Figure 5 shows projected wage-adjusted poverty rates from 2010 to 2093. The left panel shows the poverty rates for the current-law payable scenario, the BPC proposal, and three "work more" options. The middle panel shows wage-adjusted poverty rates for three "save more" options. The right panel shows wage-adjusted poverty rates for the minimum benefit options. We limit the analysis to full-year Social Security beneficiaries and exclude people with negative net investment income. The BPC proposal alone reduces wage-adjusted poverty rates compared with the current-law payable scenario

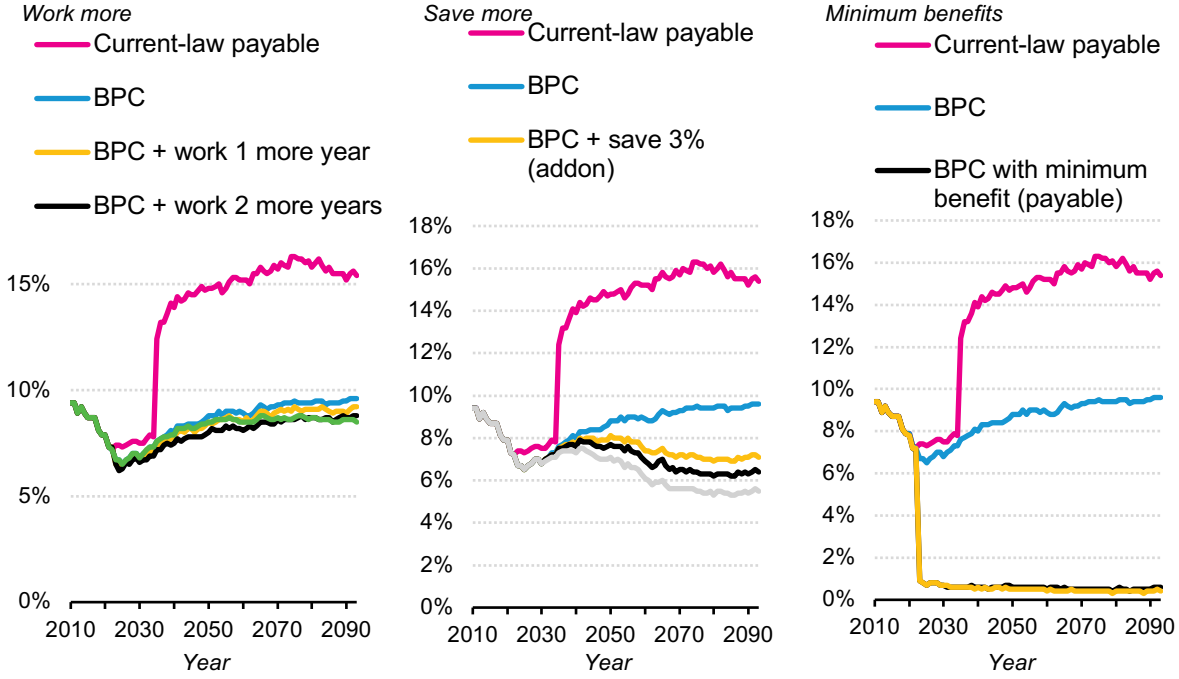
because it eliminates the 20 to 25 percent reduction in Social Security benefits when the current-law trust funds are depleted in 2035.

When added on top of the BPC proposal, working more makes only modest additional reductions in wage-adjusted poverty over time (left panel). We assume that new workers with earnings above the retirement-earnings-test exempt amount delay claiming, but we allow low earners to both work and claim benefits. Thus, gains in later years of retirement for these low earners are limited by the extent to which they delayed claiming and the limited extent to which their AIME increases. Also, we assume only nondisabled people work longer. Working two more years reduces wage-adjusted poverty more than working one more year. When working longer is tied to increases in life expectancy, it takes longer for the added earnings to reduce poverty, because few people are initially affected by the option, but by 2090, later cohorts will have increased work by three to four years.

FIGURE 5

**Wage-adjusted Poverty Rate by Year and Option, 2010-2093**

*Full-year adult Social Security beneficiaries (percent)*




**Source:** DYNASIM4 ID981.

**Notes:** The wage-adjusted poverty measure indicates whether family income is below the poverty level wage-adjusted after 2025. The figure includes full-year adult Social Security beneficiaries and excludes beneficiaries with negative investment income.

Compared with the BPC proposal, saving more reduces wage-adjusted poverty more than working more (middle panel). The higher the saving rate, the greater the reduction in wage-adjusted poverty.

The reduction in poverty from added saving grows over time as more workers have more years of saving and more years of compounded investment returns before retirement. We project that by 2093, saving 3, 5, and 10 percent of earnings more per year would reduce wage-adjusted poverty rates by 2.5, 3.2, and 4.2 percentage points, respectively (equivalent to 26 percent, 33 percent, and 43 percent reductions in wage-adjusted poverty rates, respectively).

In the end, working more and saving more have only modest to moderate effects on poverty and would still leave many households with low lifetime earnings below our minimum standard for replacement income. The minimum benefit provisions shown in the right panel were specifically designed to eliminate wage-adjusted poverty. The few individuals remaining with income below the wage-adjusted federal poverty level have enough assets to make them ineligible for the enhanced SSI benefits.

## Income Below the Standard

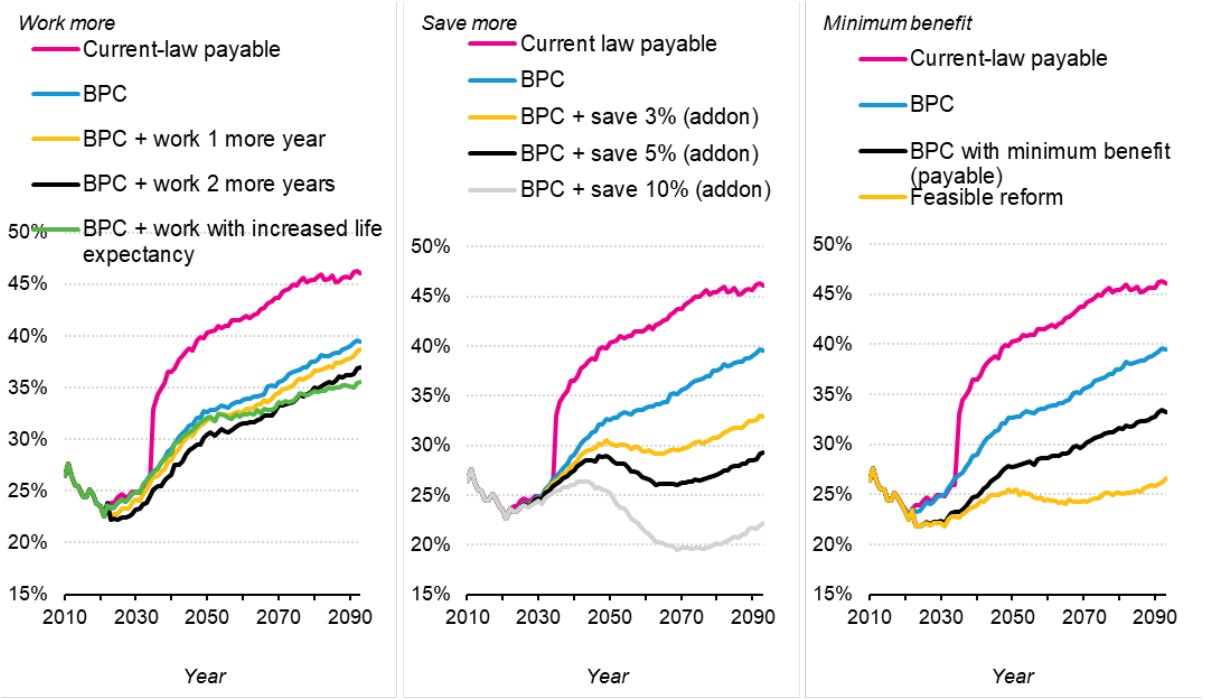
Figure 6 shows the share of full-year adult Social Security beneficiaries with family income below the standard, where the standard is the higher of 75 percent of average price-adjusted earnings from age 50 to 59 or 25 percent of average economy-wide earnings. The left panel shows below standard rates for the current-law payable scenario, the BPC proposal, and three "work more" options. In all cases, the projected percentage of full-year Social Security beneficiaries with income below the standard rises over time. Some of the initial growth reflects the recent increases in Social Security's full retirement age that reduce Social Security replacement rates for later cohorts, who constitute larger shares of the elderly population over time. Another cause is the increased share of people at more advanced ages among the elderly population because of both increased longevity and the aging of the baby boomers. Recall that our need standard increases with wage growth, but once initial Social Security benefits are established, they only increase with price growth. As people age, they spend down retirement savings and the value of their Social Security benefit falls relative to average earnings, thereby increasing the share with income below the standard.

