An Analytical Framework for Strengthening Social Security

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ABSTRACT

Social Security faces a significant challenge, but by no means its only one, in its projected financing shortfall. The program's uncontrolled further growth in the absence of reform would reduce its effectiveness in supporting a coherent income security policy. If Social Security is to serve future generations as it has current and past ones, policymakers must not only eliminate its financial shortfall but also ameliorate other problematic effects. Among the problematic trends requiring correction are the following ones: Social Security currently stands to, on balance, substantially reduce future workers' lifetime incomes; its rising costs depress the after-tax incomes of workers compared to those of program beneficiaries; it deters workforce participation and personal saving; and, in many instances, it redistributes income from those who have less to those who have more. No single reform to Social Security can simultaneously accomplish all the objectives of improving its financial condition, achieving a sustainable rate of cost growth, improving intergenerational equity, restoring work and saving incentives, and better targeting benefits toward the households with the greatest need. A balanced package of reforms, however, can include individual provisions pursuant to these various objectives and, in combination, progress toward all of them.

JEL codes: H53, I38

Keywords: Social Security, OASI, trust funds, Social Security trust funds, sustainable solvency, Social Security trustees, trustees report, intergenerational equity, insolvency, actuarial imbalance, self-financing, population aging

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INTRODUCTION

Social Security affects the economic lives of individual Americans more than any other single federal program because of its nearly universal coverage scope, the substantial benefits it provides, and the substantial financing burdens it imposes. The program currently faces large and growing financial shortfalls, as documented in the annual projection reports of its trustees.[1] These financial shortfalls consist of a substantial actuarial deficit in each of Social Security's trust funds over the trustees' long-range (75-year) valuation period and of annual cash-flow deficits that grow larger toward the end of the period. These deficits must be closed if Social Security is to be kept financially sound. Closing them will require federal lawmakers to enact significant financing corrections, most likely a combination of eligibility-age changes, benefit-growth restraints, and revenue increases. Yet, as daunting as Social Security's financial prospects are, they are only a portion of the challenges facing the program and everyone who participates in it.

The contours of Social Security operations create concerns that extend well beyond the task of restoring Social Security to a path of sustainable solvency. The program's long-term solvency challenge is rooted in the fact that its costs are growing faster than Americans' capacity to finance them—meaning that a strategy of periodic tax increases can only buy time without addressing the problem's underlying cause.[2] As this study explains, program cost growth carries other troubling implications as well. For example, per capita Social Security payment obligations are growing faster than workers' earnings net of Social Security taxes. This growth means, in turn, that without course corrections, Social Security will increasingly depress the living standards of Americans during their working years, compared to the living standards Social Security promises to support after these Americans depart the workforce to become beneficiaries. Social Security's growth rate also precipitates other trends that many Americans might regard as perverse. For example, as successive generations of American workers earn higher incomes over time, they become more dependent on the program rather than less. This outcome clashes with a consensus policy value upheld in other contexts—namely, that Social Security should more greatly augment the income of poorer individuals than of wealthier ones.

This study documents other challenges confronting Social Security policymakers, including the fact that younger generations, on balance, stand to lose substantial net income through Social Security over their lifetimes, even if they receive all currently scheduled (sometimes referred to as "promised") benefits.[3] This

problem cannot be corrected without Social Security's current participants making a contribution to the financing solution. For similar reasons, intergenerational inequities under Social Security would be exacerbated if benefits for today's participants were increased, as some political advocates have proposed.

Other policy challenges facing Social Security include the fact that its current tax and benefit schedules are designed in such a way that they dampen individual retirement saving as well as workforce participation; the latter is especially true for Americans of late middle age who may be contemplating whether to extend their working careers. These disincentives create a number of adverse consequences for individuals as well as for the nation as a whole, and act as a drag on economic growth while inducing personal decision-making that diminishes individuals' long-term retirement security. In addition to these problems, a significant amount of the income redistribution facilitated by Social Security does not serve a clear policy purpose. Although the program as a whole progressively redistributes income from richer Americans to poorer ones, it also contains pockets of regressive redistribution that operate in the opposite direction.

There are strong political barriers to enacting cost constraints sufficient to balance program finances by themselves without the need for additional dedicated revenues. Accordingly, any bipartisan legislation to shore up Social Security finances is likely to include at least some increase in program tax collections. That said, this study concludes that policy considerations argue for concentrating as much of the solution on the cost-containment side as is politically practicable. It will be easier to require those whose incomes have increased the most in recent years to contribute to the solution if the rate of benefit growth is moderated.

Moreover, a leaner Social Security program with less aggregate cost growth not only would be easier to finance, but also could better serve younger generations, preserve work and saving incentives, and more precisely target benefits on the households of greatest need. In contrast, relying primarily on additional tax collections to sustain Social Security would retain or exacerbate many of its most problematic features, including work disincentives, untenable cost growth rates, and inequitable treatment of younger generations.

The following sections of this study summarize some of the fundamental policy challenges facing Social Security, detailing their causes in current statutory provisions as well as showing opportunities to reform them in future legislation. The final section of the study discusses how provisions addressing the various challenges could be combined into a comprehensive Social Security plan that not only closes its financial shortfall but also enables the program to better serve participating Americans.

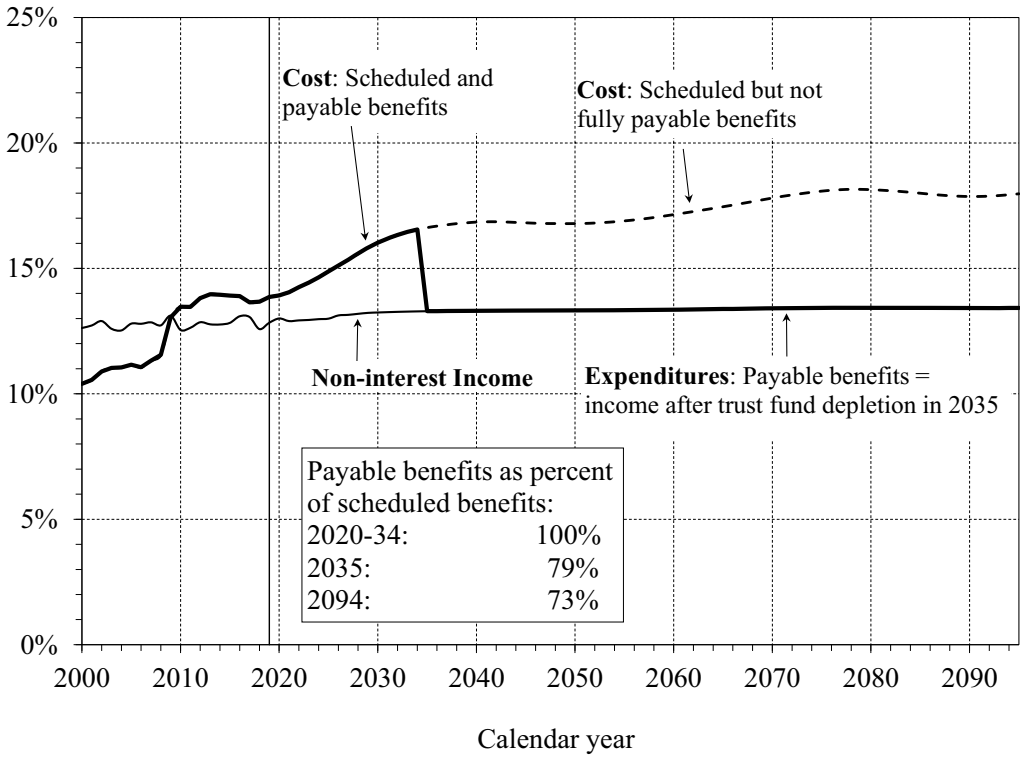
ADDRESSING SOCIAL SECURITY'S FINANCING SHORTFALL

For several decades running, the annual reports of Social Security's trustees have identified a substantial financial shortfall facing the program that threatens to precipitate its future insolvency as well as to suddenly disrupt the program's capacity to make full and timely benefit payments (see figure 1, which is reproduced directly from the most recent trustees' report).[4] The trustees' reports containing these sobering projections were developed through the statutory process established in the Social Security Act for measuring and reporting on the program's financial condition.[5] However, the trustees are by no means alone in projecting future insolvency for Social Security's trust funds. Other forecasts, such as those of the Congressional Budget Office (CBO), foresee an even larger and more immediate Social Security financing shortfall.[6] In addition, it is likely that the economic disruptions caused by the COVID-19 crisis will further worsen Social Security's financing shortfall beyond what the 2020 trustees' report reveals.

It is important to understand what exactly Social Security's financing shortfall signifies, what it portends, and why it matters. Social Security's unique role in federal government economic policy—and indeed in American politics—stems from the particulars of its financing design. This financing basis differs in important respects from those of other federal programs.

Instead of Social Security spending being financed from the federal government's general fund and thus implicitly paid for with general revenue sources such as individual and corporate income taxes, its benefits are instead paid from two distinct trust funds: one for Old-Age and Survivors Insurance (OASI) benefits and the other for Disability Insurance (DI) benefits. These trust funds typically receive revenues only from "contributions" (i.e., payroll taxes) paid by or on behalf of American workers, from interest earnings on any previous surpluses and—to a much smaller extent—from the income taxation of Social Security benefits. There have been occasional breaches of this contributory financing principle, most notably the roughly $225 billion transferred from general government revenues to the trust funds to offset the revenue losses caused by a temporary Social Security payroll tax cut in 2011–2012.[7] But generally and for the most part, the revenues that finance Social Security benefits come from payroll taxes assessed on the earnings of participating American workers and not from other revenue sources of the US government.

FIGURE 1. SOCIAL SECURITY INCOME, COSTS, AND EXPENDITURES EXPRESSED AS A PERCENTAGE OF US WORKERS' TAXABLE WAGES



Source: Figure II.D2 in Social Security Board of Trustees, *2020 Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Federal Disability Insurance Trust Funds*, 2020, 13.

Under federal law, all Social Security program spending must be financed from its trust funds, which means that the program's total spending authority is limited to the amounts of revenues credited to these funds. This restriction does not necessarily limit program spending in any specific year to the amount of tax revenue collected that year; indeed, annual spending can and sometimes does exceed annual tax revenue if the trust funds carry over a positive net balance from the previous year that can be drawn upon to finance a subsequent cash-flow deficit. Social Security has faced such cash deficits since 2010, when annual payment obligations began to exceed annual dedicated tax collections.[8] The statutory requirement that all Social Security payments be financed from trust fund assets thus creates only an aggregate limitation over time, serving to ensure that on average across the years, though not necessarily in any single year, outgoing payments and incoming revenues are kept in balance.

Were the reserves of Social Security's trust funds ever to be completely depleted, program spending would then be restricted to the amounts that could be financed from incoming tax revenues as they are collected. In practical effect, this state of affairs would mean that upon trust fund depletion, benefit payments would be effectively reduced through the mechanism of delay, because the Social Security Administration (SSA) would need to postpone sending benefit

checks until sufficient tax revenues arrived to cover them. Under current projections, for example, aggregate Social Security retirement benefit payments in 2034 would be suddenly reduced through such payment delays by 24 percent.[9]

The point of this numerical illustration is not that federal lawmakers are likely to allow such sudden, severe benefit reductions to occur; they aren't and indeed never have done so. The illustration serves instead to quantify the substantial gap that must be closed if Social Security is to function in the future under the financing principles by which it has been operated in the past. Or, framed in a more negative light, this oft-cited illustration quantifies the size of the financing gap that, once it has grown larger than lawmakers are willing to close (or to countenance closing automatically, by payment delays that effectively cut benefits), would force an abandonment of Social Security's longstanding financing design. Such a change would dismantle the foundation of Social Security's historical and central role in supporting Americans' income security.

It is occasionally tempting to dismiss Social Security's trust fund financing system as a mere accounting convention lacking economic significance. It is true that Social Security's net effects on taxpayers, beneficiaries, and the federal budget are functions solely of the revenues it collects and the payments that it makes. It is further true that these revenues and payments would have exactly the same fiscal effects irrespective of whether they are routed through a trust fund. However, taking these observations out of context neglects important ways in which the trust fund system influences government behavior.

The statutory requirement that trust fund obligations and revenues be kept in balance mandates continual monitoring of Social Security's financial operations and occasionally forces financing corrections not required of programs financed from the government's general fund. The most notable example of such corrections is the 1983 Social Security legislation that increased program taxes, lowered benefit outlays, and gradually raised eligibility ages.[10] In other words, routing federal program income and outlays through a trust fund does not by itself change their economic and fiscal effects, but the mechanism can nevertheless restrict the amounts of such income and outlays. At the same time, as the following paragraphs describe, the trust fund financing construct also contributes to the consistency, predictability, and reliability of benefit payments.

Social Security's financing design is thus not a merely incidental feature of the program but has been, since its inception, central to its functioning. It is no accident that Social Security has long been called the "third rail" of American politics ("touch it, and you die"). Its financing construct has created substantial political as well as procedural barriers that inhibit lawmakers from treating Social Security as just another interchangeable part of the federal budget that can be adjusted as overall fiscal and economic conditions warrant. Its trust fund framework shields participants from the frequent revisions of benefit levels and eligibility rules that generally occur in programs financed from the government's general fund.

For one example of a procedural barrier to altering Social Security, the Congressional Budget Act's point of order 310(g) prohibits making any such changes in budget reconciliation legislation.[11] As for political inhibitions, even President Obama's bipartisan Fiscal Responsibility (Simpson-Bowles) Commission felt compelled to

issue its final report of recommendations with its tables "excluding Social Security reform," despite the enormous fiscal benefits of such reform.[12] The commission's presentation was adopted to head off any accusations that Social Security was being targeted as part of the broader budgetary corrections that were the commission's charge and to which Social Security reform would clearly contribute. Such political barriers to touching Social Security except under certain narrow circumstances are among the reasons its benefit structure and eligibility age rules have not been significantly revised since 1983, which is an enormously long period of stasis by federal government standards.

The roots of Social Security's protected political position extend back to President Franklin D. Roosevelt, who as early as 1934 argued for his proposed Social Security financing method by stating, "We must not allow this type of insurance to become a dole through the mingling of insurance and relief. It is not charity. It must be financed by contributions, not taxes."[13] There has been bipartisan fealty to this financing principle throughout the subsequent decades of Social Security policy history. The 1957–1959 Social Security Advisory Council similarly stated, "We believe that the experience of the past 22 years has shown the advantages of contributory social insurance over grants from general tax funds."[14] The 1981 National Social Security Commission agreed, saying, "The primary source of funds to pay Social Security benefits has been, and the Commission believes should remain, the payroll tax."[15] And the 1994–1996 Social Security Advisory Council reiterated the point by writing, "Many foreign systems have contributions from general revenues to their social security systems, either to pay for administrative costs or for part of the benefits. The Council recommends against that procedure. The method of financing Social Security entirely by dedicated taxes has given the system considerable protection from having to compete against other programs in the general budget."[16]

The political protection afforded to Social Security by its financing mechanism acquires extra strength because that mechanism fosters a widely shared perception that Social Security is an earned benefit. By contrast, a means-tested (i.e., welfare) program financed from the general fund is in effect largely funded by income taxes that only roughly half of Americans pay, while it might also deliver direct benefits to a lesser fraction of the body politic.[17]

In such welfare programs, it is widely perceived that those who receive the benefits are not necessarily the same individuals who financed them, setting up a persistent conflict of interests between taxpayers and beneficiaries. Social Security, by contrast, is set up so that those who receive benefits are believed to have made contributions, at least in the aggregate, that are sufficient to finance those benefits. It is much more difficult for lawmakers to justify cutting benefits that recipients (as a group) are said to have paid for. Social Security's self-financing principle thus effectively shields its benefits from cuts, except to the extent that scheduled benefits exceed the system's dedicated revenues and thus require occasional corrections.[18]

In other words, Social Security's trust fund construct produces conflicting tendencies: on the one hand, it requires occasional financing corrections, but on the other hand, it inhibits legislation to contain benefit growth except when such financing corrections are obviously necessary. It is yet unknown how the body politic will respond if this inertia with respect to recalibrating benefits continues until the next time Social Security's insolvency is imminent, as is currently

projected to occur in the 2030s. Unless tax and benefit schedules are redrawn in the interim, then even before Social Security's trust funds are finally depleted, annual redemptions of their assets will require enormous flows from general revenues—more than $300 billion a year in today's dollars—over and above Social Security payroll tax collections.[19]

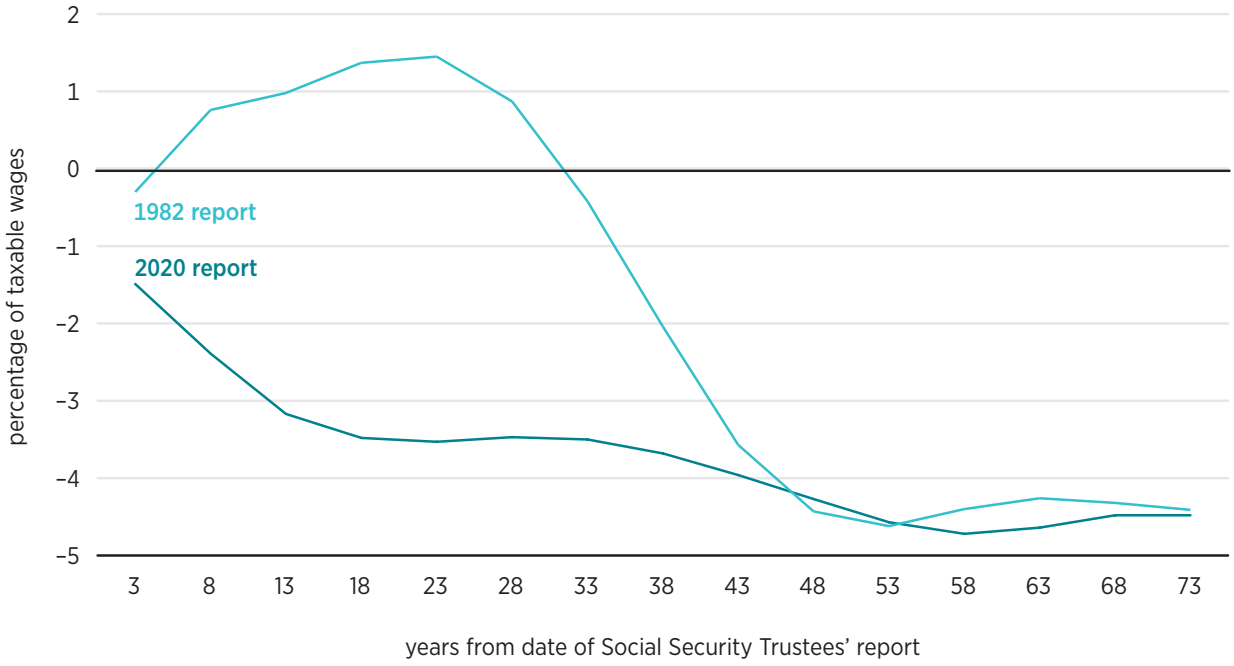
Maintaining Social Security self-financing after that point would require lawmakers to close the large gap between incoming payroll taxes and outgoing benefit payments without tapping additional general revenues. Yet, at that late hour, the path of least resistance would likely be to simply authorize continuing general revenue transfers as necessary to prevent trust fund depletion. If that course is taken, it would mean that the political resistance to changing benefits, which is engendered by the self-financing framework, would ironically have precipitated that framework's demise.

Obviously, the fact that Social Security has been self-financing in the past does not require that it be financed similarly in the future. Federal lawmakers hold the power to abandon Social Security's earned-benefit, contributory-financing, trust fund system at any time in favor of a different model in which benefit payments are untethered from participating worker contributions and are instead financed from the government's general fund. Indeed, there are reasons that some might advocate for deliberately abandoning the self-financing model in favor of general revenue financing. It is arguable, for example, whether Social Security's trust fund construct has a greater tendency to facilitate—or to inhibit—program changes that Americans might otherwise find desirable.

However, any public policy change as transformative as abandoning Social Security's self-financing design should reflect a willful decision of the body politic and should not occur simply because lawmakers have failed to take the steps necessary to preserve a system that American voters would prefer to retain. No compelling evidence exists that the American public wishes to scrap the financing mechanism that to date has provided such reliability and stability to Social Security benefit payments.[20] Accordingly, it would be a significant breach of the public trust for federal lawmakers to permit the finances of Social Security to deteriorate to the point at which they can no longer realistically be salvaged within its long-standing financing structure. Unfortunately, from this perspective, the task of repairing Social Security finances has already grown daunting by historical standards and could become prohibitively difficult with further delay.

Social Security's actuarial shortfall is described rather blandly in the trustees' report as being equal to 3.21 percent of workers' taxable earnings over a long-range valuation period of 75 years. This seemingly small percentage, however, describes a shortfall that has already grown far larger than the one corrected with great difficulty in the 1983 Social Security amendments.[21] Those amendments enacted a number of politically sensitive changes to the program, including exposing benefits to income taxation for the first time, delaying cost-of-living adjustments (COLAs) by six months, bringing all newly hired federal employees and their payroll tax contributions into the system, gradually raising the age of full benefit eligibility from 65 to 67, and accelerating a previously enacted payroll tax increase, among other changes.[22] These changes were intensely controversial and passed only because of substantial compromise and risk-taking by the leading political figures of the era, including

FIGURE 2. SOCIAL SECURITY PROJECTED SURPLUSES AND DEFICITS, 1982 AND 2020 REPORTS



Note: Dates given are in increments of five years because the 1982 report did not provide projections for individual years.

Sources: Social Security Board of Trustees, *1982 Annual Report, Federal Old-Age and Survivors Insurance and Disability Insurance Trust Funds*, 1982; table VI.G2 (OASDI and HI Annual Income Rates, Cost Rates, and Balances, Calendar Years 1970–2095), Social Security Administration, accessed August 20, 2020, https://www.ssa.gov/OACT/TR/2020/lr6g2.html, based on the assumptions used in Social Security Board of Trustees, *2020 Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Federal Disability Insurance Trust Funds*, 2020.

President Ronald Reagan, House Speaker Tip O'Neill, and Senators Pat Moynihan and Bob Dole. It is reasonable to question whether America's current divisive and partisan politics would allow a comparable compromise solution to be forged. Moreover, repairing Social Security's current actuarial shortfall already requires more severe changes than those enacted at that time.

Today's larger challenge can be seen by examining figure 2, which compares Social Security's future annual operating deficits (dark blue line) as projected in the 2020 trustees' report, with the projections of annual deficits and surpluses contained in the 1982 trustees' report (light blue line). As the figure shows, the deficits faced in the early 1980s were relatively smaller, and the changes required to eliminate the actuarial shortfall at that time were not nearly as large as the corrections already required today.

Urgent though Social Security's financial situation already is, it is rapidly growing more difficult to correct. Social Security's projected obligations over the next 75 years exceed its projected revenues by an amount equal to roughly 19 percent of scheduled benefits.[23] In other words, Social Security could be placed in long-term balance on average by reducing all scheduled benefits by 19 percent (or by increasing taxes by the equivalent amount). Historically, federal lawmakers have been unwilling to cut Social Security benefits for those already receiving them. If, instead, the necessary changes were applied only to those who have yet to file claims, the reductions in scheduled benefits would need to equal 23 percent.