Saving more (middle panel) makes a significantly bigger impact on reducing the share of aged and disabled people with income below the standard than working more. The higher the additional saving rate, the greater the increase in income adequacy, and the saving effects increase over time. While working more has a bigger initial effect on income adequacy, saving more has a bigger long-term effect on it.

FIGURE 6

**Percentage of Aged and Disabled with Annuity Income Below Preretirement Income Standard by Year and Option, 2010-93**

*Full-year adult Social Security beneficiaries (percent)*




**Source:** DYNASIM4 ID981.

**Notes:** The income below standard measure indicates whether family income can replace at least 75 percent of preretirement earnings and be above 25 percent of the average wage index. People with retirement income above the average wage index have income above the standard. The figure includes full-year adult Social Security beneficiaries and excludes beneficiaries with negative investment income.

Adding minimum benefits to Social Security and SSI also significantly reduces the share of aged and disabled people with income below the standard (right panel). Our modeled minimum benefit guarantees a lower benefit level than the 25 percent of the average wage we use for our adequacy measure. Had we tied the adequacy measure solely to the wage-adjusted poverty threshold, minimum benefits would have reduced the share with income below the standard virtually to zero as with the relative poverty measure shown in figure 5. When we pair more work and more saving with the "minimum benefit" option (feasible reform), the share of the population below the standard (the higher of 75 percent of preretirement earnings or 25 percent of the AWI) becomes almost constant by the late 2040s at around 25 percent and reaching 26 percent by 2090, substantially lower than the 46 percent and 40 percent under the current-law payable scenario and the BPC proposal, respectively.

Table 10 shows the percentage of the aged and disabled population with projected income below the standard in 2065 for the BPC proposal and the percentage-point change from adding work, adding

saving, and adding minimum benefits by selected characteristics. In 2065, 35 percent of projected aged and disabled Social Security beneficiaries will have family income below the standard. Working longer makes only small reductions in the share with income below the standard (a 3 to 5 percentage-point reduction). Working longer mostly helps people ages 62 to 69, who are more likely than older people to work.

Saving 3 percent more of earnings reduces the share of aged and disabled with income below the standard by 5 percentage points. Saving 5 percent more of earnings reduces the share by 7 percentage points. And saving 10 percent more of earnings reduces the share by 13 percentage points. Beneficiaries with more work years are more likely from the start to achieve adequacy, and additional saving for them applies over more years, thus adding to their relative advantage. More savings closes the income gap for middle-quintile lifetime earners more than bottom-quintile lifetime earners because middle-quintile earners are more likely to have both more work years and higher earnings than low lifetime earners. Contribution limits restrict the amount high earners can save, reducing added saving relative to the target increase. High-income workers also have a higher income standard than lower-income workers. Social Security's lower replacement rate for high earners also increases the share of retirement income that high earners must generate from saving to meet the standard.

Adding minimum benefits has the biggest impact on reducing the share of aged and disabled people with income below the standard among people with few work years (an 8 percentage-point reduction for people with fewer than 10 years of work), for bottom quintile lifetime earners (a 16 percentage-point reduction), and those without a high school diploma (a 15 percentage-point reduction). When minimum benefits are paired with more work and more saving (feasible reform), the gains in adequacy are even greater than adding minimum benefits alone for these vulnerable subgroups.

TABLE 10

## Percentage with Family Income Below the Standard by Selected Characteristics in 2065

*People age 62 and older and adult disability beneficiaries (percent and percentage point change)*

| | | Percentage point change compared with BPC | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Percent below standard BPC | BPC + work 1 more year | BPC + work 2 more years | BPC + work with increased life expectancy | BPC + save 3% (addon) | BPC + save 5% (addon) | BPC + save 10% (addon) | BPC with minimum benefit (payable) | Feasible reform |
| **All** | 35 | -2 | -3 | -3 | -5 | -7 | -13 | -4 | -10 |
| **Age** | | | | | | | | | |
| 0-61 | 25 | -1 | -1 | 0 | -2 | -4 | -7 | -2 | -3 |
| 62-69 | 32 | -3 | -5 | -5 | -4 | -7 | -12 | -5 | -11 |
| 70-74 | 36 | -1 | -4 | -4 | -6 | -10 | -17 | -5 | -13 |
| 75-79 | 39 | -2 | -3 | -2 | -6 | -9 | -16 | -5 | -11 |
| 80-84 | 41 | -2 | -2 | -2 | -5 | -8 | -14 | -4 | -10 |
| 85+ | 41 | 0 | -2 | 0 | -3 | -5 | -9 | -3 | -6 |
| **Sex** | | | | | | | | | |
| Female | 35 | -2 | -3 | -3 | -4 | -7 | -12 | -4 | -10 |
| Male | 36 | -2 | -4 | -3 | -5 | -8 | -14 | -4 | -10 |
| **Education** | | | | | | | | | |
| No high school diploma | 63 | -2 | -4 | -3 | -3 | -6 | -11 | -15 | -20 |
| High school graduate | 40 | -2 | -4 | -3 | -5 | -8 | -15 | -8 | -14 |
| Some college | 34 | -1 | -3 | -2 | -5 | -9 | -15 | -4 | -9 |
| College graduate | 27 | -2 | -4 | -3 | -4 | -7 | -11 | 0 | -6 |
| **Race and Hispanic origin** | | | | | | | | | |
| White non-Hispanic | 30 | -2 | -3 | -3 | -5 | -8 | -13 | -2 | -8 |
| Black non-Hispanic | 41 | -3 | -4 | -4 | -5 | -7 | -14 | -6 | -13 |
| Hispanic | 45 | -1 | -3 | -3 | -4 | -7 | -13 | -8 | -13 |
| Other | 35 | -2 | -4 | -3 | -4 | -7 | -11 | -4 | -9 |
| **Marital status** | | | | | | | | | |
| Married | 37 | -3 | -5 | -4 | -6 | -9 | -16 | -6 | -13 |
| Widowed | 22 | -1 | -2 | -1 | -2 | -4 | -6 | -1 | -4 |
| Divorced | 35 | -2 | -3 | -3 | -4 | -7 | -12 | -4 | -10 |
| Never married | 44 | -1 | -2 | -2 | -4 | -7 | -13 | -5 | -10 |
| **Own work years** | | | | | | | | | |
| 0 - 9 | 65 | -2 | -3 | -3 | -1 | -1 | -2 | -8 | -10 |
| 10-14 | 52 | -1 | -2 | -2 | -1 | -2 | -5 | -10 | -13 |
| 15-19 | 48 | -1 | -4 | -4 | -2 | -4 | -7 | -13 | -16 |
| 20-24 | 47 | 0 | -1 | -1 | -3 | -5 | -9 | -11 | -15 |
| 25-29 | 44 | -2 | -2 | -2 | -4 | -6 | -12 | -12 | -16 |
| 30-34 | 40 | -2 | -3 | -3 | -5 | -8 | -14 | -9 | -14 |
| 35-39 | 36 | -2 | -3 | -4 | -5 | -9 | -15 | -6 | -12 |
| 40+ | 30 | -2 | -3 | -3 | -5 | -8 | -14 | -1 | -8 |
| **Lifetime earnings quintile** | | | | | | | | | |
| Bottom quintile | 59 | -2 | -3 | -3 | -3 | -5 | -9 | -16 | -20 |
| Second quintile | 32 | -1 | -3 | -3 | -5 | -9 | -14 | -8 | -13 |
| Middle quintile | 32 | -1 | -3 | -3 | -5 | -8 | -15 | -1 | -8 |
| Fourth quintile | 32 | -2 | -4 | -3 | -6 | -9 | -15 | 2 | -6 |
| Top quintile | 23 | -2 | -4 | -3 | -4 | -7 | -11 | 2 | -4 |