Immediate benefit cuts of 23 percent for all those claiming benefits next year and afterward is itself a far more severe, sudden change than lawmakers are likely to seriously contemplate. More likely, any changes would be gradually phased in so that they would be smaller than 23 percent in the short run and thus need to be larger in the long run. But with every passing year of inaction, the required 23 percent reduction in prospective benefit claims (or its financial equivalent) grows. By the time Social Security's trust funds are on the verge of being depleted, even the *total* elimination of all new benefit claims would not produce enough savings to prevent depletion.[24] Again, even these daunting illustrations likely understate the changes required, because they do not account for the economic contraction that has begun in 2020.

Although no one can know exactly when Social Security's financing shortfall has grown too large to realistically close within Social Security's historical financing structure, it is clear from the illustrations in the preceding paragraph that this point will be reached long before the trust fund depletion date is imminent, and quite soon—if it hasn't been reached already. Lawmakers simply must act to repair Social Security's actuarial shortfall without substantial further delay if its financial structure—which has done so much to protect beneficiaries while also guiding occasional financial corrections—is to be retained.

Social Security faces a substantial threat to its future solvency. The threat is powerful, it is severe, and it is growing worse. Overcoming it is of great importance to tens of millions of participants. At the same time, *how* the program is kept solvent matters greatly. Solvency is not an end in itself, but a means to an end. The true desired end is a well-functioning Social Security system that serves societal goals and works to the benefit of program participants.

It is beyond the scope of this study to determine all the subjective value judgments that should be served by the Social Security system. As this study explains, certain aspects of the current system reflect specific policy judgments by past lawmakers—including the following:

- The program should be funded by participant worker contributions.
- It should operate primarily under pay-as-you-go financing.
- Individuals' benefits should be linked to their prior contributions.
- Low-wage workers should receive more generous returns than do high-wage workers.
- Initial benefit levels should keep pace with worker wage growth.
- There should be substantial political barriers to sudden benefit reductions.
- The program should provide a reliable base of retirement income that coexists with private retirement saving.

Though the various policy judgments listed above, and many others, are currently embedded in Social Security law, there is no inherent reason that they must all be heeded in the future. Readers are invited to consider how they would prefer that Social Security be adapted to meet the challenges detailed later in this study. Indeed, some advocates may urge departing from one or more of these inherited judgments, for example, by expanding Social Security to further displace private retirement saving, by shrinking it to shift more toward saving-based systems, by eliminating the link between individual contributions

and benefits, or by abandoning Social Security's self-financing earned-benefit construct.

The purpose of this study is not to persuade readers to prioritize any particular value judgments but rather to explain the implications of alternative future courses for Social Security. That said, one implicit value judgment does permeate this study: decisions about changing any fundamental aspect of Social Security should be made deliberately and openly, rather than through neglect that ultimately renders the continuation of that aspect impracticable. The following sections of this study discuss several factors that will affect whether Social Security functions in the future as Americans desire and intend.

FURTHERING SUSTAINABLE SOLVENCY

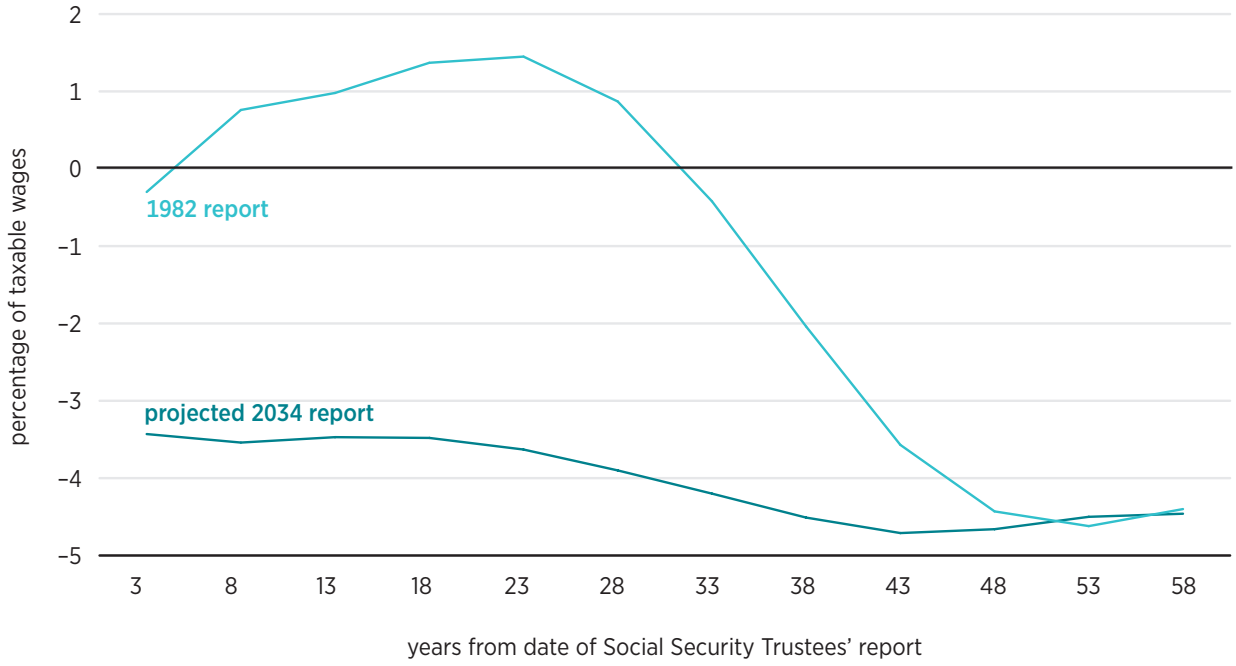
In keeping with their long-standing convention, the Social Security trustees measure the program's long-term actuarial balance over a period of 75 years. Program costs and income are each projected over this 75-year window, their aggregate present values are compared, and any imbalance between them is reported—typically as a percentage of the program's tax base consisting of worker earnings. As discussed in the previous section, this summarized actuarial balance measure is an average quantity over time and does not indicate whether program cash operations are in surplus or in deficit in any single specific year.

However, whenever the SSA Office of the Chief Actuary evaluates a Social Security solvency proposal, it scores the proposal not only for its effect on the program's 75-year actuarial balance on average but also for its effect on the balance of annual program income and outlays specifically in the 75th year.[25] Under the 2020 trustees' report projections, the 75-year actuarial imbalance equals 3.21 percent of program taxable payroll, whereas the annual imbalance in the 75th year is a larger 4.51 percent of payroll. The latter projection reflects the fact that Social Security's operating deficits are growing worse over time. At first glance, it might seem as though an analytical focus on the single 75th year might be less meaningful than focusing on 75 years in the aggregate. However, there are several reasons that the 75th year's annual balance is just as important to financial soundness as the 75-year balance and that an ideal solvency plan would close both shortfalls.

One shortcoming of focusing solely on the average actuarial balance is that it does not illuminate whether the program is on a sustainable financial trajectory. In theory, Social Security could be in actuarial balance if it has huge surpluses in the near term followed by equally huge (in present value) deficits late in the 75-year period. An obvious consequence of such a trend is that as soon as one year passed and the 75-year time frame thus shifted by a year, Social Security would be knocked out of balance again. The 75-year actuarial balance by itself tells us nothing about whether Social Security is financially stable or will instead require substantial future financing corrections.

This inadequacy of the long-term actuarial balance measure is an important reason that the 1983 repairs did not hold and that, instead, the program drifted back out of balance almost immediately after the amendments were enacted.[26] Throughout most of Social Security's history before 1983, not only its long-term finances but also its annual income and outgo had been kept in proximate balance. The Greenspan Commission that was convened in 1981–1983 to recommend measures to avert insolvency, however, did not analyze whether its recommendations would continue this

FIGURE 3. SOCIAL SECURITY PROJECTED SURPLUSES AND DEFICITS, 1982 AND (PROJECTED) 2034 REPORTS



Note: Dates given are in increments of five years because the 1982 report did not provide projections for individual years.

Sources: Social Security Board of Trustees, *1982 Annual Report, Federal Old-Age and Survivors Insurance and Disability Insurance Trust Funds*, 1982; table VI.G2 (OASDI and HI Annual Income Rates, Cost Rates, and Balances, Calendar Years 1970–2095), Social Security Administration, accessed August 20, 2020, https://www.ssa.gov/OACT/TR/2020/lr6g2.html, based on the assumptions used in Social Security Board of Trustees, *2020 Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Federal Disability Insurance Trust Funds*, 2020.

historical pattern. Instead, the actuarial effects of proposed reforms were analyzed as averages over time, lacking breakdowns into annual cash flows.[27] The package formed on the basis of this analysis thus attained actuarial balance only on average over 75 years, exhibiting substantial surpluses for the first few decades followed by large *annual* deficits in later ones (this pattern was only partially caused by the 1983 reforms themselves; some of these annual imbalances were already projected before the legislation).

The failure in 1983 to analyze and craft a solvency package based on its annual, as well as its average, long-term effects produced a number of problematic consequences. One of them, as previously mentioned, is that the solution began to unravel almost as soon as it was enacted. A more lasting consequence was that it jeopardized the success of future corrective measures. The reason is that lawmakers to date have been willing to enact Social Security financing corrections only when the trust funds are close to depletion. That practice is capable of producing solutions only as long as annual income and outgo are still close enough together that they can be brought back into balance on short notice. But because after 1983, long-term "balance" actually consisted of large annual *imbalances* (first positive and then later negative), Social Security will face near-term annual deficits equaling roughly 21 percent of its annual obligations if lawmakers once again wait until the verge of trust fund depletion to act.

See figure 3, which compares the projected deficits that would appear in the 2034 trustees'

report under current projections with those contained in the 1982 trustees' report. Specifically, figure 3 shows that in 2037 (three years after the hypothetical 2034 report), the projected annual deficit would be 3.43 percent of taxable wages, exceeding 20 percent of the program's annual cost obligations (16.74 percent of taxable wages) in that year.[28] Thus, if lawmakers wait until near the next projected time of trust fund depletion, they will then confront a far bigger problem than was solved in 1983. The annual cash-flow patterns bequeathed by the 1983 reforms mean that continuing the historical practice of acting only as the insolvency date nears is unlikely to work this time around.

The analytical inadequacy of the actuarial balance concept as used in 1983 is one of many reasons the Office of the Social Security Chief Actuary includes as part of its standard actuarial analysis a breakdown of each proposal's effects on *annual* operations over 75 years. This more complete scoring evaluation implicitly recognizes that reliance on an average actuarial balance measure is, and has been, inadequate to manage Social Security's finances.

Whether Social Security is on a permanently sustainable financial trajectory, as opposed to merely meeting a lower standard of average and temporary (albeit long-range) actuarial balance, has important implications for participants. Specifically, to the degree that Social Security's financial condition falls short of sustainable solvency, participants will face future income losses about which they are not being informed and around which they cannot adequately plan. It means that over time, the program's financing shortfall must ultimately reassert itself and require either further tax increases, reductions in scheduled benefits, or both. In effect, leaving Social Security in a temporarily balanced but not permanently sustainable financial condition means that participants' substantial future income losses are being concealed. Only if Social Security's finances are on a sustainable path can participants be reasonably confident that the program's effects on their finances are sufficiently disclosed for their own personal financial planning to be adequately informed.

None of this discussion suggests that Social Security operations can ever be precisely projected for all time or that future adjustments will not be necessary or desirable even if the program may already be sustainably solvent. Rather, it simply means that Social Security's finances should be kept on a sustainable trajectory according to the best available projections. Reasons to alter Social Security will likely always exist: for example, to meet the changing needs and preferences of later generations. The desirability of these policy reassessments, however, does not imply that in the meantime Social Security should remain on a path that current projections indicate will ultimately become untenable. No responsible policy objective is served by promising benefits far in excess of projected program revenues, whether for 10 years or 100 years into the future.

An analogy with personal finances might help provide a better understanding of the necessity of sustainable solvency. Consider the example of a person starting her working career: she cannot know all her future income and spending patterns. Despite this uncertainty, she would be foolish to adopt a financial plan that would have her lifetime spending far exceed her best estimate of future income. As her career and spending needs unfold, she will undoubtedly wish to make adjustments along the way. However, those adjustments should always be made in the context of a realistic plan to maintain her personal solvency. So too with Social Security.

A final, somewhat technical but nevertheless real, reason to stress annual program operations on a par with average solvency over time is the political economy history of Social Security and of broader federal fiscal management. Actuarial balance consisting of large annual surpluses followed by large annual deficits can "work" only if there is a mechanism for meaningfully saving the surpluses in positive years to better enable the financing of the subsequent deficits. Most academic research has concluded that this practice has not happened with Social Security. To the contrary, past years of Social Security surpluses stimulated additional federal government consumption rather than being used to reduce federal debt in a manner that would have rendered it easier to manage Social Security's deficit years.[29] Taxpayers in Social Security's deficit years consequently bear the full cost of Social Security benefit payments in those years, not just the portion that their payroll taxes cover. In other words, whenever Social Security draws on trust fund interest and principal to help pay benefits during deficit years, taxpayers face the same aggregate cost burdens as if the Social Security trust funds did not exist at all.

In practical effect, this political economy reality means that during Social Security's surplus years in the 1990s and the first decade of the 21st century, taxpayers paid lower income taxes and received more government services financed by Social Security's payroll tax surplus, instead of government restraining its consumption to lighten the eventual burden of financing future Social Security deficits. In contrast, taxpayers since 2010 are being required to pay not only their 12.4 percent Social Security payroll tax but also a portion of their income taxes to support Social Security benefits, rendering those same income taxes unavailable to finance general government services during this time. In the absence of a reliable mechanism to ensure that the federal government restrains its spending and effectively saves any Social Security surpluses, "solvency" that merely consists of large surplus years netted against large deficit years is more an accounting convention than an actual financing plan.

For all these reasons, an ideal Social Security plan would achieve not only long-term (75-year) solvency but also sustainable solvency. Fully defining *sustainable solvency,* however, is key. Different definitions of sustainable solvency are in common use. The Social Security trustees' report defines sustainable solvency as a condition in which a trust fund's "trust fund ratio" is "either stable or rising at the end of the [75-year projection] period."[30] This trust fund ratio (TFR) compares the amount of assets in a trust fund to its projected obligations during the ensuing year. A TFR of 100 would mean that the assets in a trust fund would cover one year's worth of benefits, 200 would cover two years, and so on. As long as the TFR is stable or rising at the end of the valuation period, one would have no reason to believe the trust fund would be depleted at any point after the valuation period, and so it would be reasonable to conclude that the trust fund is sustainably solvent.

Note that this definition of sustainable solvency does not examine the annual operating balance between incoming taxes and outgoing obligations. In other words, the definition in the trustees' report would permit a substantial cash deficit late in the projection period, contingent on the carryover trust fund balance being large enough that interest earnings on the trust fund enabled its positive balance to grow faster than the program's annual obligations. As a result, this definition of sustainable solvency is a weaker, looser definition than one that examines whether

the gap between annual tax income and outflow has been fully closed by the end of the valuation period without reliance on carryover trust fund balances.

For those assessing whether Social Security has truly been placed on a financially sustainable course, it is better to look at whether annual obligations are equal to or less than annual tax collections by the end of the 75-year valuation period and are on a course to stay that way. An important reason this measure is superior is that it is less susceptible to budgetary gimmicks than is the TFR-based definition of sustainable solvency presented in the previous paragraphs.

In theory, lawmakers could meet the TFR-based definition of sustainable solvency simply by manipulating government accounting (e.g., by enacting a law to credit Social Security with whatever amount of general revenues is required to produce a stable TFR by the end of the 75-year valuation period). Such a law would do nothing to restrain the growth of Social Security's benefit obligations or to increase the taxes Social Security generates. It would be an actuarial improvement only on paper that would not make it any easier to finance future benefit obligations. A more useful, meaningful measure of financial sustainability must focus on the balance of actual tax collections and benefit payments, not merely on trust fund balances that can be manipulated through intragovernmental accounting legerdemain.

In summary, whereas restoring Social Security to solvency is a minimum necessary requirement if the program is to fulfill American society's objectives within its historical financing structure, a sounder standard would be for that solvency to be sustainable. Truly sustainable solvency would in turn require not only aggregate actuarial balance over 75 years but also annual cash operating balance (or better) in the final (75th) year of the trustees' long-range valuation period.

MODERATING COST GROWTH

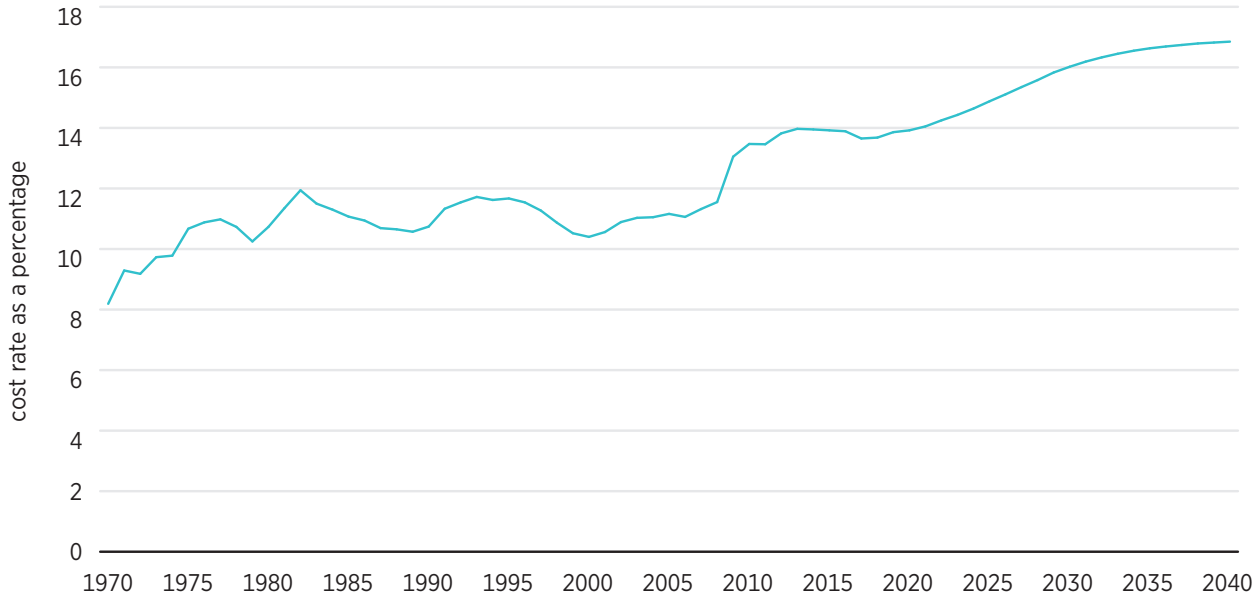
Social Security's costs are growing faster than the program's tax base and, even more concerningly, at a faster rate than is the national economic output. As figure 4 shows, in 1970, total program costs slightly exceeded 8 percent of American workers' taxable earnings, after which costs rose before fluctuating between 10 percent and 12 percent of taxable earnings throughout 1975–2008. Every year since 2009, benefit obligations have exceeded 13 percent of workers' taxable earnings and are projected to exceed 14 percent in 2021, 15 percent in 2026, and 16 percent in 2030.[31]

Expressing these costs as a percentage of GDP tells a similar story. In 1970, total program costs were just over 3 percent of GDP, and they fluctuated from 4 percent to 4.5 percent of GDP from 1984 to 2008. Every year since 2009, program costs have exceeded 4.7 percent of GDP, and they will surpass 5 percent of GDP in 2021, 5.5 percent of GDP in 2027, and 5.8 percent in 2032.[32] By 2028, Social Security outlays are projected to exceed all federal appropriated spending combined, including both defense and nondefense discretionary spending.[33]

A large part of Social Security's rapid cost growth is caused by the retirements of members of the historically large baby boom generation, which have been underway throughout the past decade and will continue into the 2030s. However, the baby boomers are not the entire story. Program costs grew from roughly 8 percent of workers' taxable earnings in 1970 to more than 11 percent by 1981, when the boomers were still in the first halves of their working careers. Moreover, costs are expected to surpass 17 percent of taxable worker earnings by 2058 and to grow to exceed 18 percent by 2074, after the baby boomers have essentially passed away. For multiple reasons in addition to the baby boomer retirement wave, Social Security costs are increasing faster than the economic capacity.

One of the reasons for this cost growth is increasing longevity. In 1940, when no one could claim primary worker Social Security benefits before age 65 (there were no disability benefits then, nor early-retirement benefits), cohort life expectancy at birth was 73.4 years, while remaining life expectancy at age 65 was 13.7 years. Today, cohort life expectancy at birth is 84.5 years, while cohort life expectancy at age 65 is 20.2 years.[34] And although Americans are living longer, they are nevertheless claiming benefits earlier in life, not only because of disability benefits but also because the availability of early eligibility benefits has made 62 the most common age for Social Security old-age benefit claims.[35] Simply put, Americans are living longer and collecting benefits for more years, while spending a smaller fraction of their adult lives as employed workers.

FIGURE 4. ANNUAL SOCIAL SECURITY COST RATES, EXPRESSED AS A PERCENTAGE OF WORKERS' TAXABLE EARNINGS

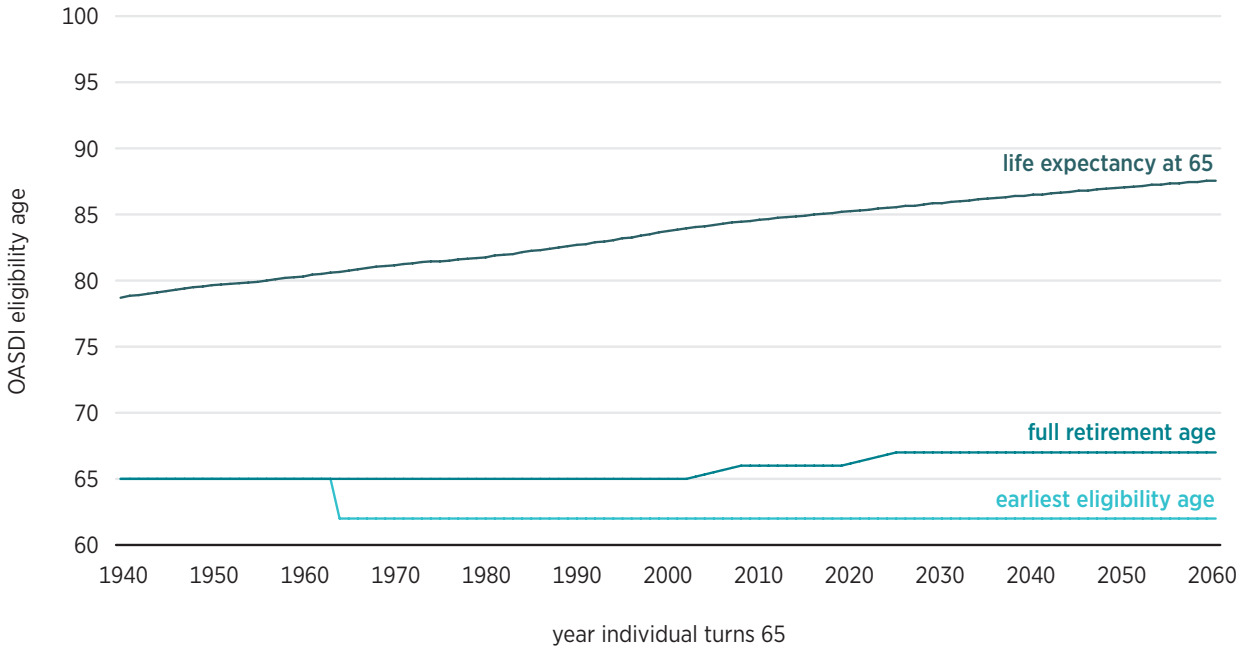


Source: Table VI.G2 (OASDI and HI Annual Income Rates, Cost Rates, and Balances, Calendar Years 1970–2095), Social Security Administration, accessed August 20, 2020, https://www.ssa.gov/OACT/TR/2020/lr6g2.html, based on the assumptions used in Social Security Board of Trustees, *2020 Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Federal Disability Insurance Trust Funds*, 2020.