**Source:** DYNASIM4 ID981.

**Notes:** The income below the standard measure indicates whether family income can replace at least 75 percent of preretirement earnings and be above 25 percent of the average wage index. People with retirement income above the average wage index have income above the standard. The table includes people age 62 and older and younger adults receiving Social Security benefits.

## Income Gap

Table 11 shows by selected characteristics the average income gap under the BPC proposal among people age 62 and older and adult Social Security disability beneficiaries with income below the standard in 2065. It also shows the percentage change in the income gap from working more, saving more, and adding minimum benefits. Amounts are shown in 2018 price-adjusted dollars. Among those with family income below the standard, the projected average income gap is $13,300 in 2018 price-adjusted dollars. One might expect the income gap to be bigger for lower-income people than for higher-income people, but this is not always the case, because the income standard is higher in absolute dollars for high earners than for low earners. Also, Social Security replaces a lower share of lifetime earnings for high earners than for low earners, thereby leaving other financial resources to fill a bigger share of target retirement income. Still, high earners are less likely to have retirement income below the standard than low earners (table 10), but among top-quintile lifetime earners with income below the standard, the projected average income gap is $21,890 in 2018 price-adjusted dollars, but only $10,340 for bottom-quintile lifetime earners.

Working one more year closes 14 percent of the projected income gap in 2065, but the impact is bigger for top-quintile lifetime earners (20 percent reduction) and people with more work years who are more likely to have earnings after age 61 and delay Social Security claiming. In 2065, saving more closes more of the income gap than working more. Saving an additional 3 percent of earnings compared with the BPC proposal would reduce the income gap 19 percent, while saving an additional 10 percent of earnings would reduce the gap 45 percent. High earners, workers with more work years, and married couples close larger shares of the income gap than low earners, workers with few work years, and unmarried people.

Adding minimum benefits has the biggest impact on reducing the income gap among people with few work years (a 35 percent reduction for people with fewer than 10 years of work) and for bottom-quintile lifetime earners (a 41 percent reduction). These people have lower incomes to be replaced, and the minimum benefit is targeted to these low-income beneficiaries. Because these minimum benefits are funded by benefit reductions for middle- and upper-income earners, that assumption increases income gaps for the highest earners. The “feasible reform” option that combines working longer, saving more, and minimum benefits reduces projected income gaps 41 percent overall and for all subgroups.

TABLE 11

## Average Income Gap by Selected Characteristic and Option in 2065

*People age 62 and older and adult disability beneficiaries with family income below the standard (2018 price-adjusted dollars and percentage change)*

| | | Percentage Change in Income Gap | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Average income gap with BPC | BPC + work 1 more year | BPC + work 2 more years | BPC + work with increased life expectancy | BPC + save 3% (addon) | BPC + save 5% (addon) | BPC + save 10% (addon) | BPC with minimum benefit (payable) | Feasible reform |
| **All** | 13,330 | -14 | -24 | -21 | -19 | -28 | -45 | -12 | -41 |
| **Age** | | | | | | | | | |
| 0-61 | 8,390 | -6 | -8 | -7 | -15 | -22 | -36 | -19 | -28 |
| 62-69 | 14,530 | -26 | -39 | -39 | -20 | -31 | -49 | -15 | -56 |
| 70-74 | 12,650 | -15 | -29 | -28 | -24 | -35 | -54 | -10 | -49 |
| 75-79 | 12,800 | -11 | -17 | -14 | -21 | -32 | -50 | -10 | -38 |
| 80-84 | 13,330 | -6 | -12 | -6 | -18 | -27 | -44 | -11 | -31 |
| 85+ | 14,010 | -3 | -9 | -2 | -10 | -15 | -26 | -8 | -21 |
| **Sex** | | | | | | | | | |
| Female | 13,160 | -13 | -23 | -20 | -17 | -26 | -41 | -11 | -40 |
| Male | 13,510 | -15 | -24 | -22 | -21 | -31 | -49 | -12 | -43 |
| **Education** | | | | | | | | | |
| No high school diploma | 11,840 | -8 | -13 | -12 | -7 | -11 | -20 | -34 | -44 |
| High school graduate | 11,510 | -12 | -22 | -20 | -18 | -28 | -45 | -21 | -46 |
| Some college | 12,950 | -14 | -23 | -21 | -22 | -33 | -52 | -8 | -40 |
| College graduate | 16,250 | -18 | -29 | -25 | -22 | -33 | -51 | 2 | -38 |
| **Race and Hispanic origin** | | | | | | | | | |
| White non-Hispanic | 13,590 | -15 | -26 | -23 | -23 | -34 | -53 | -5 | -40 |
| Black non-Hispanic | 11,950 | -18 | -26 | -24 | -17 | -26 | -43 | -18 | -47 |
| Hispanic | 12,890 | -10 | -18 | -17 | -14 | -22 | -36 | -18 | -40 |
| Other | 15,300 | -15 | -23 | -20 | -16 | -25 | -41 | -12 | -42 |
| **Marital status** | | | | | | | | | |
| Married | 13,910 | -17 | -28 | -26 | -22 | -33 | -52 | -13 | -47 |
| Widowed | 11,370 | -7 | -13 | -8 | -13 | -19 | -30 | 0 | -23 |
| Divorced | 13,320 | -13 | -23 | -20 | -17 | -26 | -41 | -12 | -40 |
| Never married | 13,010 | -10 | -18 | -16 | -16 | -24 | -40 | -13 | -37 |
| **Own work years** | | | | | | | | | |
| 0 - 9 | 14,370 | -7 | -10 | -9 | 0 | 0 | -1 | -35 | -42 |
| 10-14 | 12,050 | -10 | -14 | -11 | -3 | -6 | -11 | -36 | -45 |
| 15-19 | 10,760 | -7 | -13 | -13 | -6 | -10 | -19 | -33 | -43 |
| 20-24 | 11,860 | -8 | -17 | -15 | -9 | -15 | -26 | -29 | -43 |
| 25-29 | 11,290 | -8 | -15 | -15 | -14 | -23 | -39 | -29 | -45 |
| 30-34 | 11,480 | -12 | -21 | -19 | -17 | -26 | -43 | -23 | -46 |
| 35-39 | 12,380 | -13 | -19 | -20 | -22 | -33 | -53 | -15 | -42 |
| 40+ | 14,490 | -18 | -29 | -25 | -24 | -36 | -56 | 0 | -40 |
| **Lifetime earnings quintile** | | | | | | | | | |
| Bottom quintile | 10,340 | -8 | -12 | -11 | -6 | -9 | -18 | -41 | -49 |
| Second quintile | 9,220 | -14 | -23 | -22 | -20 | -30 | -49 | -27 | -50 |
| Middle quintile | 12,610 | -15 | -26 | -24 | -23 | -35 | -56 | -7 | -42 |
| Fourth quintile | 17,320 | -16 | -27 | -24 | -23 | -35 | -56 | 5 | -35 |
| Top quintile | 21,890 | -20 | -31 | -27 | -25 | -37 | -55 | 10 | -34 |