To date, Social Security's eligibility ages have been adjusted only a small fraction of the amount necessary to reflect the demographic realities. Under current law, the eligibility age for full Social Security benefits will have increased by only two years (from 65 to 67) in all the time from Social Security's inception until 2025, while Social Security's earliest eligibility age (62) has not been adjusted at all in the more than a half-century since its establishment (see figure 5).[36] The result is that despite the fact that Americans are now living much longer, healthier lives than previous generations, the typical worker today claims Social Security benefits earlier than did the generation that fought the Spanish-American War.[37]

Paying benefits for more years of life is not the only reason Social Security costs grow. Annual benefits per capita are also rising. In 2020, the benefit for an individual defined by the Social Security Actuary's office as a "scaled medium-earnings" worker was slightly more than $23,000 at full retirement age. This amount, though but a fraction of the total retirement income that would be minimally adequate for most Americans, is more than 50 percent greater in real (inflation-adjusted) terms than the benefit received by a medium-earnings worker retiring in 1972, who in turn received a real benefit more than 50 percent greater than a worker retiring in 1958.[38] That 1958 worker also received a real benefit more than 50 percent larger than that paid to a retiree in 1950. This trend of annual benefits growing substantially faster than price inflation will continue into the future and is a consequence of current-law indexing methods explained in

FIGURE 5. LIFE EXPECTANCY VS. SOCIAL SECURITY ELIGIBILITY AGES



Note: OASDI = Old-Age, Survivors, and Disability Insurance. This graph uses cohort life expectancy, which projects an individual's remaining years of life, taking into account expected mortality improvements in the future years during which the individual is projected to survive. Cohort life expectancy is distinct from period life expectancy, which estimates an individual's remaining years of life using mortality rates already in evidence at the time the projection is made.

Source: Table V.A5 (Cohort Life Expectancy), Social Security Administration, accessed August 20, 2020, https://www.ssa.gov/OACT/TR/2020/lr_5a5.html, based on the assumptions used in Social Security Board of Trustees, *2020 Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Federal Disability Insurance Trust Funds*, 2020.

the following paragraphs. The retirees of 2055 are currently being promised full retirement benefits that are more than 50 percent larger than today's in real (inflation-adjusted) terms. In summary, Social Security costs are rising because, as President George W. Bush aptly put it, "People are living longer and therefore drawing benefits longer. And those benefits are scheduled to rise dramatically in the next few decades."[39]

Before 1972, Social Security benefit levels grew primarily whenever there were intermittently legislated *ad hoc* benefit increases, which frequently occurred in even-numbered (congressional election) years as an incumbent reelection ploy. But from the 1970s to the present and under current law into the future as well, most per capita benefit growth is driven by automatic indexing mechanisms first written into federal law in 1972 and changed essentially into their current forms in the 1977 amendments. The most significant of these indexing mechanisms are, first, the indexing of initial benefit award levels to grow from one retiree cohort to the next with growth in the national Average Wage Index (AWI) and, second, the application of an annual COLA, proportional to growth in the national Consumer Price Index for Urban Wage Earners and Clerical Workers (CPI-W), to each individual's benefits after the benefits begin to be received.

That Social Security's costs are growing faster than its tax base consisting of worker

earnings—and faster than the nation's overall economic output—is an obvious problem. The finances of Social Security cannot be said to be truly stabilized until its cost growth rate is limited to the rate of growth in the nation's capacity to finance it. Reasonable people can and do disagree on the optimal size of the Social Security program. But as long as its costs grow faster than workers' economic output, future workers must perpetually surrender a rising share of their earnings to finance it, and no Social Security payroll tax rate is likely to remain stable.

Such unaffordable cost growth destabilizes the federal budget, among other problems. As Eugene Steuerle recently noted, Social Security cost growth alone will absorb roughly 41 percent of all projected federal revenue growth over the next decade (with another 41 percent going to Medicare, 15 percent to Medicaid and other federal health programs, and almost nothing left over for any other national need, whether it is public health, education, transportation infrastructure, or environmental protection).[40] Such rapid cost growth not only undercuts the ability to advance other vital national priorities but also undermines Social Security's own finances.

For all these reasons, lastingly effective Social Security reform would moderate the growth of costs so they would not exceed the nation's ability to finance the program. This constraint may initially seem to elected officials and the voting public like bad news, in the sense of imposing undesirable sacrifices upon program participants. But as it happens, a decelerated cost growth rate would not only help the program's finances and taxpayers, but also facilitate more equitable treatment of program participants. That fact doesn't make the politics of slowing benefit growth any easier, because voters at the time of legislation must contribute to such a solution. It means, however, that participants' interests as a whole align fortuitously with fiscal imperatives. The reasons for this alignment of interests are rooted in the ways in which Social Security's current benefit formulas cause benefits and costs to grow faster than is optimal from an equity perspective; thus, slowing program growth would tend to improve participant equity.

A misperception common even among some policy experts is that Social Security's current-law rate of initial benefit growth—specifically, its indexing the growth of initial benefit levels to growth in the national AWI—is necessary to keep retirees' standards of living from falling behind those of contemporary workers in the surrounding economy. To the contrary, however, if maintaining a constant relationship between worker and retiree living standards is the goal, the current benefit indexing formula overshoots considerably, resulting in faster benefit growth than intended. Specifically, the current formula causes Social Security benefits to grow *faster* than do worker standards of living.

One reason for this outcome is that Social Security's benefit indexing formula does not result, as one might expect, in benefits simply growing in real terms whenever individual wages grow in real terms. Instead, Social Security's benefit indexing formula causes the same real wage, when earned by a later generation, to translate into a larger real benefit than that paid on the basis of the same real wage when earned by an earlier generation. The illustration included in the following box, and figure 6, may help to make this counterintuitive situation clearer.

HOW BENEFIT INDEXING INCREASES REAL SOCIAL SECURITY BENEFITS OVER TIME

Imagine an unmarried worker retiring last year (2019) at the full retirement age (66). The Social Security benefit calculation began by computing his or her "average indexed" career earnings, specifically by translating each of the worker's prior earnings years into contemporary equivalents by indexing them for subsequent growth in the national average wage index.[41] This unmarried worker would have turned 65 in 2018, with a career-average indexed earnings computed to be roughly $54,200 in (real, inflation-adjusted) 2020 dollars.[42] This earnings record would translate into an initial retirement benefit of about $22,000 in 2020 dollars, equating to a replacement rate of about 40.6 percent under SSA's method of indexing career earnings.[43]

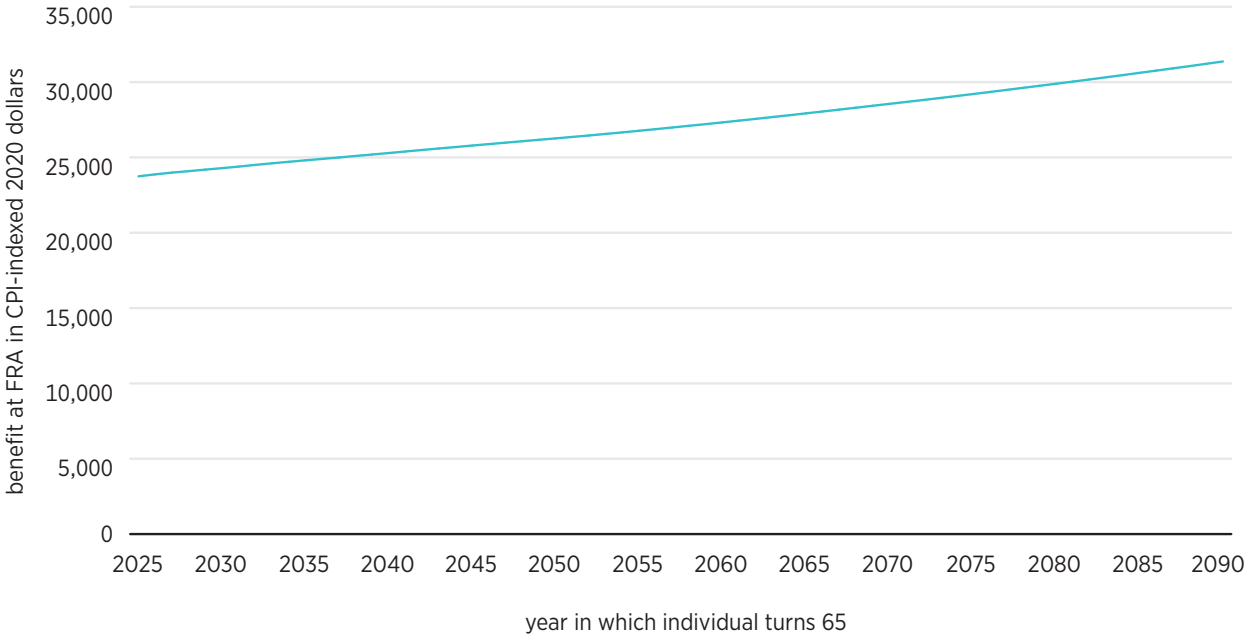
Now let's look ahead to another worker also retiring at the full retirement age (then 67) in 2030, with the same real wage (in 2020 dollars) of roughly $54,200. That worker's career-average wages (indexed according to the methodology described in the previous paragraph) would be roughly $68,100 in nominal 2030 dollars. Many might incorrectly assume that Social Security will pay this worker larger benefits in nominal dollars only to the extent that the worker's wages are also larger in nominal dollars. But that's not actually what Social Security does. Social Security will instead pay the worker retiring in 2030, with the same real wages as last year's medium-wage retiree, a substantially *higher* benefit in real terms.

Specifically, the 2030 worker's scheduled benefit would be about $24,100 in real (inflation-adjusted) 2020 dollars—roughly 9 percent greater in purchasing power than today's medium-wage retiree received last year. The 2030 worker's replacement rate (as calculated by SSA methodology) would also be 9 percent higher—44.4 percent as opposed to the 2019 retiree's 40.6 percent. In other words, the same real wage earned by the retiree of 2030 entitles that future worker to a substantially *larger* real benefit than the identical real wage did when earned by a medium-wage worker retiring in 2019. The Social Security benefit formula doesn't cause real benefits to keep pace with real wages; it causes benefits to rise faster.

Indexing real benefits so they continually grow compared to real wages has compounding effects over time that ultimately become very large. For example, a worker retiring at the normal retirement age in 2050 with the same real wage as last year's medium-wage worker would have an initial benefit of roughly $26,100 in 2020 dollars and a replacement rate (as defined by SSA) of 48.1 percent. The benefit is 18 percent higher in real terms than the benefit received by last year's medium-wage worker. For a worker with the same real wage retiring in 2070, corresponding numbers would be an initial benefit of roughly $28,300 in 2020 dollars and a replacement rate of 52.2 percent, both 28 percent increases compared to last year's retiree. For a worker with the same real wage retiring in 2090, corresponding numbers would be an initial benefit of roughly $31,100 in 2020 dollars and a replacement rate of 57.3 percent, both roughly 41 percent higher than the amounts paid to the medium-wage worker last year. See figure 6 for a visual depiction of how real benefits rise over time for workers earning the identical real wage of roughly $54,200.

Why does Social Security's benefit formula work this way? The answer is that an implicit rationale underlies it, albeit one that might seem mysterious, flawed, or simply strange to the typical layperson. Essentially, the benefit formula treats the worker with real wages of $54,200 in 2050 differently from a worker with the same real wages in 2019 on the basis of the rationale that the worker of 2050 is not a similar average-wage worker in that future economy, but instead a substantially-below-average-wage worker (indeed, the 2050 worker's earnings would be only about

FIGURE 6. INITIAL BENEFIT AT FULL RETIREMENT AGE FOR SINGLE INDIVIDUAL WITH CAREER-AVERAGE EARNINGS OF $54,217 (IN 2020 DOLLARS)



Note: This figure compares workers to one another according to the year that each worker turns 65, to provide the most readily understood comparison of how workers' benefits vary with their years of birth. Note, however, that the full retirement age (FRA) is in the process of changing, and will be 67 by the time current statutory schedules are fully phased in. Thus, the presentational emphasis in this figure (i.e., the year in which an individual turns 65) is slightly different from what is emphasized in the preceding text box (i.e., the year in which an individual attains full retirement age), the purpose of which was to provide comparisons illuminating how AWI indexation affects the benefits to which workers are entitled at the FRA.

Source: Author's calculations, based on data from Social Security Board of Trustees, *2020 Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Federal Disability Insurance Trust Funds*, 2020, particularly "Single-Year Tables Consistent with 2020 OASDI Trustees Report," Social Security Administration, accessed August 20, 2020, https://www.ssa.gov/oact/tr/2020/lrIndex.html.

two-thirds of the national average in the higher-earning future economy). Though in absolute terms that worker retiring in 2050 is not poorer than the worker retiring in 2019, the system notes that he or she is poorer in *relative* terms—that is, relative to the society around him or her. And so, the benefit formula treats the future worker as though he or she is in greater need, giving him or her a higher benefit than it gives to the identical-real-wage worker who retired last year.

This policy might make reasonable sense were it not for one thing: this method of benefit growth makes an implicit value judgment fundamentally at odds with how American voters typically think of the purpose of social insurance programs such as Social Security. At any given time, the Social Security benefit formula generally pays larger returns to lower-wage workers than it does to higher-wage workers, predicated on the rationale that people who are poorer need more assistance. But Social Security's benefit growth formula makes exactly the opposite judgment: it assumes that as American society grows richer over time, dependence on Social Security should grow rather than lessen.

The widely accepted rationale that holds that poorer Americans need more help than do richer Americans would similarly hold that earlier, poorer generations would need more help from Social Security than would later, richer

ones. Social Security's current-law indexing method is inconsistent with that principle. To be philosophically consistent with the principle of giving more help to poorer Americans and less help to richer ones, the same real wage across time would need to produce the same real benefit and thus the same income replacement rate. Under such a policy, as Americans became wealthier, their individual reliance on Social Security benefits would become correspondingly less. The current-law indexing formula that causes benefits to grow substantially faster than this rate turns the usual principle of greater assistance to poorer individuals on its head.

Another key respect in which Social Security's current benefit growth rate overshoots societal intent is that it does not maintain a constant relationship between workers' and beneficiaries' standards of living. Instead, it causes the standards of living for program beneficiaries to rise faster than do the standards of living that participants experience as contributing workers.

Again, this situation may be a surprise to those who are casually familiar with Social Security policy and the rationales frequently articulated in support of it. As summarized in a Congressional Research Service (CRS) report, "From year to year, the average benefits that new beneficiaries receive increase at approximately the same rate as average earnings in the economy."[44] The philosophical concept at the core of this method is, as one advocacy group has put it, that the incomes of retiree beneficiaries "keep up with the world of the workers around them."[45]

But there is a problem with this method: it doesn't work. Or at least, it doesn't work if the goal is comparable treatment of each generation of workers and beneficiaries. The reason is that as American society ages, unless eligibility ages are adjusted to adequately reflect demographic changes, there are more seniors to support for each taxpaying worker. Accordingly, if initial individual benefit levels rise each year with worker earnings while at the same time benefits are paid over more years of life to much larger numbers of seniors, then Social Security tax burdens on workers must continually mount. Thus, as retirees' annual benefits rise as fast as worker earnings, Social Security tax burdens rise *faster* than workers' earnings; thus worker standards of living are steadily depressed compared to retiree incomes, as shown in the following box and in figure 7. To stabilize the relationship between worker and retiree standards of living, Social Security's rate of cost growth would need to slow considerably so that its toll on worker earnings does not grow nearly as rapidly as under current law.

The trend shown in figure 7 is consistent with other measurements of relative income growth in the US economy. Andrew Biggs has noted, citing CBO data, that "on average, household retiree incomes grew from $41,100 to $78,000 between 1979 to 2016, a 90% increase over and above inflation. . . . Over that same period, average salaries for working-age households grew by only 39% above inflation."[46]

There has been widespread concern about sluggish income growth for American workers over the past few decades.[47] A significant part of the reason worker incomes are lagging behind is the growth of federal programs that transfer income from working Americans to retirees. For example, as Biggs also notes, Social Security benefits per household grew 70 percent in real (inflation-adjusted) terms from 1979 to 2016.[48]

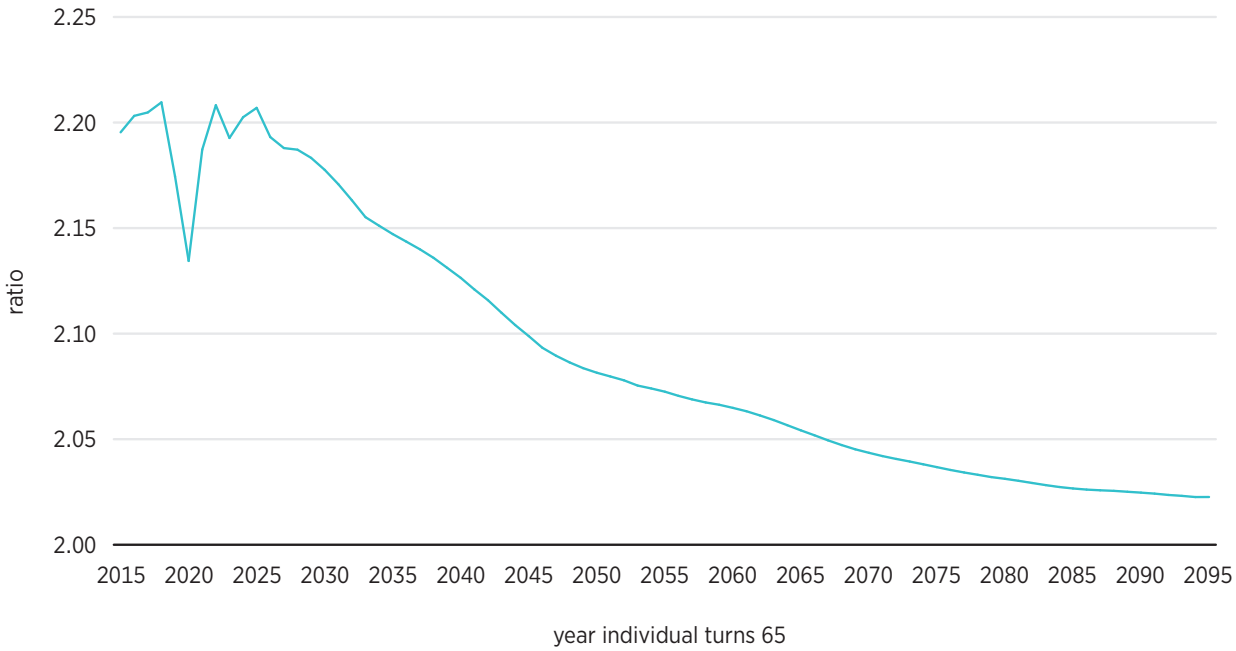
HOW SOCIAL SECURITY GROWTH DEPRESSES LIVING STANDARDS OF WORKERS COMPARED TO THOSE OF BENEFICIARIES

A medium-wage worker who turned 65 in 2015 and retired at the full retirement age of 66 received a benefit ($21,422 in 2020 dollars) that was 40.5 percent of the 2015 average wage index ($52,886 in 2020 dollars).[49] Throughout the career of that worker, while the worker paid Social Security payroll taxes (as well as any other taxes) on earnings, the cost of financing Social Security benefits averaged 11.1 percent of that worker's wages.

Accordingly, Social Security cost burdens reduced that worker's standard of living by 11.1 cents on the dollar while the worker was in the workforce, leaving that worker with 88.9 cents on the dollar from which to meet every other tax and expense. In exchange for reducing the standard of living for the worker from the national average wage to 88.9 percent of the average wage, Social Security later increased the worker's retirement income by an amount equal to 40.5 percent of the average wage. The ratio between this particular worker's standard of living after being reduced by Social Security—and the worker's eventual retirement income gains under Social Security—equals 88.9/40.5, or 2.2.

This ratio—the ratio of workers' standards of living net of Social Security, to what these workers later receive from Social Security—is declining because Social Security benefits are rising faster than workers' after-tax earnings. The ratio is projected to fall below 2.15 for those turning 65 in 2035, below 2.1 for those turning 65 in 2045, and below 2.05 for those turning 65 in 2067. This analysis is simply a numerical way of showing that Social Security cost and benefit growth are causing worker standards of living to lag behind beneficiary standards of living. If the nation wants a Social Security system in which retiree standards of living keep pace with worker standards of living, as has often been expressed, the current benefit indexing method causes benefits to grow too quickly to meet the stated objective, and its rate of growth requires moderation.

FIGURE 7. RATIO OF MEDIUM-WAGE WORKER EARNINGS (NET OF SOCIAL SECURITY TAXES) TO SOCIAL SECURITY BENEFITS AT FULL RETIREMENT AGE



Source: Author's calculations, based on data from Social Security Board of Trustees, *2020 Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Federal Disability Insurance Trust Funds*, 2020, particularly "Single-Year Tables Consistent with 2020 OASDI Trustees Report," Social Security Administration, accessed August 20, 2020, https://www.ssa.gov/oact/tr/2020/lrIndex.html.

Given that (a) American retirees' incomes are growing much faster than worker incomes, (b) median incomes for Americans in their 60s and 70s already exceed those of young workers, and (c) federal retirement program costs are growing at unsustainable rates, reforms to moderate the growth of Social Security costs and benefits are warranted.[50] Alternatively, changing Social Security law to cause total program costs to grow even faster than current schedules would exacerbate these problems and is obviously to be avoided.

Summarizing, three main variables define the broad contours of Social Security policy: the annual income that it provides, the number of years of benefit payments that it delivers, and the tax burdens to which workers are subjected. All three of the factors are growing substantially faster than can be afforded from growth in American workers' earnings. Americans will have a generally better experience from Social Security if growth in annual benefit levels as well as in the number of years Americans collect retirement benefits are both moderated relative to current law.