**Source:** DYNASIM4 ID981.

**Notes:** The income gap is the difference between current income and the income standard reported in 2018 price-adjusted dollars. The income standard is the higher of 75 percent of preretirement earnings and 25 percent of the average wage index. People with retirement income above the average wage index have income above the standard. The table includes all people age 62 and older and adult Social Security beneficiaries with income below the standard under the BPC proposal. The percentage changes are calculated relative to the BPC proposal.

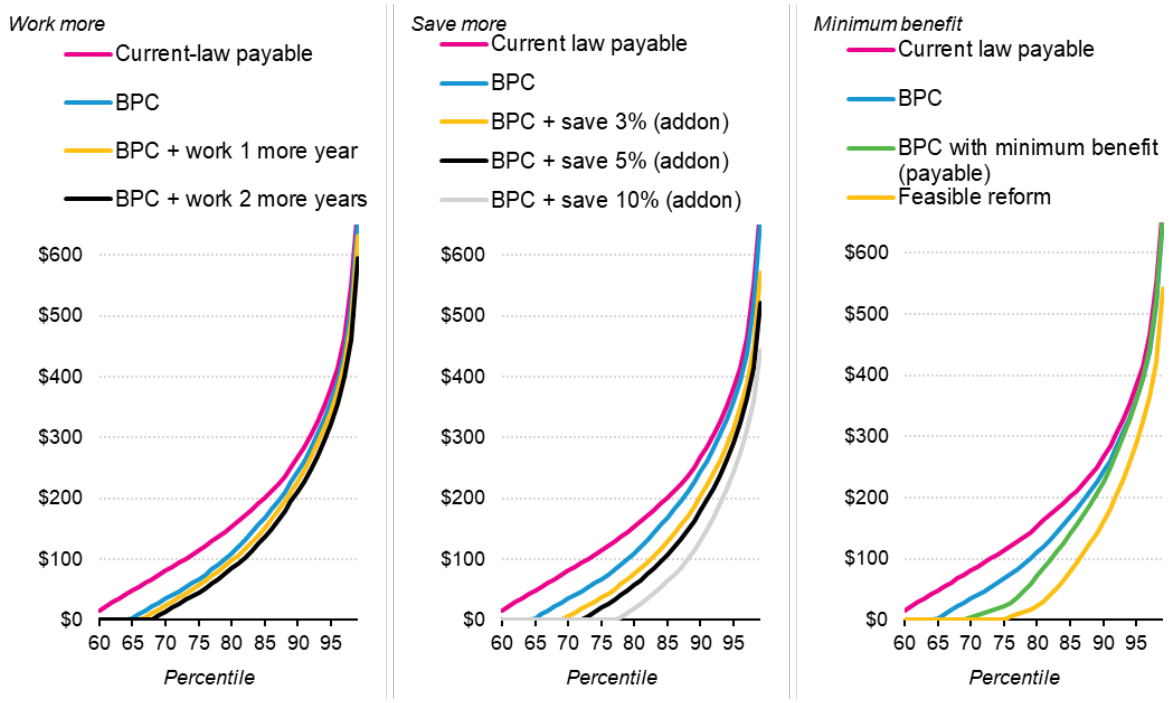
## Retirement Savings Gap

The savings gap is the additional total savings needed to generate enough retirement income to close the income gap. Figure 7 shows the projected distribution of the savings gap among people age 62 and older and adult Social Security disability beneficiaries in 2065 in 2018 price-adjusted dollars. The left panel shows values for the current-law payable scenario, the BPC proposal, and two "work more" options. The middle panel shows values with our three "save more" options, and the left panel shows values including the minimum benefit provisions. For instance, under the feasible reform, 75 percent of beneficiaries in 2065 have no savings gap, and 90 percent have less than a $161,000 gap.

FIGURE 7

**Distribution of the Savings Gap in 2065 by Option**

*People age 62 and older and adult disability beneficiaries (thousands of 2018 price-adjusted dollars*




**Source:** DYNASIM4 ID981.

**Notes:** The savings gap is the additional savings a person would need to generate enough annual income to generate adequate income (replace the higher of 75 percent of preretirement earnings or 25 percent of the average wage index). People with retirement income above the average wage index have income above the standard. The figure includes people age 62 and older and younger adult Social Security beneficiaries.

Figure 6 demonstrated that the BPC proposal substantially reduces the share of aged and disabled people with income below the standard; the right shift in figure 7 shows that the BPC proposal also substantially reduces the savings gap relative to the current-law payable scenario. Adding one more year of work to the BPC proposal makes little difference in the savings gap. Working more allows those

workers to gain one more year of earnings, gain one more year of savings, reduce the number of years accumulated savings needs to support. However, many of the people with income below the standard have earnings below the retirement earnings test exempt amount. We assume that workers with earnings below the retirement-earnings-test exempt amount work but do not delay claiming Social Security benefits. While workers gain the additional year of earnings, these earnings make only modest contributions to their savings gap. The gains from working more are substantial in other ways; they play out in higher income and consumption before retirement and in higher revenues to government that we have not redistributed here.

Unlike working more, where most of the gains accrue before retirement or to government revenues, adding additional savings to the BPC proposal makes substantial contributions to savings available in retirement and reduces the savings gap in 2065 (figure 7, middle panel). Compared with the BPC proposal, saving 3 percent more of earnings beginning in 2021 reduces the share of aged and disabled people with income below the standard by 5 percentage points and reduces the total savings gap 23 percent. Saving 5 percent more of earnings per year reduces the share with income below the standard by 8 percentage points and reduces the total savings gap 35 percent. And saving 10 percent more of earnings per year reduces the share with income below the standard by 14 percentage points and reduces the total savings gap 55 percent.