Before the conclusion of this section, a final technical note is of relevance: many analyses of Social Security solvency proposals misleadingly compare the benefits that would be paid under proposed plans to those *scheduled* under the current formulas for Social Security benefits. Such comparisons are inaccurate analytically, because full scheduled Social Security benefits are not statutorily payable under current law after the trust funds become depleted, which before the pandemic was projected to occur in 2034 (OASI's trust fund) and in 2065 (DI's trust fund).[51] The analytically correct comparison for any proposal is with benefits that are actually payable from the dedicated resources of the Social Security trust funds.

But even beyond that technical point and for reasons that this section has illuminated, it is inadvisable to compare benefits under solvency proposals only with current-law Social Security benefit schedules. Those current-law schedules would result in cost and benefit growth that is substantially faster than is optimal from either a fiscal or individual equity perspective. A better basis of comparison for any Social Security solvency proposal is with an ideal standard in which cost growth is successfully stabilized in relation to taxable worker earnings, or alternatively, with one in which the relationship between worker and retiree standards of living holds constant over time.

RESTORING INTERGENERATIONAL EQUITY

Americans have a reflexive tendency to think of Social Security as protecting participants from poverty, in part by redistributing income from richer households to more vulnerable, poorer ones. It is true that Social Security is progressive on balance and provides lower-income Americans with greater returns on their payroll tax contributions than it does higher-income Americans.[52] However, Social Security also redistributes income across generations in ways that are possibly even more important, specifically from later-born generations to earlier-born ones. Indeed, Social Security's income redistribution across generations is so extensive that, if it is not carefully managed and ameliorated, Social Security's future efficacy in providing social insurance will be imperiled.

The annual Social Security trustees' reports contain a useful analysis that sheds light on the program's net effect on today's young as well as on future generations of Americans. It shows specifically how Social Security's past and projected costs and revenues affect workers just now coming into the labor force in ways different from current and previous program participants.

Key elements of the trustees' analysis are reproduced in table 1, which expresses the present value of various Social Security factors as a percentage of the program's future tax base.[53] Presenting the numbers as a percentage of American workers' future taxable earnings enables the reader to understand how much of those earnings will be absorbed by Social Security.

Row (e) in table 1 is especially significant. It is, in effect, a measure of the net income losses the program would impose on younger generations under current law.

Let's look closer at the program operations depicted in table 1. Rows (a) and (b) show that—to date—Social Security has collected more in taxes than it has paid in benefits. This surplus is why the program currently has a net positive balance in its trust funds. Although the current balance of the trust funds is substantial in dollar terms (roughly $2.9 trillion at the start of 2020), it is nevertheless very small as a percentage of future worker earnings. Past taxes equal to 6.0 percent of future taxable earnings, minus 5.8 percent for past benefit payments, produce a net surplus to date equaling only 0.2 percent of future earnings.[54]

The current trust funds' balance is also quite small when compared to scheduled future benefit payments for current Social Security participants, including both current beneficiaries and taxpaying workers. The total of such future benefit payments equals 6.8 percent of the program's future tax base. However, current participants will be contributing future taxes equal to only

TABLE 1. COMPONENTS OF SOCIAL SECURITY'S FINANCIAL IMBALANCE

Factor	Present value as a percentage of workers' future taxable earnings
(a) Past costs incurred to date	5.8
(b) Past dedicated tax income collected	6.0
(c) Future benefit payments to current participants*	6.8
(d) Future tax collections from current participants	3.2
(e) Excess of benefits over taxes, current participants [= (a − b) + (c − d)]	3.4
(f) Future benefits scheduled for future participants	11.5
(g) Future tax collections from future participants	10.2
(h) Total program unfunded obligations [= e + f − g]	4.6

* Participants include current taxpaying workers as well as current beneficiaries. This number technically includes all program "costs," which include administrative costs in addition to benefit payments. However, Social Security's administrative costs are low enough (less than 1 percent of total outlays) that, for purposes of this analysis, this number can be treated as representing benefit payments. Social Security Administration, "Social Security Administrative Expenses," accessed August 20, 2020, https://www.ssa.gov/oact/STATS/admin.html.

Source: Social Security Board of Trustees, *2020 Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Federal Disability Insurance Trust Funds*, 2020, 206.

3.2 percentage points of the total future tax base, because that tax base consists mostly of the earnings of future workers. When all this information is put together, it means that the imbalance between benefit payments to, and taxes collected from, people already in the Social Security system creates a financial hole equal to 3.4 percent of all future taxable earnings of American workers.

In other words, current and past participants taken together are scheduled to receive much more from the Social Security system than they contributed. As a result, those now entering the Social Security system as new workers will suffer a net income loss through the program equal to 3.4 percent of future taxable earnings. Thus, even if Social Security pays young and future workers all the benefits the system has currently scheduled, they will still be made substantially poorer by the Social Security program on balance.

Table 1 also shows that new workers entering the system today and into the future have scheduled benefits equal to 11.5 percent of future taxable earnings, while 10.2 percent of all such earnings will be contributed as taxes by these workers. The relatively modest imbalance between these two factors means that only a little more than one-quarter of the projected Social Security shortfall (roughly 1.2 percent of American workers' future taxable earnings, or 11.5 percent minus 10.2 percent with rounding errors) has anything to do with Social Security's net treatment of future workers. The vast majority of the shortfall arises from the excess of benefits over taxes for individuals in the Social Security system already.[55]

The net income loss facing future generations from Social Security bears important policy implications. Consider that the foundational purpose of Social Security is to provide income insurance. It will be difficult for the program to function effectively and as intended to the benefit of future generations when at the same time it subtracts substantial net income from them. Even if Social Security benefits are distributed progressively within each particular generation, the average future worker will still be made substantially poorer by Social Security under current law. This phenomenon depresses the numbers of future Americans who can have their income security enhanced by Social Security. Unless

something is done to ameliorate the net income transfers across generations, it is infeasible for Social Security to function to the benefit of future generations as it has for current and past ones.

Why does Social Security, on balance, reduce the income of younger generations? The answer can be simplified into two components. First, Social Security is not a saving program. It does not add to the stock of national savings available to finance total retirement income. It is instead a pure income transfer program, meaning that it is a zero-sum game at best: no one can gain income through Social Security unless someone else loses an equal or greater amount.[56]

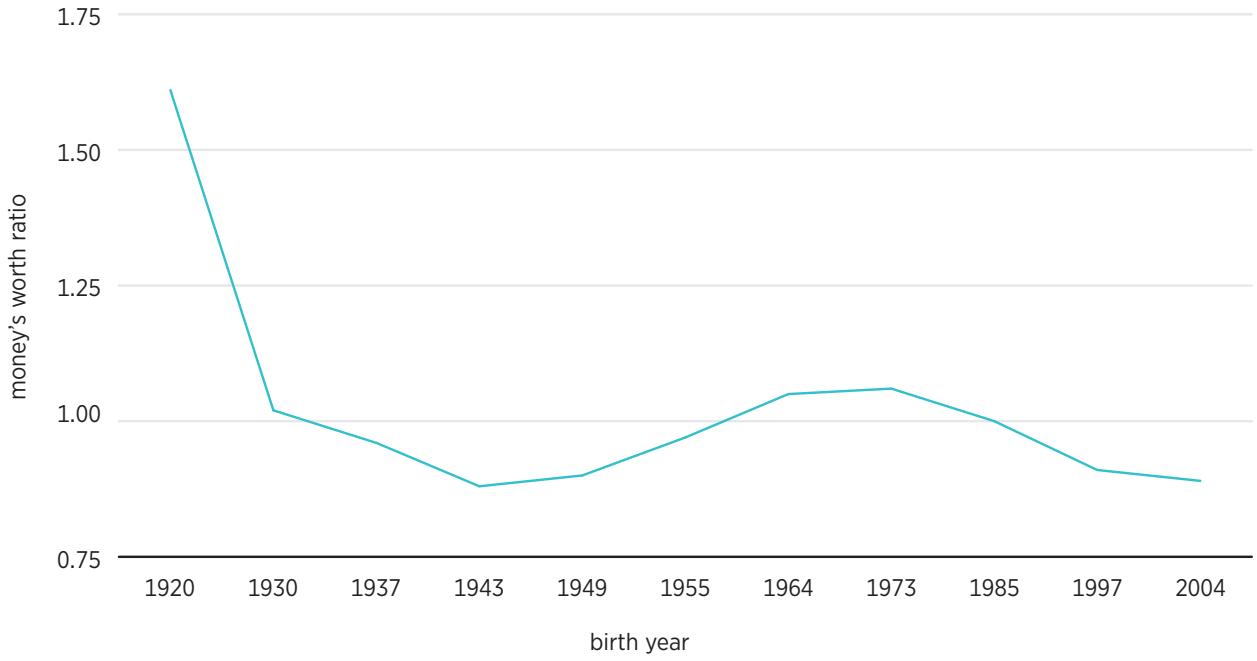
The second reason is that Social Security has been funded since its inception on essentially a pay-as-you-go basis. The first generation of Social Security beneficiaries was not required to make contributions sufficient to finance their own benefits. Instead, they received an income windfall, receiving benefits funded mostly from the tax contributions of the next, younger generation. Each subsequent generation of workers has in turn seen the tax contributions they make, while working, used immediately to pay those who were already beneficiaries. Later, after becoming beneficiaries themselves, they receive benefits financed by taxing the following generation. Putting these two factors together provides the general picture: because the net national income gain under Social Security can be no greater than zero and because its first generation of beneficiaries received a benefit windfall for which they did not fully pay, subsequent generations must on balance contribute more than they receive.

The analysis in the preceding paragraphs is a simplified one, but the situation it describes is generally recognized by Social Security analysts. The widely used term for the financial hole created in Social Security by paying unearned benefits to the first generation is the "legacy debt." There have been various attempts to quantify the size of the legacy debt, with the results naturally depending on when the calculations were made and the number of birth cohorts they included. To take but one example, Dean Leimer of the Social Security Administration calculated that the legacy debt associated with providing net income gains to individuals born before 1931 equals 3.7 percent of the present value of all future workers' taxable earnings (as of 2014, when Leimer's study was performed).[57] This number is roughly consistent with the analysis provided in the preceding paragraphs.

Two important caveats about the legacy debt need to be stated. One is that recognizing the reality of the legacy debt should not be equated with a complaint about the policy choices that created it. For example, economists Peter Diamond and Peter Orszag, while also describing and quantifying the legacy debt, write that the benefits paid to the first generation of Social Security beneficiaries were "a humane response to the suffering imposed on Americans who came of age during World War I, the Great Depression, and World War II."[58] The significance of the legacy debt is not that it reflects good or bad policy; rather, the significance of the legacy debt is that it affects how current and future generations will be treated by Social Security.

The second important caveat is that the mixing of current and past participants in the trustees' analysis obscures the fact that it is primarily past generations, rather than current ones, that experienced the net windfall that engendered the legacy debt. But although current participants didn't cause the problem, they need to be part of solving it for Social Security to be effective and equitable in the future. If current participants

FIGURE 8. SOCIAL SECURITY MONEY'S WORTH RATIO: MEDIUM-INCOME, TWO-EARNER COUPLE



Note: The intermittent birth years shown on the horizontal axis reflect the examples provided in the original Social Security Administration memorandum.

Source: Social Security Administration, "Money's Worth Ratios under the OASDI Program for Typical Hypothetical Workers," Actuarial Note Number 2019.7, March 2020.

insist on getting back everything they contributed to Social Security and then some, the only outcome must be that younger generations experience large income losses under Social Security, and thus that it cannot serve future American society well.

A hint of this reality—that Social Security will function best if each generation contributes something to offset the legacy debt—can be gleaned from some of the quantifications of it mentioned earlier. As noted, the windfall paid to those born before 1931 produced a legacy debt equal to roughly 3.7 percent of future workers' taxable earnings. But if the same methodology is applied to all those born before 1949, the remaining legacy debt shrinks slightly to 3.2 percent of future workers' taxable earnings.[59] If all participants born after 1949 contribute something to the solution, then the income losses remaining to be shouldered by younger workers can be reduced still further. If instead, however, the baby boom generation escapes making significant net contributions to discharging the legacy debt, the income losses facing younger workers will be far larger than those faced by any previous generation.

The SSA Office of the Chief Actuary publishes a recurring note in which it estimates "money's worth" ratios—that is, the ratio of each cohort's lifetime Social Security benefits, in present value, over the cohort's lifetime payroll tax contributions. Figure 8 reproduces findings from table 3 of the SSA analysis, which is the most meaningful table presented in the actuarial note because it compares taxes to what Social Security would actually pay under current law.[60] This figure uses the representative example of a

two-income couple with career earnings equal to the national average wage.

Some of the data presented in figure 8 are worthy of additional elaboration. First, note that the couple born in 1920 received benefits equaling more than 160 percent of their lifetime payroll tax contributions (times interest), a windfall exemplifying why Social Security's legacy debt exists. Americans born between 1930 and 1960 made a minor contribution to alleviating the legacy debt, but not nearly enough to discharge it. Those born in the 1960s are coming out slightly ahead, taking more out of the Social Security system than they are contributing to it. But younger generations, born from the 1980s onward, would lose substantial income through Social Security under current law, with the losses growing even worse for later generations. Those born in 2004, for example, would receive benefits equal to only 89 percent of their lifetime contributions, in present value. In other words, under current law, 11 percent of the interest-compounded value of these younger workers' career payroll tax contributions will never be returned to them.

The policy implications of these analyses are stark. Unless those who are already participating in Social Security (either as workers or beneficiaries) make greater net contributions to restoring program solvency, younger generations will lose big. This problem can be partially addressed by moderating the near-term growth of benefits. Raising taxes to finance projected shortfalls would instead actually make the net treatment of the birth cohorts of the 1960s and 1970s more generous, because it would increase the benefits payable to them under current law; under such a tax-increase strategy, a still larger share of the legacy debt would be left to fall on the shoulders of younger workers, worsening their net treatment.[61]

Clearly, the worst possible thing to do from a generational equity standpoint would be to further increase Social Security benefits in the near term, as some political candidates have proposed.[62] Increasing benefits for current participants well beyond what their own contributions can finance would further exacerbate the net income losses facing younger generations, thereby threatening the program's effective future functioning as a bulwark against income loss. It is difficult to justify such a generalized benefit increase from the standpoints of program efficacy and equity.[63]

Although there is a strong substantive imperative to improve the program's intergenerational equity by moderating the growth of benefits in the near term, the political barriers to such reforms are substantial. Historically, lawmakers have been extremely reluctant to reduce benefits for those nearing retirement age, let alone for those already in retirement. This reluctance is one reason further delay in repairing system finances is so costly: each additional year of delay effectively reduces the extent to which elected officials can improve system finances and intergenerational equity by moderating cost growth. The longer lawmakers delay repairing program finances, the greater the likelihood that the shortfall will be addressed by imposing additional tax increases on the same younger workers who already stand to lose the most money through Social Security.

The daunting challenge of enabling Social Security to adequately serve future generations increases the importance of current participants contributing to the solution and avoiding actions that unnecessarily aggravate the problem. One such example pertains to the Consumer Price Index (CPI) currently used to calculate annual Social Security cost-of-living adjustments

(COLAs.) There is a strong consensus among economists that the inflation index currently used by Social Security (CPI-W) overstates price inflation and that the chained CPI-U (C-CPI-U) is a more accurate measure.[64]

One effect of continuing to use CPI-W is to pay larger COLAs than those that would reflect the statutory intent of accurately capturing general national price inflation. The continued use of CPI-W for COLAs, in addition to worsening Social Security's financing shortfall, also worsens intergenerational inequities by redirecting additional income from younger generations to older ones.[65] The sooner that lawmakers can correct the calculation of CPI, the less that current COLA measurement inaccuracies will exacerbate intergenerational inequities.

Some advocates have proposed financing the legacy debt by providing Social Security with an infusion of general (e.g., income tax) revenues.[66] For better or worse, this proposal would abandon the foundational principle of Social Security, which dates back to its inception under President Franklin D. Roosevelt, that it be self-financing. The Social Security trust funds exist because of an implicit promise made to American taxpayers that the program will pay its own way. Shifting the financing burden for the windfalls paid to older generations from participating workers to general income-tax payers—and without maintaining the connection between individual tax contributions and benefits—would depart from the program's foundational historical design.[67]

More problematically, paying off the legacy debt with general (income tax) revenues is unresponsive to the biggest problem embodied in the legacy debt, which is that it is a debt left by earlier generations to be paid by later ones. The legacy debt is an inequity in the distribution of financing burdens *across* generations. Shifting from payroll tax to income tax financing is instead a shift of financing burdens *within* generations, specifically from payers of payroll taxes to payers of income taxes.[68] An intergenerational inequity cannot be corrected by redistributing the incidence of taxation only *within* generations. The only way the legacy debt can be effectively reduced is by reducing the total amount of unfunded benefit obligations inherited by younger generations from older ones.

Recognizing that the legacy debt cannot be meaningfully corrected by a general revenue bailout does not mean no progressive financing solutions can be considered. For example, increasing the amount of earnings subject to the Social Security tax would reduce the net income losses of workers through Social Security at least insofar as they are expressed as a percentage of their taxable earnings. Put another way, young workers need not lose 3.4 percent of future taxable earnings to Social Security, if the total amount of earnings subject to Social Security taxes is increased. This option, though it carries other policy downsides, would avoid some of the ramifications of ending Social Security's self-financing framework through a general revenue bailout.[69]

In summary, one of the most significant Social Security policy challenges facing lawmakers is that, under current law, Social Security would subtract substantial net income from young and future generations and would thereby be prevented from fulfilling critical societal goals including providing meaningful insurance protection against significant income loss. To ameliorate this problem, lawmakers need to moderate the growth of program costs, especially in the near term to the extent political considerations allow and, most importantly, to avoid

doing anything (such as increasing total near-term benefits) that would worsen intergenerational inequities.

In the final analysis, one critical measure of the quality of a Social Security reform proposal is the extent to which it would ameliorate the projected money's worth decline under Social Security for future generations, after properly accounting for all tax contributions that each generation is required to make.

CORRECTING WORK AND SAVING DISINCENTIVES

Social Security was enacted in 1935 to meet the income needs of American seniors who, in the economic environment of the Great Depression, were deemed unlikely to successfully remain in the workforce.[70] Consequently, little attention was then paid to whether elements of program design collided with the desires of relatively younger, healthier seniors, or those in late middle-age, to continue working.

Social Security was also originally designed to provide a much smaller base of old-age income protection than it provides today. For example, a medium-wage beneficiary retiring in 1940 received a benefit of just $4,960 in 2020 dollars, or less than 23 percent of the average wage at that time.[71] Accordingly, the much larger Social Security program of today reduces both personal saving and labor force participation in ways that previous legislators did not anticipate. These labor and saving disincentives have adverse effects for program participants as well as for the American economy as a whole. An ideal Social Security reform plan would redesign various program elements so that they interfere far less with personal saving and workforce participation in the future than they do now.

For Social Security to undermine labor force participation is a serious economic policy problem. National economic growth derives from productivity growth as well as growth in the size of the workforce. Thus, lower labor force participation reduces the aggregate prosperity in which Americans can share. Economists are increasingly expressing concern about declining US labor force participation rates and about what they portend for Americans' future standards of living.[72] With Social Security being the federal government's most far-reaching program, its undermining of labor force participation is a problem warranting expeditious repair.

Labor force participation disincentives within Social Security are concerning not only because of their aggregate effects but also because they harm individual participants. Individual Americans can be, and are, adversely affected when they are induced to depart permanently from the workforce earlier than is optimal. Retiring and claiming Social Security benefits too soon can increase the risk that an individual will outlive his or her personal savings as well as retirement income from other sources. Research shows that individuals tend to underestimate their own longevity as well as the income they will need in retirement, thereby exacerbating their income security risks.[73] Each additional year of employment earnings while one is still healthy and near one's peak productivity translates into greater financial security toward the end of one's life.[74] Other benefits for American seniors who continue to have work-related

social interactions include personal satisfaction and happiness in addition to sustained cognitive functioning.[75]

Unfortunately, in various ways, Social Security induces healthy and productive individuals to leave the workforce prematurely, thus creating additional costs for the program, the federal budget, the national economy, and the individuals themselves. Repairing these work participation disincentives should be a central focus of Social Security reform. Several such disincentives warrant attention.

ELIGIBILITY AGES

The first and most obvious inducement by Social Security for individuals to end their employment is its obsolete system of eligibility ages. As mentioned earlier in this study, Social Security's original age of earliest eligibility for old-age benefits was set at 65 at a time when cohort life expectancy at birth was 73.4 years, and when life expectancy at age 65 was 13.7 years. Today, cohort life expectancy at birth is a much longer 84.5 years, while cohort life expectancy at age 65 is 20.2 years, yet individuals can now claim old-age Social Security benefits as early as 62 and receive full benefits at just over 66, the latter age having barely changed from where it was set nearly 80 years ago.

It is clear that individuals respond to these powerful signals from Social Security irrespective of their own personal financial circumstances. Age 62 (early eligibility age, or EEA) is the most common age of Social Security old-age benefit claim, followed by 66 (currently the full retirement age, or FRA).[76] As mentioned earlier, between disability benefits and early-retirement benefits, individuals in the 21st century now claim Social Security on average at earlier ages than did the generation that fought the Spanish-American War of 1898. Instead of converting longer, healthier lives into extended periods of earning and saving to support greater retirement income needs, Americans are instead converting virtually all health and longevity gains into far longer periods of retirement over which their limited savings must be stretched.[77] This trend places considerable additional pressure on Americans' income security in old age.

THE BENEFIT FORMULA

Social Security's benefit formula is based on an antiquated construct that reflects informational limitations at the time it was created and that generates an inadvertent but substantial penalty for consistent workforce attachment. Specifically, Social Security benefit levels are calculated by applying a mathematical formula to a worker's career Average Indexed Monthly Earnings (AIME) to produce a number termed the Primary Insurance Amount (PIA). The mathematical formula is a graduated one, which is somewhat analogous to the system of federal income tax brackets. Like the tax code, it is constructed to be progressive—that is, to provide more generous treatment to low-income workers than to high-income workers.

Calculating the AIME itself involves complexities that need not be detailed here other than to note that the worker's earnings from past years are translated into near-current equivalents by indexing to subsequent growth in the national AWI. Most important for our purposes, the AIME is a function only of a worker's 35 highest (after indexing) years of earnings, and it is but a single number for each worker. In other words, for calculating benefits, each worker's entire earnings career is simplified to a single number representing that worker's top 35 earnings years.

This method of calculating each worker's AIME creates work disincentives for younger seniors, typically at the point in life when they are contemplating when to retire. Because the formula is based on an individual's top 35 years of earnings, that individual's return on his or her Social Security payroll taxes drops precipitously when the individual reaches his or her 36th year of work. Whereas during years 1 through 35, each year of earnings can add to one's benefit accruals roughly proportionally, the best one can do from year 36 onward is to replace a lower-earnings year in the benefit calculation with a higher-earnings year, which results in a reduced rate of benefit accrual.[78]

The situation is actually worse than that description may make it sound, because of the benefit calculation's element that indexes past earnings years for subsequent growth in the AWI. As a result, a part-time job that a 60-plus-year-old worker holds in transition to eventual retirement may not even appear among the worker's top 35 earnings years—because after applying the formula's wage-indexation to long-ago earnings, those earnings from decades before may appear larger than the individual's most recent earnings. Accordingly, a senior's additional payroll tax contributions may not earn any additional benefits whatsoever.