Adding payable minimum benefits to the BPC proposal reduces the share of aged and disabled people with income below the standard in 2065 by 5 percentage points (figure 7, right panel) and reduces the savings gap 13 percent. The shape of the savings gap distribution rises less steeply compared with the "save more" options because the minimum benefit fills a gap in Social Security benefits relative to the wage-adjusted poverty threshold. The minimum benefit amount gets smaller as the beneficiary's own Social Security benefit rises until the benefit rises above the wage-adjusted poverty threshold. The "feasible reform" option that (1) adds payable minimum benefits to the BPC proposal, (2) adds increased work aligned with gains in life expectancy, (3) adds an employer mandate to offer a deferred retirement plan with an opt out, and (4) has people invest half of their bond allocation to deferred annuities beginning in 2021 reduces the share of aged and disabled people with income below the standard in 2065 by 10 percentage points and reduces the total savings gap 41 percent.

While saving more, working more, and minimum benefits added to the BPC proposal reduce the savings gap, none of these options eliminate the gap, and all make limited improvement for people with the largest savings gaps. Even if someone retires with enough income to replace 75 percent of earnings at age 65, if all income thereafter was in a price-adjusted annuity, they would still find that they had an increasing gap each year relative to a wage-adjusted measure.

## Savings Gap

Table 12 shows the average savings gap among people age 62 and older and younger adults receiving Social Security benefits in 2065 with income below the standard in the BPC proposal shown in 2018 price-adjusted dollars by selected characteristics. Table 12 also shows the percentage of the savings gap closed by working more, saving more, and adding minimum benefits. Under the BPC proposal, among the 35 percent of aged and disabled adults with income below the standard, the average savings gap is $188,900. While the income gap shows the annual income needed to generate adequate income, the savings gap shows how much additional savings is needed to generate enough annual income to close the gap. The savings gap is larger for a younger retiree with the same annual income gap as an older retiree because the younger retiree needs to generate savings to fund more retirement years. High lifetime earners have longer life expectancy than low lifetime earners on average. Their longer life expectancy also increases the number of years accumulated savings must support.

Working one more year reduces the savings gap 17 percent. The gains are greater for workers already with more work years and with higher earnings because both groups are more likely than workers with fewer work years and lower earnings to work past age 61, have an employer-provided pension, and delay Social Security claiming. Saving 3 percent more of earnings reduces the savings gap 20 percent, and saving 10 percent more reduces the savings gap 48 percent. High-income earners and workers with more work years gain more than low-income earners and workers with few work years. Saving 10 percent of a higher earning amount generates more absolute savings than 10 percent of a low earning amount. Each additional work year contributes to the number of years with worker contributions. Younger retirees in 2065 have had more work years under the simulated saving regime than older retirees, so younger retirees are able to accumulate additional savings for more years. For example, an 85-year-old in 2065 was 41 in 2021 when the “save more” option started, while a 65-year-old in 2065 was 21 in 2021 and able to accumulate more savings and investment returns for 20 additional years.

TABLE 12

## Average Savings Gap by Selected Characteristic and Option in 2065

*People age 62 and older and adult disability beneficiaries with family income below the standard*

| | | Percentage Change in Savings Gap | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Average gap with BPC | BPC + work 1 more year | BPC + work 2 more years | BPC + work with increased life expectan | BPC + save 3% (addon) | BPC + save 5% (addon) | BPC + save 10% (addon) | BPC with minimum benefit (payable) | Feasible reform |
| **All** | 188,900 | -17 | -27 | -26 | -20 | -30 | -48 | -12 | -46 |
| **Age** | | | | | | | | | |
| 0-61 | 209,200 | -6 | -8 | -7 | -14 | -21 | -34 | -18 | -27 |
| 62-69 | 272,700 | -26 | -40 | -40 | -20 | -31 | -50 | -14 | -56 |
| 70-74 | 196,100 | -16 | -30 | -29 | -24 | -36 | -55 | -10 | -50 |
| 75-79 | 166,200 | -11 | -18 | -15 | -21 | -32 | -50 | -10 | -39 |
| 80-84 | 137,600 | -6 | -13 | -7 | -18 | -28 | -45 | -11 | -32 |
| 85+ | 95,800 | -3 | -9 | -3 | -11 | -17 | -28 | -9 | -23 |
| **Sex** | | | | | | | | | |
| Female | 179,100 | -16 | -27 | -25 | -18 | -28 | -45 | -13 | -45 |
| Male | 199,600 | -18 | -28 | -26 | -21 | -32 | -50 | -12 | -46 |
| **Education** | | | | | | | | | |
| No high school diploma | 171,800 | -9 | -16 | -15 | -8 | -12 | -22 | -34 | -46 |
| High school graduate | 173,200 | -15 | -25 | -24 | -19 | -29 | -47 | -20 | -48 |
| Some college | 185,500 | -17 | -27 | -26 | -23 | -34 | -54 | -9 | -44 |
| College graduate | 217,000 | -23 | -35 | -32 | -23 | -35 | -55 | 1 | -44 |
| **Race and Hispanic origin** | | | | | | | | | |
| White non-Hispanic | 190,200 | -19 | -31 | -28 | -24 | -36 | -56 | -6 | -45 |
| Black non-Hispanic | 172,500 | -20 | -29 | -27 | -18 | -28 | -45 | -20 | -52 |
| Hispanic | 187,700 | -13 | -22 | -21 | -15 | -23 | -38 | -18 | -43 |
| Other | 208,600 | -18 | -29 | -26 | -18 | -28 | -44 | -12 | -47 |
| **Marital status** | | | | | | | | | |
| Married | 215,800 | -20 | -32 | -30 | -23 | -34 | -53 | -13 | -50 |
| Widowed | 102,800 | -11 | -18 | -15 | -15 | -23 | -37 | -2 | -31 |
| Divorced | 176,400 | -16 | -26 | -24 | -18 | -27 | -43 | -13 | -44 |
| Never married | 184,100 | -12 | -19 | -18 | -16 | -25 | -41 | -14 | -40 |
| **Own work years** | | | | | | | | | |
| 0 - 9 | 207,500 | -7 | -11 | -11 | 0 | 0 | -2 | -34 | -43 |
| 10-14 | 188,600 | -11 | -14 | -13 | -4 | -6 | -13 | -35 | -45 |
| 15-19 | 166,200 | -10 | -14 | -14 | -7 | -11 | -21 | -31 | -42 |
| 20-24 | 175,600 | -10 | -19 | -18 | -10 | -16 | -28 | -28 | -45 |
| 25-29 | 170,800 | -12 | -20 | -19 | -15 | -24 | -41 | -29 | -47 |
| 30-34 | 174,000 | -12 | -22 | -21 | -18 | -28 | -46 | -22 | -45 |
| 35-39 | 191,100 | -15 | -24 | -24 | -23 | -35 | -56 | -14 | -44 |
| 40+ | 194,700 | -22 | -34 | -32 | -26 | -39 | -60 | -1 | -46 |
| **Lifetime earnings quintile** | | | | | | | | | |
| Bottom quintile | 150,800 | -9 | -15 | -14 | -6 | -10 | -19 | -41 | -51 |
| Second quintile | 139,600 | -16 | -26 | -25 | -21 | -31 | -51 | -25 | -49 |
| Middle quintile | 186,700 | -18 | -29 | -28 | -24 | -36 | -58 | -6 | -44 |
| Fourth quintile | 243,300 | -19 | -32 | -29 | -25 | -37 | -59 | 5 | -40 |
| Top quintile | 279,800 | -25 | -39 | -35 | -28 | -41 | -60 | 8 | -43 |

**Source:** DYNASIM4 ID981.

**Notes:** The savings gap is the amount of additional saving needed to generate sufficient income up to the standard expressed in 2018 price-adjusted dollars. The table includes people age 62 and older and adult Social Security beneficiaries with income below the standard under the BPC proposal. The percentage changes are calculated relative to the BPC proposal.

Minimum benefits continue to improve retirement adequacy for low earners (a 41 percent reduction in the savings gap) and beneficiaries with fewer work years (a 34 percent reduction for beneficiaries with fewer than 10 work years). Because the minimum benefits are assumed in these examples to be paid for by reducing Social Security benefits for middle- and higher-income beneficiaries, the minimum benefit provision alone increases the savings gap for people in the top two lifetime-earnings quintiles. When we combine more work, more saving, deferred annuity investment, and minimum benefits, the overall average savings gap declines 46 percent. Retirees across all subgroups gain from the reform. Whether through higher savings, higher earnings, insured investment returns, or enhanced Social Security benefits, we project that these combined reforms substantially increase retirement incomes and reduce savings gaps for most older Americans and Social Security disability beneficiaries.

## Discussion and Conclusions

Our simulations provide estimates of the impact of working more and saving more by programing in behavioral changes without regard to what reforms might induce these behavioral changes. Our results show that saving more and working more improve Social Security finances and increase retirement incomes. Saving more and working more, however, have limited impact on low earners and people with few work years. Well-targeted Social Security and SSI reforms can boost retirement incomes for these vulnerable groups.

It is not only Social Security reform that might induce more work at later ages; a turnaround in the extent to which Americans work in older ages began in the early 1990s and does not appear to be related simply to changes in the Social Security program. In particular, the decline in the birth rate leads to a substantial increase in the demand for older workers because their supply continues to increase significantly relative to the supply of younger workers (Steuerle and Quakenbush 2012). In the simplest of all examples, if the birth rate would fall to zero, then after 65 years, people over age 65 would occupy the entire work force. Though an exaggerated example, the same types of pressures exist from the substantial decline in the birth rate that has occurred already. The birth rate didn't fall to zero, but it did fall by about one-third between the 1950s and late 1960s and has continued to fall a bit since then.

More years of work produce more income; greater private savings as people save more and draw down their assets for fewer years; fewer years of dependence on government; and greater Social Security, Medicare, and income tax revenue that can support higher annual and lifetime benefits at any tax rate (Butrica, Smith, and Steuerle 2007). More work at later ages paired with delayed Social Security

claiming also increases annual benefits both by increasing average lifetime earnings and by reducing Social Security's actuarial reduction or increasing the delayed retirement credits, generating permanently higher annual benefits. However, most of the gains in earnings from more years of work accrue to earners in years before retirement (when they likely spend much of those earnings) and to government revenues. We did not reallocate improvements in the government's fiscal posture, but to the extent that some of those additional resources are used to support retirement, the improvements in income during retirement years are understated.

California, Connecticut, Illinois, Maryland, and Oregon have all recently passed legislation that requires certain employers, depending on firm size, to offer workers a retirement saving plan with no employer contribution. These plans automatically enroll workers to a default investment but allow workers to opt out and to alter their saving rate. They are designed to expand pension coverage to workers but with minimal cost to employers. Wider adoption of similar employer mandates could boost private retirement savings (Butrica and Smith 2016). Employers are increasingly adopting automatic enrollment, automatic escalation, and target-date funds in their DC plans to help bolster saving among workers in firms that already offer pension plans. Additional saving incentives for low-income workers, such as refundable tax credits or government saving matches, could help boost retirement savings.

Saving more and working more both benefit higher earners and workers with more work years than they benefit lower earners and workers with few work years. Many people who end up experiencing poverty in retirement do so because they work relatively few years, often because they have poor health, face caregiving responsibilities, or are immigrants with limited years of covered earnings (Favreault 2010). Policies that encourage more work or more saving by themselves will likely leave these vulnerable groups with inadequate retirement income. But as we show in this report, well-targeted Social Security minimum benefits and enhanced SSI can help fill this gap.

We recognize that these types of simulations depend upon a number of assumptions, such as future rates of return and what the appropriate standard for replacement income ought to be. Regardless, this type of exercise helps reveal the opportunities and limitations of policies even when they succeed in encouraging people to work longer as they live longer and save more. The exercise also opens up questions about the design of these policies. For instance, if the replacement standard should be made relative to average earnings and new goods and services that those higher earnings can buy, then policymakers might want to look at adjusting lifetime Social Security benefits so that a larger share of those benefits are available in later years of retirement when, as these data show, annual gaps between the replacement standard and income tend to grow.

# Appendix: Pension and Retirement Account Methods

DYNASIM projects pensions from employer-sponsored DB plans, cash-balance plans, and DC retirement accounts, including 401(k) and 403(b) plans, Keoghs, and IRAs. Starting information about pension coverage on current and past jobs, pension contribution rates, and account balances comes from self-reported data from the Survey of Income and Program Participation (SIPP). DYNASIM projects employer characteristics and employer benefits (pensions and health insurance) at each simulated job change.

DYNASIM projects private DB pensions by using DB plan formulas from the Pension Benefit Guaranty Corporation's pension insurance modeling system. These DB plan formulas are randomly assigned to DB participants based on broad industry, union status, and firm size categories, as well as an indicator of whether the firm offers both DB and DC plans. For government pensions, DYNASIM uses actual benefit formulas to calculate benefits for federal government workers and military personnel; to estimate pension benefits for state and local government workers, DYNASIM assigns workers to one of 481 state and local government pensions from the State and Local Employee Pension Plan database based on the workers' state and job sector (Urban Institute 2016).

Projected DB pension information reflects pension plan structures from the SIPP data as of December 2008, including DB pension plan freezes and conversions to cash-balance plans. Based on historic data, DYNASIM assumes 49 percent of private-sector nonunion DB pensions and 20 percent of private-sector union DB pensions will experience a freeze between 2008 and 2017. Among the private-sector frozen plans, 80 percent of union plans and 53 percent of nonunion plans experience a soft freeze; the other frozen plans experience a hard freeze. It also assumes 57 percent of state and local pensions will experience a soft freeze between 2008 and 2017 (Department of Labor 2020; 2021).

DYNASIM adjusts worker DB pensions and survivor pensions after initial pension receipt for COLAs. DYNASIM varies the probability of selecting a joint and survivor annuity by gender, education, family health status, wealth, and expected pension income. It also varies DB COLAs by employment sector (i.e., private, federal government, and state and local government).

Most DB plan formulas assign pension income as a function of workers' earnings and job tenure. DB pension benefits are capped by the statutory limitations under Section 415(b)(1)(A). Most private-

sector workers must complete five years of service before they vest in the DB plan. Changes in job tenure directly affect expected DB pension income.

DYNASIM projects retirement accounts based on annual contributions to investment accounts and accumulated investment returns. DYNASIM starts with the self-reported SIPP retirement account balances. Because of documented deficiencies in the SIPP asset data (Czajka, Jacobson, and Cody 2003; Smith, Favreault, and Cashin 2005), we adjust asset balances in retirement accounts—as well as financial assets outside of retirement accounts—in DYNASIM's starting SIPP sample to align with asset distributions from the 2007 Survey of Consumer Finances.