These factors may seem like mere arcana, but they matter enormously. Andrew Biggs has calculated that for each additional dollar of payroll taxes paid by working seniors, they accrue only 2.5 cents in additional Social Security benefits.[79] Moreover, research has shown that seniors do respond to these incentives. Harvard researchers Jeffrey Liebman, Erzo Luttmer, and David Seif found "clear evidence that individuals respond to the Social Security tax-benefit link on the extensive margin of their labor supply decisions."[80]

A following section of this study will detail additional problems with this method of calculating benefits, but suffice it to say here that Social Security's crude benefit calculation method is insufficiently precise to reliably steer more generous returns to lower-income individuals. For example, the benefit formula cannot distinguish between an individual who earns $80,000 a year for 15 years, from one who earns $40,000 a year for 30 years, because each is deemed as having equivalent average earnings. As a result, the system can and does steer windfall returns to many individuals who have the luxury of working only sporadically but who nevertheless enjoy a high standard of living, perhaps because they inhabit the same household as someone of high income.

In the next section I will explore how this inefficiency undermines the program's social insurance goals. Here I will only note that the design of the benefit formula undermines work incentives by advantaging sporadic earners over steady ones and that, unlike Social Security's eligibility ages, work disincentives arising from the benefit formula persist throughout a worker's peak potential earnings years.

One possible reform is to have workers accrue additional Social Security benefits linearly with each additional year of earnings—in a manner similar to private sector pension plans—instead of having the worker's accruals plummet once they reach an arbitrarily assigned career duration (whether 35 years or any other). This reform would involve redesigning Social Security's progressive benefit formula so that it applies to each year of earnings, rather than to a worker's career earnings on average.

Imagine, for example, that we start with a benefit formula similar to the one under current law except that it averages a worker's earnings over a 40-year career rather than 35 years.

A reformed benefit calculation could use that same benefit formula but divide it by 40, and then apply the resulting formula to *each* year of earnings separately before *adding up* those annual benefit accruals from each earnings year. Each year's benefits accrued would thereby be locked in and unaffected by averaging with other earnings years. Importantly, benefits would continue to accrue as long as an individual continued to work, thus maintaining work incentives at all ages. A similar reform was proposed in 2016 by the Bipartisan Policy Center's Commission on Retirement Security.[81]

It should be acknowledged that, as with every reform, reform of Social Security's PIA formula would present downsides and require trade-offs. Done in isolation, it would favor men over women (because men on average have larger numbers of earnings years) and could also, depending on the divisor chosen for the annual benefit formula, reduce systemic progressivity. Accordingly, PIA reform is best combined with other changes to increase the progressivity of the numerical benefit formula, which would disproportionately benefit women as well as lower-income workers generally. Conversely, enacting isolated reforms to make the benefit formula more progressive, without also including fundamental redesign of the PIA formula, would further worsen the system's current work disincentives. Both must be done simultaneously to achieve the best of both worlds—that is, improving work incentives and lower-income protections at the same time.

EARLY AND DELAYED CLAIM ADJUSTMENTS

Social Security's inadequate early-retirement and delayed-retirement benefit adjustments also act as functional work disincentives that make it more attractive to drop out of the workforce at earlier ages to enter the ranks of beneficiaries.

Social Security annual benefit levels are statutorily adjusted for age of claim, to prevent individuals from gaming the system by claiming benefits earlier and receiving them for longer. The Actuarial Reduction Factor (ARF) and Delayed Retirement Credit (DRC) respectively adjust annual benefits either downward or upward with the intention of providing the same amount of total benefits over an average lifetime, irrespective of when a recipient first claims. The ARF reduces annual benefits by six and two-thirds percentage points for each year benefits are claimed before full retirement age (up to three years)—in other words, by 20 percent for claims three years early. If one claims benefits five years early, the annual benefit reduction is 30 percent. The DRC increases annual benefits by 8 percentage points for each year by which benefit claims are delayed after the full retirement age, up to age 70.[82]

In general, if one expects to live for a shorter-than-average life span, one would expect higher lifetime benefits by claiming benefits early, whereas if one expects to live longer than average, one would maximize lifetime benefits by delaying one's claim. Recent research by retirement experts Alicia Munnell and Anqi Chen suggest that the current-law early-retirement reduction factors are slightly too large to hold expected lifetime benefits constant as a function of claiming age for an average worker, given observed trends in longevity and interest rates.[83]

Both the ARF and the DRC adjustments are inadequate, however, to achieve true neutrality with respect to individual retirement decisions, because they aim only to keep constant the total benefits received in retirement without adjusting

for the additional payroll taxes that a worker pays if continuing employment. Consequently, delaying benefit claims will cause little to no change in one's expected lifetime Social Security benefits but will cost the workers involved additional years of payroll tax contributions. This fact makes it disadvantageous for many workers to continue working and paying payroll taxes to Social Security. Moreover, as noted previously, Liebman et al. have shown that workers respond to these incentives by withdrawing from the workforce and filing claims.[84] An optimal Social Security system would apply increased penalties for early benefit claims as well as increased rewards for delayed retirement claims in order to better reflect the additional payroll taxes that workers pay when they remain in the labor force.

These work incentive problems are further exacerbated by interactions between Social Security's disability and old-age benefit formulas. Disability eligibility criteria become more lenient as an individual approaches the FRA, and an individual who qualifies for disability benefits after EEA is not subject to the ARF.[85] The purpose of these rules is to prevent discontinuities in benefit levels when an individual converts from disability benefits to old-age benefits at the FRA, but one consequence is to give individuals incentives to file for disability benefits rather than for old-age benefits once they reach the EEA.

THE RETIREMENT EARNINGS TEST

Under current law, Social Security recipients are subjected to a retirement earnings test (RET) if they claim benefits before full retirement age. Technically, the RET is not so much a benefit penalty as a benefit deferral: that is, participants lose some of their Social Security benefits during the years that they have earnings above annually indexed thresholds, and these temporarily forgone benefits are added back to their payments after they reach full retirement age.[86] The policy rationale behind the RET is to provide fewer benefits when seniors do not need them because they are still working, and more benefits later when seniors are older, have less other income, and are in greater need.

Though the intention of the RET is benign, its incentive effects are perverse. It is confusingly structured and presented, thereby leading participants to misperceive it as a pure tax rather than as a benefit deferral. The RET also communicates the message to younger seniors who are supplementing their Social Security benefits with other earnings that they should instead leave the workforce and retire. Heeding that message paradoxically reduces their retirement income security compared to a situation in which seniors have more incentives to continue working, earning, and saving while healthy and capable. Although research about the effect of the RET on retirement income security shows unclear results, repealing it could be another small step forward in correcting Social Security's flawed work incentives.

PAYROLL TAXES

To address the problematic work incentives facing younger seniors, some Social Security experts have proposed relieving them from all or a portion of the Social Security payroll tax. It is especially difficult to justify continuing to subject senior workers to the disability portion (1.8 points) of the payroll tax after they cease to be eligible for Social Security's disability benefits.[87] Another option is simply to exempt workers from the Social Security payroll tax once they have completed a full working career.

One version of this idea would exempt working seniors from the payroll tax when they reach benefit eligibility age.[88] That option, however, has the downside of acting as a work incentive only *after* that specific age is reached, in addition to its discriminating by age. A more precise version of this reform is to exempt workers from the payroll tax once they have earned "paid up" status, for example by contributing payroll taxes for 45 or 40 years. Versions of this proposal have been put forward by economists including Mark Warshawsky, as well as the team consisting of Gopi Goda, John Shoven, and Sita Slavov.[89] This version would have the additional advantages of operating as a work incentive throughout one's career, avoiding age discrimination, and conditioning payroll tax relief on the worker's having made prior contributions.

LUMP SUM PAYMENTS

As a further incentive for workers to delay retirement benefit claims, another proposal worth considering is to offer Social Security's DRC as an optional lump sum. Currently, only a small percentage of workers delay their benefit claims past the full retirement age because apparently they do not regard a slight increase in their monthly payment as a sufficient reason to do so.[90] Economists Raimond Maurer, Olivia Mitchell, Ralph Rogalla, and Tatjana Schimetschek have found that offering an actuarially fair lump sum (i.e., a lump sum equal to the present value of Social Security's current DRC) would induce workers to delay benefit claims on average by nearly half a year.[91] This finding indicates that a lump sum option would be a powerful incentive for continued labor force participation, one that could be enacted without an actuarial cost to the Social Security system. Remarkably, Mitchell and her research group found that even a lump sum that is as much as 13 percent smaller than a fair actuarial value could still have a positive effect of extending working lives and delaying benefit claims.[92]

A lump sum DRC option could serve as a counter to Social Security's existing disincentives for workforce participation or, better yet, could act as a positive incentive in a reformed system in which existing disincentives have been corrected. It could also offer these incentives without imposing new hardships on workers by simply offering them a potentially more attractive choice.

BENEFIT GROWTH RATES

Social Security's effects on labor force participation and personal saving cannot be fully understood or managed without attention to benefit levels themselves. Many financial planners recommend that workers save enough money so that annual income during retirement is 70–80 percent of one's previous employment earnings.[93] If Social Security by itself provides retirement benefits that approach or exceed these levels, it acts as a powerful disincentive for workers to amass individual savings or to remain in the workforce past the age of benefit eligibility. Put another way, if Social Security provides benefits that exceed 70–80 percent of prior worker earnings, then workers cannot save money or continue in the workforce without experiencing lower standards of living as workers than those they anticipate as beneficiaries.

The income replacement rates that Social Security should provide to participants are an important policy call and value judgment, and there are no objectively correct answers. Nevertheless, policymakers should be cognizant

TABLE 2. SCHEDULED SOCIAL SECURITY BENEFITS AS A PERCENTAGE OF AVERAGE CAREER EARNINGS (INFLATION-ADJUSTED) FOR AMERICANS BORN IN THE 1960S

Household earnings quintile	Average percentage of preretirement earnings replaced by Social Security	Percentage of 70% earnings replacement rate target to be met by Social Security alone	Percentage of 70% earnings replacement rate target to be met by non–Social Security sources	Percentage of 80% earnings replacement rate target to be met by Social Security alone	Percentage of 80% earnings replacement rate target to be met by non–Social Security sources
Lowest	80	114	(<0)	100	0
All quintiles	55	79	21	69	31
Highest	34	49	51	43	58

Note: Career earnings are defined as earnings from ages 22 to 61.

Source: Congressional Budget Office, "Social Security Replacement Rates and Other Benefit Measures: An In-Depth Analysis," April 2019, 18.

of certain mathematical realities. For reasons described in the previous paragraph, how closely Social Security replacement rates approach 70–80 percent affects the amount of retirement savings remaining at the discretion of American households.

Indeed, wherever Social Security's income replacement rates exceed 35–40 percent, participants expect to receive a majority of their necessary retirement income from Social Security alone and to need less from all other sources combined. In addition, the higher the income replacement rates that Social Security provides, the heavier the tax burdens required to finance these benefits. These tax burdens workers carry act as a further disincentive for personal saving and labor force participation.

It is reasonable to posit that lower-income Americans will need relatively more assistance from Social Security (and thus should receive income replacement rates from the program exceeding 35–40 percent), whereas the upper half of Americans by income are better able to finance the majority of their own retirement needs without requiring an income replacement rate exceeding 35–40 percent. By the same token, it is reasonable to conclude that Social Security's offering income replacement rates in excess of 70–80 percent for anyone, or in excess of 35–40 percent for higher-income Americans, is suboptimal as a core component of a national retirement income strategy.

Policymakers, with the approval of the voting public, must determine how much of Americans' retirement income should come from Social Security and how much from other sources. Having most retirement income come from Social Security imposes a cost to Americans' aggregated economic well-being, because Social Security is not a mechanism for building national savings, but instead it promises to deliver retirement income without requiring or facilitating such saving. Policymakers must decide how much of the national retirement income strategy should be concentrated on a program that, unlike retirement saving vehicles, does not itself add to the total national capacity to finance retirement income.

The CBO has published tables that express Social Security benefits as a percentage of participating workers' average preretirement earnings, adjusted for inflation. The CBO analyses group US households into quintiles, ranked by their earnings income levels. Table 2 summarizes CBO's findings.

The data depicted in table 2 bear important policy implications. One of the most striking pieces of information is that the lowest-earning

quintile of American households, on average, will meet or exceed their target retirement income replacement rates on the basis of Social Security benefits alone. This fact, of course, does not suggest that the households' Social Security benefits are necessarily sufficient to meet retirement income needs. What it means, rather, is that workers in these households already expect equal or better standards of living in retirement than they can experience as a result of their own earnings, an expectation that creates substantial barriers to their personal saving and continued labor force participation.[94]

In this context, it is unsurprising that long-term saving rates among low-income households should be as low as they are, because these households have not only little capacity but also little incentive for discretionary long-term saving that would further reduce their standards of living during their working years.[95] If such households face inadequate income in retirement, it is primarily because they have inadequate earnings *before* retirement, a problem that cannot be solved by Social Security's further rearranging income between working years and retirement years.

Also striking is that Americans born in the 1960s expect median Social Security benefits that are 55 percent of the inflation-adjusted value of their average career earnings.[96] This number equates to between 69 percent and 79 percent of Americans' target retirement income being provided by Social Security, depending on whether households are aiming for a retirement income replacement rate of 70 percent or 80 percent. Put another way, this means that Americans on average have an incentive to save only enough outside of Social Security to finance a mere 21–31 percent of their retirement income needs, a substantial crowding-out effect that is evidenced in Social Security's observed negative effect on national saving.[97]

Under current law, even the highest-earning quintile is only required to manage only slightly more than half of their retirement income planning on their own. Social Security alone provides 43–49 percent of the top income quintile's appropriate retirement income target. It is surely worth examining whether American society believes that Social Security should provide nearly as much retirement income to the wealthiest Americans as they need to generate for themselves.

The numbers in table 2 understate these points as they apply to Social Security's future because the program's income replacement rates are rising over time. The median replacement rate for workers born in the 1980s is projected to be 60 percent, somewhat higher than the 55 percent paid to those born in the 1960s. The extent to which Social Security crowds out individual saving and labor force participation is expected to worsen as its cost rates rise significantly while replacement rates drift somewhat upward.

An important caveat is that the numbers in table 2 show scheduled Social Security benefits rather than the lower level of payable benefits that would actually be provided upon projected trust fund insolvency. This substantial discrepancy between Social Security's scheduled and payable benefits creates additional adverse effects. The scheduled benefit levels communicated to individual workers on their benefit statements would, if they were guaranteed to be paid, act as a substantial disincentive for personal saving.

The amounts that actually will be paid, however, are unknown, and are a function of yet-to-be-determined political events. The benefits that Social Security ultimately actually pays might require workers to save more than

they do now.[98] However, workers are not being provided with clear information upon which to make such decisions. Worker interests would be better served if benefit schedules were realigned to be consistent with what Social Security will actually be able to pay.

Ideally, Social Security's scheduled and payable benefits would be aligned within a sustainably solvent system. The political compromises required to achieve this objective will undoubtedly require a blend of tax revenue increases and provisions to moderate benefit growth. Putting political considerations aside, and examining Social Security solely from the standpoint of repairing work and saving disincentives, would argue for some deceleration of its rate of benefit growth.

Specifically, if policymakers adopt a goal of having the average participant generate even as little as one-third of his or her own target retirement income outside of Social Security, scheduled benefits would need to be gradually reduced by about 20 percent, which would bring the median replacement rate for young and future workers from about 60 percent down to 48 percent. Whether or not such substantial changes are pursued, it is apparent that a system that preserves reasonable incentives for saving and workforce participation would close the solvency gap primarily by moderating benefit growth, more than by raising taxes.

It is common for Social Security proposals to include benefit increases for low-income individuals.[99] However, caution is warranted when considering such provisions, in order to ensure that work and saving incentives are not fatally undermined by maintaining Social Security income replacement rates above 70–80 percent for substantial portions of the worker population.

In summary, the need to reform Social Security to close the financing shortfall creates an opportunity to address various saving and workforce participation disincentives that have mushroomed within the program in recent decades. Lawmakers should take care not to worsen these problems by broadly expanding benefit promises. Optimizing Social Security's operations from a work and saving incentive perspectives would require moderating benefit growth compared to current law, as well as redesigning Social Security's benefit formula and enhancing the rewards offered for delayed retirement and benefit claims.

RESTORING PURPOSE TO INCOME REDISTRIBUTION

Social Security policy debates have a tendency to focus on aggregates, such as how fast total benefit payments would grow under alternative proposals compared to benefits scheduled under current law. This tendency oversimplifies, to the detriment of public understanding. A more informative discussion would center on how the program treats individuals who participate in it, as well as on whether the program is most usefully serving a well-defined and coherent social policy purpose.

These questions cannot be answered by sweeping pronouncements about whether reform proposals would cut or increase benefits as a whole. Such statements are often misleading because they too often compare proposals to benefit schedules that the program cannot meet under current law, rather than realistically comparing to what current Social Security pays today and can afford to pay in the future. But more fundamentally, such comparisons implicitly assume that current benefit schedules are a positive ideal to be maintained or surpassed in magnitude. A more useful standard for comparison would be with an optimized Social Security program that serves societal goals most efficiently and treats individuals most equitably.

Critical to any evaluations is a recognition that Social Security, as an income transfer program, is a zero-sum game at best: no participant can gain net income through Social Security without another person losing at least as much. This limitation means that the national welfare is not necessarily advanced by the program being bigger (or smaller): rather, it means that the national welfare is advanced only when Social Security's redistribution of income efficiently serves shared policy purposes and avoids redistribution of income that runs counter to these purposes.

Analysis reveals that Social Security engages in many forms of income redistribution that undermine national goals of increasing participant security against the risk of poverty in old age, widowhood, or disability. Specifically, Social Security engages in various forms of regressive income redistribution that operate counter to widely shared perceptions and goals. Instead of further increasing benefit payments across the board and thereby increasing the counterproductive income transfers, responsible Social Security reform would moderate cost growth while more efficiently targeting resources on households of greatest need and thereby improving program efficacy. In this context, a more effective Social Security system from a social insurance standpoint would also be a more efficient and less expensive one.

There are countless examples of Social Security engaging in regressive or haphazard income

redistribution. Pulling back on these income transfers would render the program more effective in meeting social insurance goals.

One example is the current design of Social Security's nonworking spouse benefit. The current nonworking spouse benefit reflects a crude and relatively arbitrary decision to pay a stay-at-home spouse a benefit equal to half the benefit earned by the primary wage earner. The nonworking spouse benefit is a rough proxy for crediting the value of stay-at-home work and child-rearing and reflects outdated societal assumptions about American household structures, such as that the husband has gainful employment and the wife stays at home. Indeed, Social Security spousal benefits were originally provided to wives only, with husbands not made eligible until the 1950 amendments.[100]

The assumptions underlying the nonworking spouse benefit's design are obsolete in several respects, notably in overlooking modern realities such as that parenting is done not only by stay-at-home spouses, but also by single heads of household and by both halves of two-earner couples. It should be recognized that a single head of household who raises children to adulthood—and whose children grow up to become payroll tax-paying workers—is making a tangible additional contribution to the financial health of Social Security. Yet, this single head of household receives no additional benefits for these contributions, while the nonworking spouse benefit is structured so that it can be received by any spouse, regardless of whether he or she raises children to eventually become taxpaying workers.[101]

More concerningly from the perspective of this section, the nonworking spouse benefit is regressive at the same time that it acts as a work disincentive. Although the basic Social Security benefit formula is intended to be progressive, a high-income one-earner couple receives (because of the nonworking spouse benefit) nearly the same return on their contributions to Social Security as a low-income single worker.[102] The benefit paid to the nonworking spouse of someone who consistently earns the maximum Social Security taxable wage is by itself substantially larger than that earned by a single low-income worker (e.g., someone earning half the national average wage or less) over a full career of payroll tax contributions.[103] These are substantial regressive redistributions of income paid to individuals who need them least.

In addition to favoring higher-income households, the nonworking spouse benefit acts as a work disincentive. As a general rule under current law, a married couple's returns on their contributions to Social Security are larger in proportion to how unequal their earnings are. The highest returns are paid to households where one spouse stays out of the workforce entirely. The smallest returns are paid to households where both halves of the couple have equal earnings. This trend occurs because the lesser-earning spouse starts out with a benefit equal to 50 percent of the benefit accrued by the higher earner, even before the secondary earner contributes a dime of payroll taxes. The consequence is that a substantial portion of the lower-earning spouse's contributions earn no additional benefits for the married couple. Again, though this feature of Social Security was intended in part to recognize the value of child-rearing, its structure is largely disconnected from any relationship to child care and instead primarily serves as a regressive windfall for higher-income one-earner couples.

For these reasons, a significant amount of the money spent by Social Security on nonworking spouse benefits ($33.3 billion in 2019) fails

to advance social insurance purposes.[104] This is why many reformers have proposed limiting the magnitude and scope of the nonworking spouse benefit.[105] One example of such a proposal would be to limit the size of the spousal benefit so that it does not exceed that which is paid to a single worker earning the minimum wage over his or her entire career. It is difficult to devise a compelling policy rationale for paying a nonearning, nontaxpaying spouse living within a high-income household a benefit exceeding that which is earned by poor workers through a lifetime of payroll tax contributions.[106]

Social Security also fails to accurately target its intended progressive income redistribution on households of greatest need. As noted earlier, a large part of the cause of this failure is that Social Security's benefits are based on career-average earnings rather than on annual income. A specific example provided earlier in this study is worth repeating: the benefit formula does not distinguish between an individual who earned $80,000 a year for 15 years from an individual who earned $40,000 a year for 30 years, even though the sporadic $80,000 earner is more likely to live in a higher-income household. Bear in mind that Social Security's benefit formula is progressive and provides more generous benefit accruals for those with less average income. However, the formula mistakes certain higher-earning individuals, who can afford sporadic absences from the labor force (because they share a household with a higher earner), as being just as needy as lower-earning individuals who must work every year.

These inefficiencies in Social Security's targeting of benefits are not merely theoretical but are observed in the data. Consider, for example, the workers identified by Social Security as "very low wage" workers—that is, workers whose career earnings (AIMEs) average only about 25 percent of the national average wage. The workers with these earnings profiles are on the receiving end of substantial income redistribution, and they earn much higher returns on their payroll tax contributions than do most other Americans. How many of these workers are relying on their own Social Security payroll tax contributions to provide them with most of their retirement income?

As it turns out, only a small minority of these beneficiaries are actually living within such income limitations. Of those described as "very low income" workers, more than half have low career-average incomes simply because they worked for 25 years or fewer. Of these, roughly 32 percent are foreign born, meaning that they may have spent parts of their careers earning income abroad. A large portion of the remainder are either entitled to benefits on the basis of another household member's higher earnings or are subject to the Windfall Elimination Provision (WEP) because of time spent in state or local employment where they earned a government pension without paying taxes to Social Security.[107]

For this low-income group with gaps in their covered earnings, as a whole only about 26 percent are neither foreign born nor dually entitled nor subject to the WEP under state or local employment.[108] Therefore, at least 74 percent likely have substantial income from other sources, with the actual percentage likely being higher than that (because some earners in this category may share a household with another wage earner despite not being dually entitled). In summary, because Social Security's benefit formula is based on career-average earnings, it does an inefficient job of identifying households that are in greatest need.

All this information suggests that policymakers should take care to review and possibly modify Social Security's benefit formulas to

achieve their desired income distribution. The aforementioned reform to tie benefit accruals to annual earnings rather than to career-average indexed earnings not only would improve work incentives but also would likely be substantially progressive in reducing returns to sporadic higher-income earners. Moreover, unless any proposed benefit increases are carefully targeted to focus on low-income individuals with at least 30 years of payroll tax contributions, more than half of the beneficiaries of such increases would likely be individuals with substantial sources of retirement income outside of Social Security.

One of the most difficult design challenges in Social Security reform is to target any benefit increases so that they are concentrated on households of greatest need without further undermining work and saving incentives. As mentioned earlier in this study, maintaining workforce participation rates is one of the leading economic policy challenges of our time, in part because national economic growth is (other factors being equal) proportional to workforce growth and also because employment correlates positively with personal health and happiness. In addition, extended workforce participation reduces risks that an individual will outlive his or her personal savings. Simply increasing Social Security benefits for those with lower AIMEs without fundamental benefit formula reforms would both lessen workforce attachment and fail to target benefits where they are needed. Social Security reform proposals should be carefully analyzed to ensure that they allow lower-income Americans to accrue benefits at reasonable rates with each additional year of employment earnings.

Social Security redistributes income in many other ways that reflect deliberate societal intent: for example, from younger generations to older ones and from earlier in a worker's life to later, after he or she permanently departs the workforce. But while these forms of income redistribution are generally intentional, the degree of such redistribution should nevertheless always be subject to continual review to determine whether it is inadequate or, alternatively, excessive.

As explained earlier, ample reason exists to believe that the amounts of certain forms of income redistribution by Social Security exceed that which can be justified in terms of its policy purposes and societal intent. For example, continuing the amount of redistribution that occurs along generational lines under current law would cause workers entering the workforce from this day forward to have a net income loss through the program exceeding 3 percent of all workers' future taxable earnings. At the same time, current benefit formula indexation methods cause growth in worker standards of living to lag behind Social Security benefit growth rates. These trends suggest that Social Security would more efficiently support societal policy purposes if the growth of certain forms of income redistribution were scaled back.

DEVELOPING A REFORM FRAMEWORK

In view of the policy challenges reviewed in the preceding sections, what would an optimal Social Security reform proposal achieve? The list in the following box summarizes various attributes of a hypothetical reform plan that would improve Social Security's financial soundness, efficiency, and efficacy.

This section will review specific policy levers lawmakers can pull to achieve the listed objectives, but first, some general observations may be useful. Simultaneous advancement of several of the listed objectives could be achieved by slowing the projected growth of program obligations through a combination of eligibility age adjustments and moderated per capita benefit growth. Specific objectives furthered by moderating system cost growth include improving the net treatment of younger generations, ameliorating existing work and saving disincentives, limiting regressive income transfers, better enabling worker standards of living to keep pace with beneficiaries' standards of living, and having wealthier generations be relatively less reliant on Social Security. Restraining cost growth would also lessen the need and temptation to consider bailing out Social Security with other government revenues, which would have the effect of terminating its self-financing, earned-benefit foundation as well as the income security that comes with it.

Several obvious approaches to reform are suggested by the list of policy objectives. For example, gradually adjusting Social Security's early and full eligibility ages to better align with demographic trends would by itself further several of the listed objectives, including stabilizing cost growth, reducing the risk of poverty among seniors, ameliorating work and saving disincentives, and stabilizing the relationship between worker and beneficiary annual incomes.

Reforming the Consumer Price Index used to calculate Social Security COLAs would improve intergenerational equity, help to stabilize cost growth, and increase the accuracy of Social Security's indexing methods. Progressive changes to Social Security's numerical benefit formula could also advance several of the goals listed, including reducing the risk of poverty among seniors and concentrating the burdens of achieving solvency on higher-income Americans (though care must be taken not to further worsen existing work and saving disincentives in the process).

Many individual reform provisions could advance several policy ideals simultaneously. No single provision will achieve all of them. More typically, a specific provision might advance one objective while backing away from another. The critical test of a Social Security reform proposal is how well the various provisions work together, to achieve the listed objectives insofar as possible.

CHARACTERISTICS OF AN IDEAL SOCIAL SECURITY REFORM PLAN

- Achieve sustainable solvency within Social Security's historic financing structure: close the program's long-range actuarial imbalances in each of its trust funds and ensure that annual dedicated tax collections meet or exceed annual benefit obligations through the end of the trustees' long-range valuation period.
- Maintain the statutory connection between worker contributions and benefits by providing that all wages subject to the Social Security tax continue to earn benefits.
- Sustain Social Security without other subsidies from the government's general fund or from unrelated taxes, which would dismantle its self-financing, earned-benefit foundation.
- Moderate the program's cost growth rate so that it does not perpetually exceed the rate of growth of US GDP.
- Provide for comparable net treatment of current and future generations by spreading responsibility for closing the Social Security shortfall as widely and fairly as possible.
- Allocate responsibilities for closing the Social Security shortfall progressively to the extent the body politic deems desirable and achievable.
- Reduce the risk of poverty among American seniors and others who can no longer work.
- Target any benefit increases on the most vulnerable individuals and groups, including low-income households, individuals of very advanced age, and divorced, widowed, and never-married women.
- Correct existing work disincentives, especially those facing workers in late middle age, by changing the design of Social Security's benefit accrual formula as well as other reforms.
- Reflect accurate measures of consumer price inflation and other relevant economic factors.
- Avoid sudden changes in benefit levels, for which individual beneficiaries and workers cannot adequately plan.
- Reduce regressive and counterproductive income redistribution.
- Stabilize the relationship between worker standards of living and their subsequent standards of living as beneficiaries: that is, adjust cost growth rates, eligibility standards, and tax burdens so that worker standards of living (net of Social Security taxes) are not persistently depressed compared to annual benefit levels.
- Stabilize the relationship between the number of years workers spend in the labor force and the number of years they later spend as retired beneficiaries.
- Reflect deliberate policy with respect to workers' incentives and ability to engage in other retirement saving outside of Social Security.
- Broaden the base subject to the Social Security payroll tax to reduce pressure to raise the tax rate and to limit generational net income losses as a share of taxable worker wages.
- Provide that later generations become relatively less reliant on Social Security to the extent that their real incomes rise.
- Ensure that initial benefit levels do not decline compared to price inflation, from one retiree cohort to the next.
- Enact such reforms as soon as possible to maximize the chances of achieving these results.

LEVER 1: ELIGIBILITY AGES (EARLY ELIGIBILITY AGE AND FULL RETIREMENT AGE)

Under current law, Social Security Old-Age benefits can be claimed as early as 62 by primary workers, while the age of eligibility for full benefits (currently 66 and 8 months for workers turning 62 in 2020) is in the process of phasing to 67.[109] Monthly benefit payments are reduced if claimed before an individual reaches FRA and are increased if claimed after FRA (up to age 70). As explained earlier in this study, Social Security's eligibility ages have not been adjusted sufficiently to reflect ongoing changes in health and longevity.

One possible reform is gradually to adjust both the EEA and FRA upward so that Americans' increasing longevity is not translated solely into increased numbers of years collecting benefits but is at least partially manifested in longer working careers. Such a change would improve Social Security finances while increasing retirement income security. It would also mitigate the worsening relationship between worker tax burdens and annual retirement benefits under current law.

Obviously, whether Social Security's eligibility ages should be adjusted upward is a subjective value judgment. There is no objectively right answer as to whether to do so, or how much. Yet at the same time, many commonly expressed arguments against raising Social Security's eligibility ages reflect misconceptions about the program and about how Americans would be affected by such a change.

One such misconception is the common assertion that raising Social Security eligibility ages is nothing more than a benefit cut.[110] This assertion is incorrect because changes to claim ages have different effects than do changes to annual benefit levels or to the benefit formula. The three essential factors in the retirement income equation are the following: first, the amount of earned income that must be saved for retirement; second, the annual retirement income; and third, the number of years over which retirement income is to be stretched. A larger number of years spent in retirement reduces the amount of annual retirement income that a given amount of preretirement savings can finance.

In contrast, containing growth in the durations of individual retirements renders it more possible for retirees to derive *increased* income security from a given amount of retirement savings. Thus, to refer to delayed retirement as a benefit cut is to neglect the critical respect in which postponing benefit claims can enhance annual retirement income security and reduce the risk of poverty in old age.[111]

Another common misconception about proposals to raise eligibility ages is that they would be unfair to workers in physically demanding jobs and lower-income workers who have shorter life expectancies and thus have fewer years to collect Social Security benefits.[112] This objection is fueled by the well-documented phenomenon that higher-income individuals live longer than do lower-income individuals, and that this longevity differential is increasing.[113] Some have even suggested that Social Security eligibility ages should be different for workers in different kinds of jobs, depending on the amount of physical labor involved.[114]

It is a non sequitur, however, to leap from the empirical observation of longevity differentials to the policy conclusion that Social Security's eligibility ages must not rise or that they need to be set differently for different occupations and income levels. Such policy conclusions do not

follow from the observations because of how Social Security's benefit formulas and statutory eligibility ages interact.

A first important point to understand about the policy choices in play is that observed longevity differentials do not indicate whether Social Security's current eligibility ages are optimally set. A longevity differential between high-income and low-income individuals does not tell us whether Social Security's FRA should be 62, 65, 67, 70, 75, or some other age. The same longevity differential exists regardless of where Social Security's FRA is set and in no way points to the preferability of the one set in current law.

A second important point is that under Social Security law, individuals can choose to claim old-age benefits at any age after the EEA (now 62). This choice can be informed by how long an individual expects to live. Someone facing shorter life expectancy has the incentive and opportunity to claim benefits before FRA, while an individual who expects to live longer than average can choose to delay retirement and thereby collect a higher annual benefit.[115] It is not necessary to prescribe different retirement ages for different occupations to provide the flexibility for individuals to claim benefits at different ages.

Moreover, the current EEA of 62 is three years younger than was originally available under Social Security. The current EEA could, in theory, rise by a full three years before 21st century Americans would be compelled to delay claiming benefits even a day later in life than someone born in 1875. Needless to say, even those who are most concerned about longevity differences do not claim that any significant demographic group today experiences shorter life spans than they did when the first Social Security recipients received benefits in 1940.

Accordingly, concerns about lower-income Americans receiving less from Social Security because of shorter lives do not mean that current eligibility ages should remain where they are nor that they should be different for different income levels or occupations. Taking care of those on the low-income end can be accomplished more efficiently simply by changing the benefit formula to be more progressive, while preserving workers' ability to retire and claim benefits at the right time for their individual circumstances. In this way, lower-income workers in physically demanding jobs could recover the value of their payroll tax contributions much faster than higher-income individuals claiming at the same ages could do. It is a very simple thing to include progressive benefit adjustments to protect low-income households in any legislation that adjusts Social Security's EEA and FRA to each become several years higher than they now are.

A third important point is that, although physical incapacity is a hardship for any worker, Social Security's old-age eligibility thresholds are not designed to handle such situations. To the contrary, covered individuals who are physically unable to continue working are the province not of Social Security's old-age insurance but its disability program. Social Security's criteria of eligibility for disability benefits become more lenient as individuals approach retirement age, making it easier for those facing physical incapacity toward the end of their working careers to be approved for benefits.[116]

No persuasive case has been presented as to why individuals younger than 65 should be receiving Social Security old-age benefits rather than disability benefits. Certainly, there is no evidence that more American workers under 65 suffer from incapacitating physical wear today than was the case during Social Security's

earliest years when 65 was the youngest age at which individuals could claim old-age benefits. In 1950, the labor force participation rate for Americans 65 and older was 26.7 percent and was 45.8 percent among males.[117] By 1980, these percentages had declined to 12.5 percent and 19.0 percent, respectively. This drop was not because Americans had become physically more vulnerable during the intervening 30 years, but rather because, as a Bureau of Labor Statistics publication explains, "Social Security retirements affected labor force participation rates."[118]

Labor force participation among those younger than 65 did not begin to decline until Social Security began to offer early benefit eligibility at 62, which it did for both sexes by 1961. Labor force participation among US males ages 55–64 was 87.3 percent in 1960 but is a much lower 71.2 percent today.[119] The primary reason Americans leave the workforce at younger ages now than 50 years ago is not because of declining physical capacity but because federal retirement policy pays them to do so.[120]

In any case, it would be an extremely bad policy for general eligibility for Social Security's old-age benefits to be set on the basis of the atypical minority of workers who are physically incapable of remaining at work. Doing so would mean paying the vast majority of healthy workers not to work as well. A well-designed Social Security policy would have the disability program provide for individuals suffering from physical breakdown, while the old-age program provides instead for those able to work to a standard retirement age.

Again, the specifics of where Social Security eligibility ages should be set is a value judgment, with no objectively correct answer. Policymakers must be cognizant, however, that the more savings come from constraining growth in the number of retirement years, the less any solution need rely on tax increases and annual benefit reductions.

Changes in the EEA and FRA would have different effects, respectively, on Social Security financing. Increasing the EEA would not produce a scorable improvement in Social Security's actuarial balance, because individuals who opt for the earliest possible benefit claim are subjected to less of an actuarial benefit reduction as the EEA moves closer to the FRA.[121]

Accordingly, raising the EEA would result in higher annual benefits, reduced poverty among seniors, lengthened working careers, and an improvement in the federal budget balance, but it would not help to close Social Security's actuarial shortfall. Raising the FRA, however, helps close Social Security's actuarial imbalance because it reduces the amount of benefits paid at any particular age of claim. The combination of an EEA and an FRA increase can produce the best of both worlds: a lessening of Social Security's financing shortfall simultaneous with a reduction in senior poverty.

Although this section of this study quantifies the expected actuarial improvements associated with various possible policy reforms, it generally does so for purposes of illustration rather than as a policy recommendation. However, one obvious and overdue reform would be to gradually increase Social Security's EEA from its current 62 to at least 65, where earliest eligibility was initially set back in 1935. If, after Social Security's FRA reaches 67 under current law in 2022, the EEA is phased upward by two months a year in 2023–2034, then by 2034 Social Security's EEA and FRA would be 64 and 67, respectively. At that point, the EEA would still be set at a younger age (64) than at Social Security's inception, while the FRA (67) would be no higher than under current

TABLE 3. ESTIMATED PERCENTAGES OF SOCIAL SECURITY SHORTFALL ELIMINATED BY ILLUSTRATIVE ELIGIBILITY AGE CHANGES

Provision	Percentage of 75-year actuarial shortfall closed	Percentage of annual cash shortfall closed by 75th year
Increase EEA by 2 months per year to 64 from 2023 to 2034; increase EEA/FRA 1 month per year to 65/68 from 2035 to 2046; increase EEA/FRA 1 month per 2 years after 2046	13	27

Source: Author's calculations, making use of the projections at Social Security Office of the Chief Actuary, "Summary Measures and Graphs," Solvency Provision C2.2, accessed August 5, 2020, https://www.ssa.gov/OACT/solvency/provisions/charts/chart_run138.html.

law. After that point, both the EEA and FRA could continue to rise gradually upward, until the EEA reaches at least 65 by the middle of the 21st century.

Many proposals would increase Social Security's FRA more aggressively than illustrated here.[122] The following describes a modest policy change based on the example in the previous paragraph, which would maintain a roughly constant ratio between Americans' years spent working and those spent in retirement in the latter half of the 21st century. Current estimates are that this ratio would remain roughly constant if the FRA were to increase by one month every two years.[123] Accordingly, consider the following adjustments to Social Security's eligibility age schedules:

1. From 2023 to 2034, gradually adjust Social Security's EEA by two months each year, so that the EEA and FRA are returned to being three years apart (64/67) by 2034.
2. From 2035 to 2046, gradually adjust both the EEA and FRA by one month a year, so that they reach 65/68 by 2046; at this point, Social Security's EEA will once again be 65, where it was in 1940.
3. After 2046, gradually increase Social Security's EEA and FRA by one month every two years, or roughly the amount estimated to hold constant the average ratio of Americans' number of retirement years to their number of working years.

Though these changes would be modest and gradual, they would lessen Social Security's actuarial shortfall as estimated in table 3 while increasing seniors' income security.[124] These estimates, like those in subsequent tables in this study, are based on the latest available data from the 2020 trustees' report. Consequently, the estimates likely overstate the percentage of the shortfall that the measures would close, after taking into account further deterioration in Social Security's finances expected to result from COVID-19's effects on the national economy. Also, none of the measures can now eliminate nearly as much of Social Security's shortfall as they would have if they had been enacted earlier, especially before the large baby boom generation began to retire.

LEVER 2: WORK INCENTIVE CORRECTIONS

As with eligibility age changes, corrections of Social Security's benefit formula to improve returns on work are desirable components of a solvency reform package, in part because these corrections would slightly lessen the proportion of the financial shortfall that must be repaired by tax increases and general benefit cuts, while also

TABLE 4. ESTIMATED PERCENTAGES OF SOCIAL SECURITY SHORTFALL ELIMINATED BY ILLUSTRATIVE WORK INCENTIVE REFORMS

Provision	Percentage of 75-year actuarial shortfall closed	Percentage of annual cash shortfall closed by 75th year
Mini-PIA: Divide current PIA formula by 40; apply it additively to every year of annual earnings.	7	10
Increase ARF for early claims and DRC for delayed claims.	8	7
Offer DRC as a lump sum.	0	0
Repeal the RET.	0	0
Exempt those with 45 years of payroll tax payments from the payroll tax.	−19	−17
Exempt those who have aged out of eligibility for DI benefits from the DI payroll tax.	−3	−2

Note: Terms include Actuarial Reduction Factor (ARF), Disability Insurance (DI), Delayed Retirement Credit (DRC), Primary Insurance Amount (PIA), and retirement earnings test (RET).

Source: Author's calculations, based on estimates published by the Social Security Administration Office of the Chief Actuary. A specific estimate for the payroll tax exemption after 45 years of contributions can be found at Social Security Office of the Chief Actuary, "Summary Measures and Graphs," Solvency Provision F2, accessed August 5, 2020, https://www.ssa.gov/OACT/solvency/provisions/charts/chart_run328.html.

increasing retirees' income security and contributing to economic growth.

An earlier section of this study reviewed several possible reforms to improve Social Security's work incentives (or, more precisely, to lessen its work disincentives). Table 4 provides estimates of how much these various provisions might do to reduce Social Security's financing shortfall. The first provision analyzed in table 4, the "mini-PIA" reform, is so called because it would replace Social Security's current benefit formula, which is used to calculate an individual's entire benefit, with a proportionally scaled-down version that allows the individual to accrue a small fraction of his or her total benefits with each year of work. Whereas the current formula operates on an individual's *average* career earnings, the reformed version would accrue benefits with each year of earnings in a manner more similar to a traditional employer-provided pension.

The small savings that this provision would produce would come at the expense of individuals with sporadic labor force attachment while holding workers harmless who have steady earnings throughout their adult lives and increasing benefits for those who extend their working careers. Benefit constraints would be further concentrated among individuals who have higher amounts of earned income during isolated years of work but who are currently misidentified as lower-income workers under Social Security's current benefit formula.[125] In short, this change would reward working seniors, would reduce regressive income transfers to sporadic earners in higher-income households, and would more precisely target benefit payments on households of greater need, while producing a slight improvement in Social Security's financing outlook.

The last four items in table 4 would not help directly to close Social Security's financing shortfall (indeed, the payroll tax relief provisions would add to it), but each would be expected to improve workforce participation and thereby provide additional income security to retired seniors. The payroll tax exemption in the table could be either scaled back or excluded as necessary to produce a package of reforms that maintains sustainable solvency. A

TABLE 5. ESTIMATED PERCENTAGES OF SOCIAL SECURITY SHORTFALL ELIMINATED BY ILLUSTRATIVE CORRECTIONS TO THE CONSUMER PRICE INDEX

Provision	Percentage of 75-year actuarial shortfall closed	Percentage of annual cash shortfall closed by 75th year
Replace CPI-W with C-CPI-U to calculate annual COLAs.	19	18

Source: Social Security Office of the Chief Actuary, "Summary Measures and Graphs," Solvency Provision A3, accessed August 5, 2020, https://www.ssa.gov/OACT/solvency/provisions/charts/chart_run141.html.

TABLE 6. ESTIMATED PERCENTAGES OF SOCIAL SECURITY SHORTFALL ELIMINATED BY ILLUSTRATIVE REFORMS TO THE NONWORKING SPOUSE BENEFIT

Provision	Percentage of 75-Year Actuarial Shortfall Closed	Percentage of Annual Cash Shortfall Closed by 75th Year
Cap the nonworking spouse benefit at the benefit earned by a steady minimum-wage worker retiring in 2020; index the cap to C-CPI-U going forward.	3	4

Source: Author's calculations, based on estimates of the Social Security Administration Office of the Chief Actuary.

less-expensive alternative, of simply exempting seniors (who are no longer eligible for disability benefits) from the DI payroll tax, is also shown in table 4.

LEVER 3: TECHNICAL CORRECTIONS TO THE CONSUMER PRICE INDEX

As noted earlier in this study, the inflation index (CPI-W) currently used to determine annual Social Security COLAs is widely acknowledged by economists to overstate price inflation. Replacing CPI-W with a more accurate measure such as C-CPI-U would simultaneously advance several objectives: (a) it would more closely fulfill the statutory intent to index Social Security benefits to the best available measure of general price inflation, (b) it would eliminate inequities that arise when taxpayers repeatedly overpay inflation adjustments to the longest-lived (disproportionately upper-income) beneficiaries, (c) it would lessen Social Security's financing shortfall, (d) it would reduce the necessity of increasing taxes and cutting benefits, and (e) it would improve intergenerational equity by including current participants in the solvency solution. Table 5 presents an estimate of how much a corrected CPI would reduce the Social Security financing shortfall.[126]

LEVER 4: NONWORKING SPOUSE BENEFITS

As noted earlier, Social Security's nonworking spouse benefit facilitates regressive income redistribution and is poorly constructed to recognize the value of stay-at-home parenting. One possible reform to mitigate these problems would be to cap the current nonworking spouse benefit so that it does not exceed the benefit a primary worker receives for a career of earnings at the federal minimum wage. Establishing this cap on the nonworking spouse benefit today, as well as indexing the growth of the cap to national price inflation going forward, would gradually reduce existing regressive income redistribution, while making a modest contribution to closing Social Security's financing shortfall, as shown in table 6.[127]

LEVER 5: THE PIA BENEFIT FORMULA

As with other policy levers, changes to the numerical formula that determines Social Security benefit levels can serve twin purposes. Such changes can both improve program finances and help to attain a targeted distribution of benefits. The degree to which the current-law formula should be changed is thus a function of how much financial improvement is sought, as well as how much of a change in benefit distribution is sought. Alterations of Social Security's numerical benefit formula can be an especially powerful engine of change: unlike some other reforms discussed in this section, one can close as much of Social Security's financing shortfall through benefit formula changes, or as little, as policymakers desire.