DYNASIM simulates investment returns for stock, long-term corporate bond, and long-term government bond portfolios annually using historical price changes and returns through 2020, including the 2008 stock market crash and subsequent recovery. Investment experience varies for each individual because the model sets rates of return stochastically, using historical means and standard deviations. After 2020, DYNASIM assumes stocks and bonds resume their historic average real returns (6.5 percent for stocks, 3.2 percent for corporate bonds, 2.4 percent for government bonds), and standard deviations of 17.28 percent for stocks and 2.14 percent for bonds. The 6.5 percent real return on stocks reflects a capital appreciation of about 3.5 percent and a dividend yield of around 3.0 percent, in line with the long-term performance of the S&P 500. The model subtracts one percentage point from annual stock and bond returns to reflect administrative costs.

Each individual is assigned a specific risk tolerance based on a multinomial logistic model estimated on 1998 to 2007 Survey of Consumer Finances data. An individual's share of retirement account assets invested in equities varies by age and risk tolerance, with high-risk and younger individuals investing more in equities than low-risk and older individuals.

DYNASIM assigns a growing share of workers to invest in target-date funds over time by using prevalence rates from the Employee Benefits Research Institute (Copeland 2011). DYNASIM assigns target-date investors to specific target-date funds based on the dollar-weighted share of the 40 largest target-date funds (Morningstar 2012, table 3). Workers with target-date funds use the stock and bond portfolio mix of their assigned fund at each age. All investors rebalance portfolios annually to preserve the target mix of stocks and bonds.

DYNASIM assumes 40 percent of firms offering DC plans implement automatic enrollment beginning in 2008. Automatic enrollment increases the probability new hires will participate in DC plans in the first year on the job, but workers can still opt out. Automatic enrollment affects new hire participation, but the participation probability is higher for workers who contributed in a prior year, so

automatic enrollment increases participation on average beyond the first year on the job. DC participation probability also increases with age, the earnings of a worker and his or her spouse, and job tenure, but it decreases for workers with more dependents. Like DC participation, simulated DC contributions amounts among contributors increase with age, the earnings of a worker and his or her spouse, job tenure, and for workers who contributed in the past two years, but contributions decrease for workers with more dependents. Contribution amounts are lower in the first year on each job, reflecting waiting periods and delays in enrollment, and are higher for workers who get an employer matching contribution.

DYNASIM allows some workers to cash out retirement account balances with job changes or job losses. Younger workers, workers with lower account balances, and workers who lose their jobs are more likely to cash out retirement account balances than are older workers, those with higher balances, and those who move from one job to another without a break in employment. High unemployment contributes to lower lifetime DC pension savings through workers' hardship withdrawals and loss of contributions (and lost returns on those lost contributions) when out of work.

DYNASIM's pension projections allow the user to select alternative future pension assumptions, including a more rapid shift from DB pensions to DC pensions as well as expansions of DC plans to firms not currently offering pensions (Butrica and Smith 2016). Users can specify investment choice (Roth IRA, traditional IRA, 401(k), Roth 401(k)), firm size thresholds, default investment rate, share of participants that select the default investment, portfolio allocation (target-date fund, Treasury G fund, or a blend of stocks and bonds). DYNASIM assumes investments to state mandated plans are invested in Roth IRAs and other DC assets are invested in tax-deferred 401(k)-type plans.

DYNASIM models the state mandated pension plans for California, Connecticut, Illinois, Maryland, and Oregon. These states have passed legislation that requires certain employers, depending on firm size, to offer workers a retirement saving plan with no employer contribution. These plans automatically enroll workers to a default investment but allow workers to opt out and to alter their saving rate. They are designed to expand pension coverage to workers with minimal administrative cost to employers. Contributions are made to state-administered Roth IRA saving plans through payroll deductions. Contributions are made in after-tax dollars and are subject to IRA contribution limits.

In retirement, workers spend financial and retirement account savings using a spend-down model estimated from pooled SIPP data linked to Social Security Administration earnings and benefit data (Smith and Toder 1999). We assume workers spend first from their taxable accounts and then from their retirement accounts, subject to IRS minimum distribution requirements after age 70.

# Notes

[1] Based on the 2020 Social Security trustees' assumptions adjusted for the COVID-19 pandemic (Goss and Glenn 2020).

[2] T. Rowe Price, "Income Replacement in Retirement," Retirement Perspectives, May 2019, https://www.troweprice.com/financial-intermediary/us/en/insights/articles/2018/q2/income-replacement-in-retirement.html.

[3] About 80 percent of people age 65 and older own a home (Joint Center for Housing Studies 2018). Imputed rent represents the net savings in rent from owning a home after the costs of interest and home maintenance.

[4] National average wage index is the average wage of workers based on the 2020 Social Security Trustees intermediate cost assumptions. See "Table VI.G6—Selected Economic Variables, Calendar Years 2019-2095" in Board of Trustees (2020).

[5] We use a 2.3 percent real discount rate based on 2020 Social Security Trustees intermediate cost assumptions. See "Table VI.G6—Selected Economic Variables, Calendar Years 2019-2095" in Board of Trustees (2020).

[6] We only use the BPC Social Security proposal here; we substitute different private retirement income assumptions for our private retirement income proposals.

[7] Because benefits in Social Security currently are scheduled to rise forever faster than GDP, both because of wage indexing and because of failure to adjust retirement ages for longevity, as well as additional substantial growth because of the decline in fertility, eventually even a 100 percent tax rate could not cover them. Hence, in later decades, as a reformed level of benefits compounds at a sustainable rate, the gap between that rate and an unsustainable rate—the savings achieved on the benefit side—also compounds toward infinity. Thus, under any sustainable reform, the benefit "cuts" in real terms eventually become larger than the tax increases.

[8] Women born from 1973 to 1991 work one more year, women born from 1992 to 2013 work two more years, and women born from 2014 to 2037 work three more years compared with women born in 1956 who survive to age 65.

[9] The PEPs were payable using assumption used by Steuerle and Smith (2021), but delaying the tax provisions in the BPC proposal and the lower assumed real wage growth included in the 2020 Social Security Trustees assumptions cause the trust fund to be depleted by 2087.

[10] We assumed moderate rates of return on savings to account partly for any general equilibrium effect on rates of return from an increase in aggregate US saving.

# References


Biggs, Andrew, and Glenn R. Springstead. 2008. "Alternate Measures of Replacement Rates for Social Security Benefits and Retirement Income." *Social Security Bulletin* 68 (2).

Benz, Christine. 2012. "Digging Into the 80% Rule for Income Replacement in Retirement." New York: Morningstar.

Bipartisan Policy Center. 2016. *Securing Our Financial Future: Report of the Commission on Retirement Security and Personal Savings*. Washington DC: Bipartisan Policy Center.

Butrica, Barbara, Karen E. Smith, and Eugene Steuerle. 2007. "Working for a Good Retirement," in *Government Spending on the Elderly*, edited by Dimitri B. Papadimitriou. New York: Palgrave Macmillan.

Butrica, Barbara A. and Karen E. Smith. 2016. "The Potential Impact of Mandated Employer Pension Programs on Retirement Savings." Boston: Center for Retirement Research at Boston College.

Butrica, Barbara A., Karen E. Smith, and Howard Iams. 2012. "This is Not Your Parent's Retirement: Comparing Retirement Income across Generations." *Social Security Bulletin* 72 (1).

Board of Trustees (Board of Trustees, Federal Old-Age and Survivors Insurance and the Federal Disability Insurance Trust Funds). 2020. *The 2020 Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Federal Disability Insurance Trust Funds.* Washington, DC: Board of Trustees.

Clingman, Michael, and Kyle Burkhalter. 2020. "Scaled Factors for Hypothetical Earnings Examples Under the 2020 Trustees Report Assumptions." Actuarial Note 2020.3. Woodlawn, MD: Social Security Administration.

Congressional Budget Office. 2020. "The Distribution of Household Income, 2017." Washington, DC: Congressional Budget Office.

Copeland, Craig. 2011. "Target-Date Fund Use in 401(k) Plans and the Persistence of Their Use, 2007–2009." Issue Brief 361. Washington, DC: Employee Benefits Research Institute.

Cosic, Damir, Richard Johnson, Karen E. Smith, and Aaron R. Williams. 2019. "Nine Charts about the Future of Retirement." Washington, DC: Urban Institute.

Czajka, John L., Jonathan E. Jacobson, and Scott Cody. 2003. "Survey Estimates of Wealth: Comparative Analysis and Review of the Survey of Income and Program Participation." Woodlawn, MD: Social Security Administration.

DeNavas-Walt, Carmen, Bernadette D. Proctor, and Jessica Smith. 2007. "Income, Poverty, and Health Insurance Coverage in the United States: 2006." P60-233. Washington, DC: US Census Bureau.

Department of Labor. 2020. "National Compensation Survey: Employee Benefits in the United States, March 2020." Bulletin 2793. Washington, DC: Bureau of Labor Statistics.

Department of Labor. 2021. "Private Pension Plan Bulletin Historical Tables and Graphs 1975-2018." Washington DC: US Department of Labor, Employee Benefits Security Administration.

Favreault, Melissa. 2010. "Why Do Some Workers Have Low Social Security Benefits?" Retirement Policy Program Discussion Paper 10-03. Washington, DC: Urban Institute.

Favreault, Melissa, and Nadia Karamcheva. 2011. How Would the President's Fiscal Commission's Social Security Proposals Affect Future Beneficiaries? Washington, DC: Urban Institute.

Favreault, Melissa M., Karen E. Smith, and Richard W. Johnson. 2015. "The Dynamic Simulation of Income Model Version 4 (DYNASIM4): An Overview." Washington, DC: Urban Institute.

Ghilarducci, Teresa, and Hamilton James. 2016. "A Comprehensive Plan to Confront the Retirement Savings Crisis." New York: The New School, Schwartz Center for Economic Research.

Ghilarducci, Teresa, Michael Papadopoulos, Anthony Webb, and Wei Sun. 2018. "'Catch-Up Contributions': An Equitable and Affordable Solution to the Retirement Savings Crisis." *Public Policy and Aging Report* 28 (Suppl 1): S4–14.

Ghilarducci, Teresa, Michael Papadopoulos, and Anthony Webb. 2017. "Inadequate Retirement Savings for Workers Nearing Retirement." New York: The New School for Social Research, Schwartz Center for Economic Policy Analysis.

Goss, Stephen, Michael Clingman, Alice Wade, and Karen Glenn. 2014. "Replacement Rates for Retirees: What Makes Sense for Planning and Evaluation?" Actuarial Note 155. Woodlawn, MD: Social Security Administration.

Goss, Stephen. 2016. "Bipartisan Policy Center's Commission on Retirement Security and Personal Savings." Woodlawn, MD: Social Security Administration, Office of the Chief Actuary.

Goss, Stephen, and Karen Glenn. 2020. "Updated Baseline for Actuarial Status of the OASI and DI Trust Funds, Reflecting Pandemic and Recession Effects—INFORMATION." Woodlawn, MD: Social Security Administration, Office of the Chief Actuary.

Internal Revenue Service. 2020. "SOI Tax Stats - Individual Information Return Form W-2 Statistics." Washington, DC: Internal Revenue Service.

Johnson, Richard W., and Karen E. Smith. 2020. "Comparing Democratic and Republican Approaches to Fixing Social Security." Washington, DC: Urban Institute.

Johnson, Richard W., Karen E. Smith, and Damir Cosic. 2016. "Will Living Standards Decline for Future Retirees? Evidence from DYNASIM4." Washington, DC: Urban Institute.

Joint Center for Housing Studies. 2018. "Housing America's Older Adults 2018." Cambridge, MA: Joint Center for Housing Studies of Harvard University.

MacDonald, Bonnie-Jeanne, Lars Osberg, and Kevin D. Moore. 2016. "How Accurately Does 70% Final Employment Earnings Replacement Measure Retirement Income (in) Adequacy? Introducing the Living Standards Replacement Rate (LSRR)." *ASTIN Bulletin: The Journal of the IAA* 46 (3): 627–76.

Morningstar. 2012. "Target-Date Series Research Paper: 2012 Industry Survey." Chicago: Morningstar.

Smith, Karen E. and Eric Toder. 1999. "Projecting Retirement Incomes to 2020," in Eric Toder, Cori Uccello, John O'Hare, Melissa Favreault, Caroline Ratcliffe, Karen Smith, Gary Burtless, and Barry Bosworth. 1999. *Modeling Income in the Near Term - Projections of Retirement Income Through 2020 for the 1931-60 Birth Cohorts.* Washington, DC: Urban Institute.

Smith, Karen E., Melissa Favreault, Damir Cosic, and Richard Johnson. 2018. "DYNASIM4 Validation Report: Comparing DYNASIM4 Outcomes with Administrative Data, Government Forecasts, and Scholarly Literature." Washington DC: Urban Institute.

Smith, Karen E., Richard W. Johnson, Melissa M. Favreault. 2020. "Five Democratic Approaches to Social Security Reform: Estimated Impact of Plans from the 2020 Presidential Campaign." Washington, DC: Urban Institute.

Smith, Karen E., Melissa Favreault, and David Cashin. 2005. *Modeling Income in the Near Term 4*. Washington, DC: Urban Institute.

Social Security Administration. 2004. "The Future of Social Security." Publication 05-10055. Woodlawn, MD: Social Security Administration.

———. 2019. *Annual Statistical Supplement to the Social Security Bulletin, 2019*. Woodlawn, MD: Social Security Administration.

Steuerle, C. Eugene and Karen E. Smith. 2021. "First Things First: How Social Security Reform Can Eliminate Old-Age Poverty." Washington, DC: Urban Institute.

Steuerle, Eugene, Christopher Spiro, and Adam Carasso. 2000. "Measuring Replacement Rates at Retirement." Straight Talk on Social Security and Retirement Policy no. 24. Washington, DC: Urban Institute.

Steuerle, C. Eugene, and Caleb Quakenbush. 2012. "Correcting Labor Supply Projections for Older Workers Could Help Social Security and Economic Reform." Washington, DC: Urban Institute.

Urban Institute. 2016. "The State of Retirement: Grading America's Public Pension Plans: Urban Institute's State and Local Employee Pension Plan Database." Washington DC.

U.S. Census Bureau. 2020. "Income, Poverty and Health Insurance Coverage in the United States: 2019." CB20-145. Washington, DC: US Census Bureau.

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