Changing Social Security's numerical benefit formula to slow cost growth also carries a number of policy advantages over reducing the shortfall through tax increases, including progressive tax increases such as raising the cap on taxable wages. Specifically, having higher-income Americans contribute to Social Security solvency on the benefit side rather than the tax side carries fewer adverse implications for economic growth and moves the program toward a sustainable rate of aggregate cost growth. Perhaps most important, it allows more birth cohorts to contribute to the financing solution, thereby helping to create a reform package that is more equitable across generations.

Focusing on the benefit side rather than on the tax side enables policymakers to more directly offset recent increases in income inequality that cannot be addressed solely by changes in the taxation of *future* earnings. Those who have gained the most from recent income inequality trends are far more likely to be Social Security recipients in the decades ahead than they are to be taxpaying workers.[128] This tendency means in turn that the highest-income Americans are better able to contribute to Social Security solvency by receiving less in benefits than through increased payroll taxes. Pursuing increased progressivity through benefit changes also avoids certain specific undesirable side effects of increasing the cap on taxable earnings, which will be discussed later.

Some additional background may be useful before discussing specific changes to the PIA benefit formula. A worker's Social Security benefit, fully payable at FRA, is a function of the PIA formula. As explained earlier in this study, this formula converts one's career-average indexed earnings (AIME) into a benefit using a system of percentages and brackets that operate somewhat similarly to the more familiar system used for federal income taxes.

The well-known system of federal income tax brackets exposes taxpayers to increasing marginal tax rates as their incomes grow. Individuals' first earnings aren't subject to income tax at all, but as more income is earned, the taxpayer moves into higher brackets where his or her additional earnings are taxed at higher percentages. Social Security's benefit formula operates similarly in that it applies different accrual percentages to one's first earnings than to one's additional earnings; thus, it distributes benefits more generously to lower-income workers.

Specifically, the Social Security benefit formula consists of 90 percent, 32 percent, and 15 percent brackets. The 90 percent factor is applied to the first $960 of a worker's average monthly earnings ($11,520 annually); the 32 percent factor is applied to the amount between $960 and $5,785 monthly ($69,420 annually); and the 15 percent factor is applied to earnings above that, up to the maximum taxable amount (currently $137,700). The large discrepancy between

the 90 percent and 15 percent factors enables low-income workers to receive much higher returns on their contributions than high-income workers.

By way of highly simplified illustration, someone who had only $10,000 in average indexed earnings would receive a $9,000 benefit, because all the earnings would be in the 90 percent region. The borders between the 90 percent and 32 percent regions and the 32 percent and 15 percent regions are called "bend points," and they are statutorily indexed to grow each year with the AWI.

The two primary ways of achieving savings through changing the PIA benefit formula are to either change the rate of indexation of the bend points or change the numbers that operate within the formula.[129] The bend points, currently indexed to grow with the AWI, could be indexed to grow more slowly—for example, with the C-CPI-U price index. Such a change would mean that as Americans generally experience real wage growth over time, more of their earnings would gravitate into the 15 percent bend-point factor region compared to the amount that is covered by the 90 percent and 32 percent regions. Or, put another way, as Americans become more well off, they would become comparatively less reliant on Social Security than are earlier, poorer generations.

One advantage of this first approach is that it would implement a clear and defensible policy rationale underlying the rate of growth of Social Security benefits from one retiree cohort to the next—namely, that a given amount of real wages should always return a given amount of real benefits. But policymakers should be aware that, if continued indefinitely, this particular indexing revision would overcorrect Social Security's financial imbalance, even more so in combination with other financial improvements. For this reason, as well as to contain the eventual effects of such an indexing revision on benefit levels, policymakers may wish to consider ways to limit it—for example, by discontinuing the revised indexation rate at a certain time or by partially offsetting it with other targeted benefit increases.[130]

The other method of achieving savings and of targeting benefits on lower-income people is to change the 90 percent, 32 percent, and 15 percent factors themselves according to the discretionary judgments of lawmakers. Some proposals would gradually phase the 15 percent factor down to 10 percent or 5 percent. This approach is a feature of many proposals to increase the amount of wages subject to the Social Security tax, in part because without such a bend-point factor change, an increase in taxable earnings would also produce a significant increase in benefits for the wealthier individuals making the larger contributions. However, with or without such a tax cap increase, many proposals would reduce the 15 percent factor over time, so that the responsibility of correcting the Social Security shortfall falls principally on higher-income individuals.

Several proposals would, for similar reasons, create a new bend point inside the current 32 percent bend-point region, gradually lowering the 32 percent factor for wage income above the new bend point. The more of the shortfall that can be closed through such progressive means, the less needs to be closed through measures not shouldered specifically by higher-income people, such as eligibility age changes, payroll tax rate increases, early-retirement actuarial reduction factors, and COLA changes.

All this said, it is not strictly necessary that changes to the bend-point factors achieve net savings and thereby help to close Social

TABLE 7. ESTIMATED PERCENTAGES OF SOCIAL SECURITY SHORTFALL ELIMINATED BY ILLUSTRATIVE BEND POINT CHANGES

Provision	Percentage of 75-year actuarial shortfall closed	Percentage of annual cash shortfall closed by 75th year
Starting in 2026, price-index the PIA bend points for price inflation.	44	84
Increase the first bend point by about 27%; create a new bend point near the 50th percentile of the wage distribution; and phase to new bend-point factors of 95, 32, 15, and 5.	3	4

Source: Author's calculations, based on estimates of the Social Security Administration Office of the Chief Actuary.

Security's financing shortfall. Several proposals have included bend-point factor changes that are nearly neutral with respect to total system costs, such as increasing the 90 percent bend-point factor, or the 32 percent bend-point factor below a newly inserted bend point, or both, while simultaneously decreasing the 15 percent bend-point factor and the 32 percent bend-point factor above the new bend point. One such proposal, as in table 7, would ultimately result in new bend-point factors of 95, 32, 15, and 5.[131] Still other proposals seek only to increase the 90 percent factor, or the 32 percent factor in the lower portion of the current 32 percent region, or both, without reducing the 15 percent factor or the 32 percent factor at any point, either to increase benefits outright or to shield lower-income workers from the effects of other benefit changes.[132]

These approaches are all worth exploring, but a word of caution should be voiced with respect to all proposals to increase the progressivity of the bend-point factors. Social Security already acts as a disincentive for workforce participation and discretionary retirement saving, and these disincentives are easily worsened by benefit increases for those with smaller AIMEs. To preserve work incentives, it would be helpful to combine any progressive benefit formula changes with reforms to convert the PIA formula into a "mini-PIA" formula, as earlier described. However, such pro-work reforms may not always be sufficient to offset the additional work disincentives that would result from significant increases in the progressivity of Social Security's bend-point factors. Policymakers should carefully review the total effects of any comprehensive proposal in its entirety to ensure that it improves marginal returns on work compared to current law.

LEVER 6: PAYROLL TAXES

It is likely that any politically salable solution to Social Security's financing shortfall will contain at least some tax increases—for several reasons. First, the concept of benefit reductions is unpopular, especially compared with alternative approaches to improving solvency, such as raising the statutory limit on annual wages subject to the Social Security tax.[133] The fact that the relative popularity of these conflicting approaches is often distorted by public misunderstandings (such as confusing a decelerated rate of future benefit growth with an actual reduction from current benefit levels) does not eliminate the formidable political obstacles to a solution consisting entirely of cost restraints.

Second, bipartisan agreement will require legislators with opposing viewpoints to compromise. A cost-constraint-only approach has never had support in Congress that is nearly strong enough for advocates to insist upon it as the only acceptable solution.[134]

Third, so much delay in repairing Social Security finances has already occurred that many approaches to cost containment perceived to be most draconian—such as limiting future per capita benefit growth to the rate of price inflation—are no longer sufficient by themselves to significantly delay combined trust fund depletion.[135] It is thus virtually certain that if a Social Security financing solution is negotiated, additional tax revenues will be a part of it.

All this said, political considerations cannot eradicate the many policy downsides of attempting to maintain Social Security solvency through tax increases. In addition to the usual economic downsides of tax increases such as their adverse effects on workforce participation, personal saving, and economic growth, there are additional downsides specific to increasing Social Security taxes.

A tax-increase-based solution would leave most of the policy challenges described in this study uncorrected, including program costs rising at a faster rate than US economic capacity, substantial net income losses through the program for young workers, disincentives for workforce participation and retirement saving, and workers' standards of living being depressed compared to program beneficiaries' standards of living. Relying solely on tax increases to sustain Social Security finances would leave these problems intact and in some instances would make them worse. Moreover, many of the specific tax increases often suggested to support rising Social Security costs would be difficult to implement without dismantling key elements of Social Security's historic financing basis.

Social Security is structured as a contributory insurance program in which contributions from worker earnings both finance and establish workers' entitlement to benefits. Unless this financing basis is abandoned, the three principal methods available to increase Social Security revenues are to expand the *forms* of worker compensation subject to the payroll tax, to increase the *amount* of worker earnings subject to the payroll tax, and to increase the tax *rate* on worker earnings.

Of these three options, the most immediately attractive from a pure economic policy perspective is to expand worker compensation subject to the Social Security payroll tax, perhaps specifically to include employer-provided health benefits. Economists have long pointed to the current federal tax preference for employer-provided benefits over other forms of compensation as a leading driver of national health cost growth and as a cause of significant labor market distortions.[136]

The tax preference also contributes to the United States having an individual health insurance market that is less developed than its employer-based group market. This problem is largely rooted in the historical tax preference for employer-sponsored health insurance. Exposing health insurance benefits to the Social Security payroll tax would add revenue for Social Security, reduce distortions in the labor market, and attack a principal driver of health cost inflation.

Unfortunately, exposing health benefits to taxation would hit lower-income workers especially hard, because their health benefits represent a larger percentage of their total work compensation than is the case for higher workers. If someone with $35,000 in wages is currently compensated with $7,000 in employer-provided health premiums (a fairly typical amount for an individual policy), the exposure of such premiums to the payroll tax would increase that person's Social Security tax burden by 20 percent.[137] Premiums for family policies are

substantially higher still, and their inclusion in taxable worker compensation would have even more regressive effects.

One possible solution to this dilemma is to carve out an exclusion from the payroll tax for a base amount of employer-provided health benefits, such as $6,000 for an individual policy and $16,000 for a family policy. However, such an exclusion would inject a problematic complexity and precedent into Social Security tax policy, which historically has operated pursuant to a policy virtue of eschewing loopholes, deductions, or exclusions. If that principle is ever breached to allow taxing only a portion of health benefits, it would be difficult for lawmakers to resist also breaching it for a certain amount of wages to similarly provide targeted relief for low-income workers. It would represent a considerable departure from Social Security's historical financing basis to start carving out exclusions from the payroll tax to achieve desired distributional effects, and doing so would destroy the program's contribution-benefit link as well as the political strength that accompanies it. Rather than take this approach, it might be preferable to continue excluding employer-provided health benefits from the payroll tax, despite the well-documented problems associated with this tax preference.

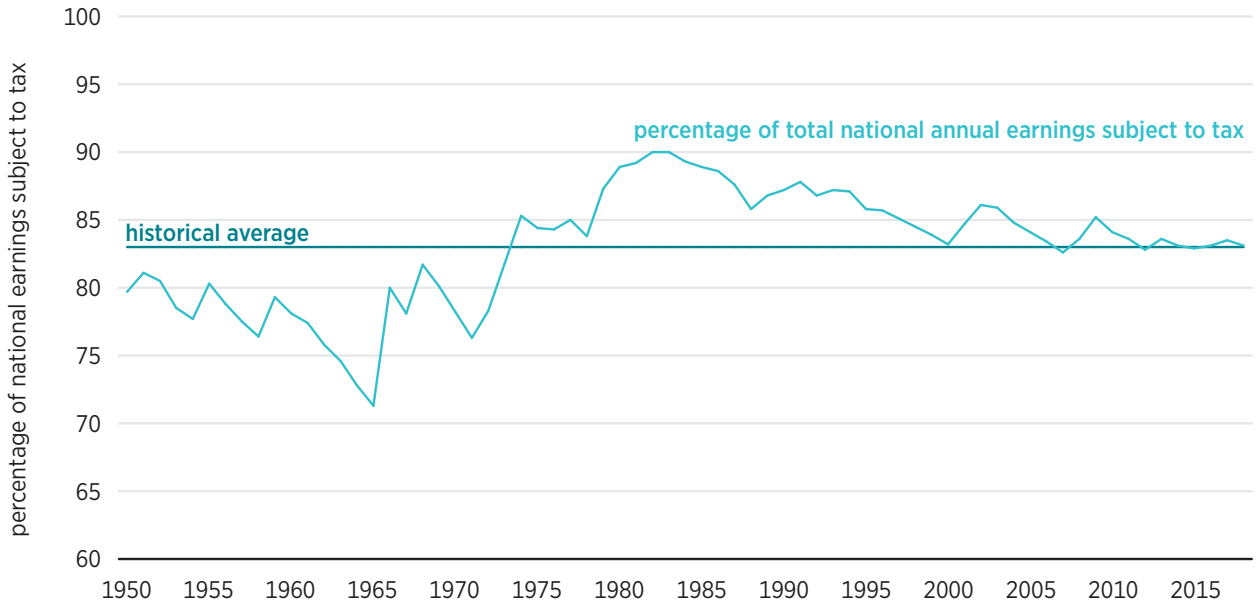
An alternative approach is simply to raise the cap on taxable wages by an amount determined by lawmakers. This approach is taken in most solvency proposals by congressional Democrats and thus is likely to be considered as a part of any bipartisan solution. Despite its relative popularity on one side of the political aisle, however, this policy option has several potential pitfalls of which all lawmakers should be aware.

Certain misconceptions may feed the apparent attractiveness of raising the cap on taxable wages compared to alternative methods of shoring up Social Security. Currently, the first $137,700 in annual earnings is subject to the Social Security payroll tax, an amount that is indexed to grow each year with the AWI.[138] Alan Barber and Cherrie Bucknor of the Center for Economic Policy Research join many others in arguing for an increase in the cap on the basis that it would affect only a small number of workers (5.4 percent) with annual earnings above the current level.[139] This characterization, however, neglects that individual incomes vary from one year to the next. Actually, "between 20 percent and 25 percent of individuals" earn more than the taxable maximum during at least part of their working careers, and thus between one-fourth and one-fifth of US workers would pay additional taxes if the tax cap were raised.[140] These effects would still be concentrated among higher-income workers and do not obviate all arguments in favor of raising the cap on taxable wages. Nevertheless, it should be understood that a payroll tax increase would result in many more Americans paying higher taxes than is often believed.

It is often noted that rising income inequality has enabled the income of earners with wages exceeding the current-law tax cap to grow faster than earnings below the cap. This growth in inequality has caused the percentage of national earnings subject to the Social Security payroll tax to decline from 90 percent in 1983 to only 83 percent today.[141] Some, therefore, argue that the cap should be raised so that it once again covers 90 percent of earnings, or even more, to counteract the inequality trends.[142]

Raising the Social Security tax cap to cover 90 percent or more of national earnings is a policy option worthy of consideration. However, certain realities should be understood before pursuing it. One is that the 90 percent of national earnings

FIGURE 9. PERCENTAGE OF US WORKERS' EARNINGS SUBJECT TO SOCIAL SECURITY TAX



Source: Table 4.B1 in Social Security Administration, *Annual Statistical Supplement to the Social Security Bulletin, 2019*, November 2019, https://www.ssa.gov/policy/docs/statcomps/supplement/2019/supplement19.pdf.

that was taxed by Social Security in 1983 was not a historical norm but a temporary high point. (See figure 9.) The current taxed percentage of 83 percent is approximately the historic average since Social Security's inception. Although it could be raised, doing so would expose a greater share of national earnings to taxation than the historical norm.

Another important factor to consider is that raising the cap on taxable wages would not meaningfully counteract recent increases in income inequality, instead primarily targeting individuals who have not generally been among the leading beneficiaries of such inequality. As Warshawsky has documented, workers with incomes just above the current Social Security tax cap—those who would be hit hardest by a cap increase—have seen their earnings slightly decline as a share of total national income since 1990. Meanwhile, most of the relative income gains have been in the top 0.2 percent of the distribution, and those highest-earners would be affected proportionally less by raising the cap on taxable wages to cover 90 percent or a similar amount of national wages.[143] For this reason, as well as others described in the previous section, raising the cap on taxable wages would not assign responsibility for financing Social Security's shortfall to those reaping the largest recent income gains.

Distributional issues aside, the biggest policy problem created by raising the cap on earnings subject to the Social Security tax is that, in the absence of other changes, it also increases Social Security's benefit obligations (because benefits are a function of earnings subject to the tax). This fact renders a tax cap increase problematic from both a financing perspective (a significant

amount of the new revenues collected up front are paid out later as additional benefits) and a distributional perspective (the additional benefits are paid to high-income people who need them least).

There would be some financial improvement from raising the cap because high-income people get relatively poor returns on their Social Security contributions, but much of it would wear away over time. For example, raising the cap on taxable wages to cover 90 percent of national wages would improve Social Security's long-range actuarial balance by 22 percent on average, but by the end of the valuation window the improvement would shrink to 12 percent.[144]

This phenomenon creates a Hobson's choice for legislators who want to raise Social Security's taxable earnings limit: either they accept a further increase in Social Security's already untenable rate of cost growth as well as a benefit increase for those who least need one, or else they sever the contribution-benefit link for high-income workers, thereby terminating Social Security's historical earned-benefit construct. Both represent undesirable policy outcomes. The complete severance of the contribution-benefit connection, in particular, would be fatal to Social Security's historical design and ethic. There is, however, a way to minimize the policy downsides of increasing the tax cap: namely, to significantly reduce the top (15 percent) bend-point factor, as described in the previous section. This approach would preserve Social Security's contribution-benefit connection, while constraining additional costs as well as benefit obligations to those who need them least.

Although lawmakers should be mindful of the downsides of increasing the limit on Social Security–taxable wages, there are important reasons to favor such a provision as well. Foremost among them is that the effects would be concentrated on higher-income workers, thus being consistent with a widely shared goal of sparing lower-income workers from hardship in the course of restoring Social Security to solvency.

A tax cap increase could also help to reduce some of the income losses facing younger middle-class workers as a result of Social Security's legacy debt. Although raising the cap on taxable wages would not lessen younger generations' aggregate burdens of financing a disproportionate share of Social Security's financing shortfall, it would spread the obligations over a greater share of national earnings, thereby reducing most young Americans' income losses as a percentage of their own earnings.

The final Social Security payroll tax lever is the tax rate, which is currently 12.4 percent.[145] The payroll tax rate could be raised to bring more revenue into Social Security. An advantage of raising the rate rather than the base is that the rate can be increased (as it frequently has been historically) without obligating additional benefit payments. A significant disadvantage is that all workers, including the poorest as well as the richest, would pay a rate increase. For that reason, the idea tends to receive less support than a tax cap increase that would be targeted mostly on higher-income workers. A rate increase also shares a downside with a tax cap increase: they raise the cost of employment and thereby exert a negative effect on economic growth.

Another option is to slightly reduce the payroll tax rate. Though in isolation a payroll tax rate reduction would worsen Social Security's financing shortfall, a slight rate reduction could be included to offset certain undesired effects of a tax base increase. As noted earlier, a straightforward increase in the cap on taxable wages would

TABLE 8. ESTIMATED PERCENTAGES OF SOCIAL SECURITY SHORTFALL ELIMINATED BY CHANGES TO THE PAYROLL TAX

Provision	Percentage of 75-year actuarial shortfall closed	Percentage of annual cash shortfall closed by 75th year
Raise cap on taxable wages to cover 90% of national earnings, without changing PIA bend-point factors.	22	12
Raise cap on taxable wages to cover 90% of national earnings, while lowering 15% bend-point factor to 5%.	28	20
Raise cap on taxable wages to cover 95% of national earnings, without changing PIA bend-point factors.	38	22
Raise cap on taxable wages to cover 95% of national earnings, while lowering 15% bend-point factor to 5%.	47	34
Reduce payroll tax rate from 12.4% to 12.0%.	−12	−9

Source: Author's calculations, based on estimates of the Social Security Administration Office of the Chief Actuary.

embody a substantial tax increase for moderate- to high-income earners whose earnings have not risen proportionately to those of the highest-income earners. A slight reduction in the rate could shield workers with incomes just above the current tax cap from some of the effects of a cap increase, while also offering a slight tax break to lower-income workers.

Though such a rate reduction may be appealing in principle, in practice Social Security's large financing shortfall rules out anything larger than a slight diminution in the current payroll tax rate. For example, even a one-point reduction in the payroll tax (from 12.4 percent to 11.4 percent) would by itself worsen the current long-range shortfall by nearly one-third, thus nullifying the gains of even fairly severe measures to shore up program solvency. Lowering the tax rate by this one point would worsen the Social Security shortfall by much more than raising the cap to cover 90 percent of national wages would ameliorate it—even if the top (15 percent) PIA formula bend-point factor were to be reduced substantially.[146] Table 8 estimates the financial effects of various changes to the Social Security payroll tax.

LEVER 7: MINIMUM BENEFIT PROTECTIONS

Many Social Security reform proposals include provisions to increase benefits for lower-income workers. Sometimes these are proposed as stand-alone increases; other times they counteract other provisions in the same plan that slow the growth of benefits. A previous section of this study reviewed one method of strengthening low-income workers' benefits by increasing the benefit formula's bend-point factors on the lower-income end. Other approaches include strengthening Social Security's current special minimum benefit, constructing an entirely new minimum benefit, or topping-up benefit levels when an individual reaches an advanced age such as 85.

It should be noted that substantial benefit increases for low-income workers are already scheduled to occur under current law, as they are for all workers via the indexation of the benefit formula to growth in the AWI. Low-income workers will receive the increases as long as the program remains solvent and the benefit formula remains unchanged in the lower bend-point factor regions, even if the numerical factors or

method of indexing are changed on the upper-income end.

Motivations for offering additional minimum protections beyond current-law benefit growth vary and include such obvious motives as improving the political salability of a reform package, increasing the progressivity of benefit distribution, and reducing beneficiaries' risk of poverty in old age. However, there are additional specific reasons lawmakers may wish to consider including new forms of minimum benefit protections in a Social Security reform package.

One reason is that, as detailed earlier, the current-law benefit formula poorly targets benefits on households of greatest need. If reformers dial down the current-law benefit formula to limit inefficient, haphazard, and regressive income redistribution, they may wish at the same time to partially offset the change with another benefit increase that is more efficiently targeted on lower-income households.

Analysts have noted that the risks of poverty are higher among certain groups of elderly, specifically those of very advanced age (e.g., over 85), as well as widowed, divorced, or never-married women.[147] Because of these risks, some reformers have suggested certain targeted benefit increases such as larger benefits for surviving spouses or a step-up in benefits when individuals reach 85 years of age.[148] A disadvantage of this approach is that the selection of an age for a sudden step-up in benefits is inherently arbitrary in that there is no specific age at which each person's risk of poverty suddenly increases. An advantage of this approach is that it would be more targeted against poverty than is the current policy of paying COLAs at all ages (and at all income levels) that cause annual benefits to grow faster than actual price inflation.

An additional reason for scaling back the traditional benefit formula and replacing it in part with a new minimum benefit is to improve Social Security's poor rates of return on workforce participation. An ideal Social Security reform plan would accomplish each of the following: financial corrections, strengthened work incentives, and greater protections against poverty in old age. A well-designed minimum benefit provision that increases with each year of taxable earnings can contribute to achieving these policy purposes.[149]

Examples of specific minimum benefit provisions are provided in table 9.[150] Note that several versions of the concept of a 5 percent increase at age 85 have been proposed. In one version, individuals would receive a simple 5 percent increase in their own benefit upon reaching 85.[151] In another version, all 85-year-old beneficiaries would receive an increase equal to 5 percent of the average worker's benefit.[152] The financial effects are similar in each case. A particular disadvantage of basing a benefit increase on a fixed age is that, as with early and normal eligibility ages, more individuals will become eligible as life spans increase, and future lawmakers may be reluctant to adjust the bonus-age threshold to reflect changing realities. Others have proposed increasing benefits for surviving spouses, recognizing that their poverty risk is higher than for other seniors.[153]

Other more complex versions of benefit increases have been introduced, including gradual phase-ins and other refinements.[154] The examples provided in table 9 are intended to give a representative sense of the approximate cost of such provisions.

TABLE 9. ESTIMATED PERCENTAGES OF SOCIAL SECURITY SHORTFALL ELIMINATED BY MINIMUM BENEFIT PROVISIONS

Provision	Percentage of 75-year actuarial shortfall closed	Percentage of annual cash shortfall closed by 75th year
Guarantee a benefit no lower than 125% of the poverty line for 30 years of work. Provide 1/20 of the guaranteed benefit for each year of work from 10 to 30.	−5%	−5%
Increase benefits by 5% when an individual reaches the age of 85.	−4%	−4%
Increase widow or widower benefits to 75% of the sum of each spouse's primary worker benefit.	−3%	−3%

Note: To be consistent with earlier tables, this table's title refers to how much of the shortfall would be "eliminated," although each example provided here would actually increase Social Security's financing shortfall.

Source: Social Security Office of the Chief Actuary, "Provisions Affecting Level of Monthly Benefits," accessed August 12, 2020, https://www.ssa.gov/OACT/solvency/provisions/benefitlevel.html.

A NOTE ON COMBINING PROVISIONS INTO A COMPREHENSIVE PLAN

Although the choice of policies in a Social Security reform plan reflects subjective value judgments, certain analytical realities confront all plan designers. One is that, when it comes to financial effects, the whole is usually slightly less than the sum of the parts because of interactions between provisions. For example, correcting the price index used to calculate COLAs produces a certain amount of savings within the context of Social Security's current-law PIA formula. If the growth of the initial benefit formula is slowed, however, then CPI corrections will produce less in incremental savings.

Many cost-saving provisions interact so that each specific provision produces slightly less additional savings when combined with other provisions than it does when applied to current-law Social Security. There are examples to the contrary. For example, price-indexation of the PIA formula's bend points produces greater savings when that price-indexation is combined with CPI reform. In theory, the combined savings from various provisions could be either more or less than the provisions' savings when considered separately and added together.

Usually, however, reformers should expect that when they add up the extent to which their various provisions further the twin objectives of long-term (i.e., 75-year) actuarial solvency and sustainable annual cash flows (i.e., zero or positive cash balance in the 75th year), they will need to build in a small, additional cushion to allow for interactive effects. For example, the plan of former Congressman Sam Johnson (R-TX) had provisions that interacted as shown in table 10, when scored according to the assumptions of the 2016 Social Security trustees' report.[155]

Estimating the effects on Social Security finances is only the minimum necessary analysis that should accompany the development of any plan. Plans should also be analyzed to determine how they would change the poverty rates among beneficiaries; the marginal returns on work; and the net treatments of different generations, income levels, and other demographic groupings.

Fundamental to any good analysis is not to fall into the common trap of comparing benefits under a reform proposal only with future benefits scheduled under current Social Security law. This comparison usually misleads for several reasons. First and foremost, scheduled benefits cannot be paid under current law; the more relevant tests of any proposal are how its benefits compare to the benefits current Social Security can actually

TABLE 10. ESTIMATED PERCENTAGES OF SOCIAL SECURITY SHORTFALL ELIMINATED BY PROVISIONS OF FORMER CONGRESSMAN SAM JOHNSON'S PROPOSAL

Provision	Percentage of 75-Year Actuarial Shortfall Closed	Percentage of Annual Cash Shortfall Closed by 75th Year
Change of bend-point factors to 95/27.5/5/2.	32	35
Mini-PIA reform.	13	14
Windfall Elimination Provision reform.	1	1
Gradual increase of full retirement age.	32	31
Changes to CPI and COLAs.	47	53
Limitation on high-income dependent benefits.	3	3
School attendance for child dependents.	0	0
New minimum benefit.	−9	−9
Repeal of retirement earnings test.	0	3
Phaseout of income taxation of benefits.	−15	−22
Top-up for beneficiaries of advanced age.	−3	−2
Subtotal without interactions	101	107
Interactions	−1	−3
Total with interactions	100	104

Source: Stephen C. Goss, Chief Actuary, Social Security Office of the Chief Actuary, to Sam Johnson, Chairman of the Subcommittee on Social Security, House Committee on Ways and Means, December 8, 2016, https://www.ssa.gov/OACT/solvency/SJohnson_20161208.pdf.

pay, or to the levels that today's beneficiaries are currently receiving. To do otherwise is to unfairly compare a reform proposal's benefits not to the realities of the current system, but to a more generous one in which payroll taxes have been raised considerably above current levels.

No responsible reform plan will look attractive in comparison with a fantasy scenario in which much higher benefits materialize in the future without anyone having had to pay for them. A true apples-to-apples comparison between a reform plan and the current system is between the two scenarios' "payable benefits," (i.e., the benefits that can be paid from the tax revenues provided under the plan).

Unfortunately, misleading comparisons have become standard in the political context that surrounds Social Security. These comparisons appear more alarming because benefit schedules under current law promise (without any ability to fund) much higher benefits in the future than are paid to today's workers. Recall the example cited earlier in this study in which a worker with the same real wage in 2090 is scheduled to receive a real benefit more than 40 percent larger than what is paid today. Accordingly, if a reform plan allows benefit payments in 2090 that are 15 percent higher in real terms than are those paid to an equally well-off worker today, an unscrupulous political opponent can (and will) readily describe this as a "20 percent benefit cut."

Unfortunately, there is no way to prevent such mischaracterizations from being made. All that responsible reformers can do is to educate the public and the press before a plan is released, to the effect that an informed discussion must focus on how to improve on the benefits that the current system pays today and is capable of paying in the future—and not focus on how to meet or exceed an unaffordable rate of benefit growth bearing no relationship to what the current Social Security system can deliver.

CONCLUSION

Social Security is undoubtedly the federal government's most successful social insurance program. Not only has it largely achieved its purposes of enhancing income security for American workers and their families after their departures from the workforce, but also it has done so while sustaining strong if not unique political support. Yet Social Security faces daunting challenges approaching over the horizon, some of which are making themselves felt today. It faces a large, growing financial shortfall at a time when partisan divisions have become sharper, bipartisan cooperation is rarer, and commitment to Social Security's historical financing principles is flagging. If Social Security is to serve Americans in the future as it has in the past, these challenges must be overcome.

Social Security's projected financing shortfall may be its most salient challenge, but it is by no means the only one. The program has grown to the point where the trend of its real-world effects runs counter in many ways to its intended policy purposes and where its uncontrolled further growth will, without reform, reduce its effectiveness in supporting a coherent income security policy.

Among the problematic trends requiring corrections are that Social Security currently stands on balance to substantially reduce future workers' lifetime incomes; its rising costs depress the after-tax incomes of workers compared to program beneficiaries' incomes; it deters workforce participation and personal saving; and, in many instances, it redistributes income from those with less to those who have more. These are all substantial policy challenges warranting substantial reforms. The good news is that Social Security will treat individual participants more equitably if its cost growth is reduced and its financial status is improved. The bad news is that more elected officials are proposing to worsen Social Security's cost growth rate, and its policy deficiencies, than are proposing to correct them.[156]

This study has reviewed several of the specific policy challenges facing the Social Security program, explaining their origins in current law, and has described possible measures to address them. No single reform to Social Security can simultaneously achieve all the appropriate objectives of improving its financial condition, achieving a sustainable rate of cost growth, improving intergenerational equity, restoring work and saving incentives, and better targeting benefits on households of greatest need. A balanced package of reforms, however, can include individual provisions pursuant to these various objectives and in combination can advance all of them together.

Lawmakers need not share the subjective value judgments of this author to improve and strengthen Social Security. But regardless of

their own policy objectives, it is important for lawmakers to understand how individual Americans are affected by the Social Security program. Only if the various effects of Social Security described in this study are fully understood will lawmakers be able to craft a package of reforms that suits the needs and policy preferences of a bipartisan majority.

NOTES

Introduction

1. Social Security Board of Trustees, *2020 Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Federal Disability Insurance Trust Funds*, 2020.
2. For example, a tax increase sufficient to eliminate the program's 75-year actuarial shortfall would fail to eliminate its annual operating deficits in the later years of the valuation period, necessitating further future tax increases unless cost growth is slowed.
3. Discussions of Social Security among laypersons often refer to "promised" benefits, a term usually avoided by specialists because many currently scheduled benefits would not be paid under current law. Both terms are provided here for clarity, but this study will usually refer to "scheduled" benefits. The reference in the text to net income losses describes the excess of tax contributions over benefits received for younger generations, in present value. Unless current participants contribute substantially to closing Social Security's financing shortfall, future participants will experience this net income loss, irrespective of whether Social Security delivers the benefits payable under current law in the absence of a payroll tax increase, or of whether payroll taxes are raised to fund current benefit schedules.

Addressing Social Security's Financing Shortfall

4. Social Security Board of Trustees, *2020 Annual Report*, 13.
5. Social Security Act, 42 U.S.C. 401, § 201(c), https://www.ssa.gov/OP_Home/ssact/title02/0201.htm.
6. Congressional Budget Office, *CBO's Long-Term Social Security Projections*, December 2019.
7. Social Security Board of Trustees, *2015 Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Federal Disability Insurance Trust Funds*, 2015, 47.
8. Social Security Board of Trustees, *2015 Annual Report*, 47.
9. Social Security's Old-Age and Survivors Trust Fund is the fund currently projected to face reserve depletion soonest—in 2034. Social Security's two trust funds, when considered as a theoretical combined fund, would not be insolvent until 2035. Social Security Board of Trustees, *Status of the Social Security and Medicare Programs*, 2020, 1.
10. Social Security Administration, "Summary of P.L. 98-21, (H.R. 1900) Social Security Amendments of 1983—Signed on April 20, 1983," November 26, 1984, https://www.ssa.gov/history/1983amend.html.
11. James Saturno, *Points of Order in the Congressional Budget Process*, Congressional Research Service, 2015, 6. Waiving this point of order requires the support of three-fifths of

Senators, whereas the passage of reconciliation legislation requires only a majority.

12. President Obama established the bipartisan commission to make recommendations to "meaningfully improve the long-term fiscal outlook." National Commission on Fiscal Responsibility and Reform, *The Moment of Truth*, December 2010, 14, 15; Office of the Press Secretary, "President Obama Establishes Bipartisan National Commission on Fiscal Responsibility and Reform," White House, February 2010, https://obamawhitehouse.archives.gov/the-press-office/president-obama-establishes-bipartisan-national-commission-fiscal-responsibility-an. Whether Social Security contributes to federal budget deficits is often debated, although most federal budget experts agree that it currently does. It is beyond the scope of this paper to settle this debate, but for an overview see Charles Blahous, "Seven Social Security Myths," e21, Manhattan Institute for Policy Research, June 2018.
13. President Franklin D. Roosevelt, "Address to Advisory Council of the Committee on Economic Security," November 14, 1934, https://www.ssa.gov/history/fdrstmts.html.
14. 1957–59 Social Security Advisory Council, Final Report, 1959, https://www.ssa.gov/history/reports/58advise6.html.
15. 1981 Social Security National Commission, *Social Security in America's Future*, March 1981, chapter 4, 65.
16. 1994–96 Social Security Advisory Council, *Report of the 1994–96 Advisory Council on Social Security*, January 1997, https://www.ssa.gov/history/reports/adcouncil/report/findings.htm#principles.
17. Philip Stallworth and Daniel Berger, "The TCJA Is Increasing the Share of American Households Paying No Federal Income Tax," Tax Policy Center, September 2018.
18. Medicare, which is also financed from dedicated trust funds, has been changed much more often than Social Security. A review of the differences between the two programs suggests why it has been changed more frequently. First, although Medicare, like Social Security, has two trust funds (Hospital Insurance [HI], and Supplementary Medical Insurance [SMI]), it is not financed in the same way. In particular, the SMI trust fund receives roughly three-quarters of its income from general government revenues. Consequently, lawmakers have been more willing to reduce Medicare growth to address federal deficits, as well as to condition net benefits on need through the mechanism of "income-related" premiums and other surcharges. Second, most Medicare outlays are payments to providers and can thus be reduced without directly "cutting benefits," as would be required in Social Security, where payments are made to individual beneficiaries.
19. Table VI.G7 (Operations of the Combined OASI and DI Trust Funds, in CPI-Indexed 2020 Dollars, Calendar Years 1970–2095), Social Security Administration, accessed August 5, 2020, https://www.ssa.gov/OACT/TR/2020/lr6g7.html, based on the assumptions used in Social Security Board of Trustees, *2020 Annual Report*.
20. In public opinion surveys, large majorities of Americans consistently express support for Social Security. Many of these surveys are flawed in that they do not clearly distinguish between the concepts of cuts from current benefit levels and decelerations in the rate of future benefit growth. Nevertheless, the findings of the surveys consistently show little appetite to abandon Social Security's current financing framework. One example is Pew Research Center, "Looking to the Future, Public Sees an America in Decline on Many Fronts," March 21, 2019, 44, https://www.pewsocialtrends.org/2019/03/21/retirement-social-security-and-long-term-care.
21. The 1983 amendments aimed to correct a shortfall that was estimated at 1.82 percent of taxable wages in the 1982 trustees' report. Social Security Board of Trustees, *2020 Annual Report*, table VI.B1. However, the trustees' actuarial methods differed in 1982 from today. When measured using the same methodology

used in 1982, today's actuarial shortfall is even larger in relative terms.

22. Social Security Administration, "Summary of P.L. 98-21."
23. Social Security Board of Trustees, *2020 Annual Report*, 5.
24. Author's calculation is based on data published in Social Security Board of Trustees, *2020 Annual Report*.

Furthering Sustainable Solvency

25. For one example, consider the SSA Office of the Chief Actuary's estimates of an immediate, permanent reduction of 1 percentage point in all future Social Security COLAs: Social Security Administration, "Description of Proposed Provision: A1: Starting December 2020, Reduce the Annual COLA by 1 Percentage Point," accessed August 4, 2020, https://www.ssa.gov/OACT/solvency/provisions/charts/chart_run089.html.
26. The assumptions underlying the 1983 trustees' report were also somewhat too optimistic from the standpoint of program finances. However, the subsequent drift out of balance would have occurred even if the projections had been exactly accurate, for the reasons explained in the subsequent paragraphs. As a general rule, long-term Social Security projections have tended to be more accurate than have other federal government projections, such as those that depend on wider economic forecasting or on projecting the unpredictable future cost of healthcare. This greater accuracy has largely been because Social Security finances are shaped primarily by demographics, the rough contours of which are known decades in advance of benefit claims as a result of their significant dependence on fertility patterns already in evidence.
27. See, for example, Social Security Administration, "Appendix K to the report of the 1983 Greenspan Commission on Social Security Reform," accessed August 4, 2020, https://www.ssa.gov/history/reports/gs18b.html, showing the long-term effects of various tax rate changes considered by the Greenspan Commission.
28. Table VI.G2 (OASDI and HI Annual Income Rates, Cost Rates, and Balances, Calendar Years 1970–2095), Social Security Administration, accessed August 20, 2020, https://www.ssa.gov/OACT/TR/2020/lr6g2.html, based on the assumptions used in Social Security Board of Trustees, *2020 Annual Report*.
29. Charles Blahous, *Social Security: The Unfinished Work* (Stanford, CA: Hoover Institution Press, 2010), 54–56; Kent Smetters, "Is the Social Security Trust Fund Worth Anything?" (NBER Working Paper No. w9845, National Bureau of Economic Research, Cambridge, MA, July 2003); Sita Nataraj and John Shoven, "Has the Unified Budget Undermined the Federal Government Trust Funds?" (NBER Working Paper No. 10953, National Bureau of Economic Research, Cambridge, MA, December 2004).
30. Social Security Board of Trustees, *2020 Annual Report*, 52.

Moderating Cost Growth

31. Table VI.G2 (OASDI and HI Annual Income Rates, Cost Rates, and Balances, Calendar Years 1970–2095).
32. Table VI.G4 (OASDI and HI Annual Income, Cost, and Balance as a Percentage of GDP, Calendar Years 1970–2095), Social Security Administration, accessed August 20, 2020, https://www.ssa.gov/OACT/TR/2020/lr6g4.html, based on the assumptions used in Social Security Board of Trustees, *2020 Annual Report*.
33. Congressional Budget Office, *The Budget and Economic Outlook 2020 to 2030*, January 2020, 18, 22.
34. Table V.A5 (Cohort Life Expectancy), Social Security Administration, accessed August 20, 2020, https://www.ssa.gov/OACT/TR/2020/lr_5a5.html, based on the assumptions used in Social Security Board of Trustees, *2020 Annual Report*.
35. Social Security Office of Retirement and Disability Policy, *Annual Statistical Supplement,*

2019, table 6.A4, https://www.ssa.gov/policy/docs/statcomps/supplement/2019/6a.html#table6.a4.

36. The date of 2025 cited in the text and on the graph refers to when individuals turning 65 are eligible for benefits. Social Security often presents dates in terms of when individuals turn 62, which in this case would be 2022. Geoffrey Kollmann, *Social Security: Summary of Major Changes in the Cash Benefits Program*, Congressional Research Service, May 2000, https://www.ssa.gov/history/reports/crsleghist2.html.
37. Social Security Office of Retirement and Disability Policy, *Annual Statistical Supplement, 2019*, table 6.A4, https://www.ssa.gov/policy/docs/statcomps/supplement/2019/6a.html#table6.a4. The table notes that today more than half of beneficiaries claim either disability benefits or OASI benefits before age 65. The generation that fought the Spanish-American War was not eligible to claim Social Security worker benefits of any kind before age 65.
38. This example refers to a worker with career-average wages at roughly the national Average Wage Index. Such a worker would be roughly at the 56th percentile of all beneficiaries—that is, slightly better off than the median worker. Table V.C7 (Annual Scheduled Benefit Amounts for Retired Workers with Various Pre-retirement Earnings Patterns Based on Intermediate Assumptions, Calendar Years 1940–2095), Social Security Administration, accessed August 5, 2020, https://www.ssa.gov/OACT/TR/2020/lr5c7.html, based on the assumptions used in Social Security Board of Trustees, *2020 Annual Report*.
39. President George W. Bush, "State of the Union Address," *Washington Post*, February 2, 2005. Substantial real per capita benefit growth could be sustainable in a national pension system—if that system's demographics were different from those of the US Social Security system. Hypothetical examples include a nation that was not experiencing population aging or a pension system where changes to eligibility rules maintained a constant ratio of workers to beneficiaries. Each of the factors described in the text is important in producing Social Security's financial imbalance, but it is the combination of them—namely, a declining worker–collector ratio, real per capita benefit growth, and largely pay-as-you-go financing—that matters. For example, a fully funded system in which workers prefunded their own benefits could deliver real per capita benefit growth even with population aging. Alternatively, a pay-as-you go system could provide for such benefit growth if it were not experiencing declines in the worker–collector ratio because of population aging; finally, a nation with US demographics could also provide a slower rate of benefit growth than Social Security's current formula, in a pay-as-you-go system. It is the combination of the three factors (population aging, real per capita benefit growth, and pay-as-you-go financing) that produces the shortfall.
40. Eugene Steuerle, "Congress Is Supposed to Decide How the U.S. Spends Money. Soon, It Won't Be Able To," *Washington Post*, September 2019.
41. This method of indexing prior earnings into current terms is problematic for reasons that go beyond the scope of this illustration. However, because the data publicly available from the Social Security Administration website rely on this method to develop worker earnings profiles, the method is used here for the purpose of illustration.
42. The calculated figure is $54,217. All of the benefit and earnings estimates in this box have been limited to three significant figures to acknowledge imprecision.
43. Author's calculations with reference to data provided at https://www.ssa.gov/OACT/TR/2020/lr5c7.html. The "replacement rate" published by SSA cited here is not a percentage of the worker's previous earnings, as commonly used by financial planners. Rather, it is a percentage of the worker's average career earnings indexed into present terms using growth in the national AWI—in other

words, for the growth in average earnings by all American workers since the worker's own earnings history was compiled. Thus, the percentage "replacement rate" shown is conceptually closer to a comparison between the retiree's benefits and the earnings of younger workers who occupy the same relative position in the wage distribution of the current workforce that the retiree held in the earlier workforce, than it is to a comparison with the real value of the beneficiary's own earnings during his or her previous working years.

44. Congressional Research Service, "How Social Security Benefits Are Computed: In Brief," updated May 2019, 4.
45. National Committee to Preserve Social Security and Medicare, "Progressive Price Indexing and Social Security Benefits," October 2008, https://www.ncpssm.org/documents/foundation-archives/progressive-price-indexing-social-security-benefits-2.
46. Andrew Biggs, "Data Show Social Security Expansion Shouldn't Be Presidential Priority," *Forbes*, November 2019; Congressional Budget Office, "The Distribution of Household Income, 2016," July 2019.
47. Drew DeSilver, "For Most U.S. Workers, Wages Have Barely Budged for Decades," Pew Research Center, August 2018.
48. Andrew Biggs, "Data Show Social Security Expansion Shouldn't Be Presidential Priority." Retirement income from retirement plans and investments grew by even more during this period, also lowering worker standards of living compared to retirement living standards, but generally as a result of voluntary individual action. It should be recognized that relative growth in retirement income per household could also reflect a growing number of workers per household. Although increasing numbers of two-income households may account for some of the trend observed by Biggs, such growth would not affect the trend shown in figure 7, which relates Social Security benefits to after-tax earnings for an individual worker.
49. Table V.C7 (Annual Scheduled Benefit Amounts for Retired Workers with Various Pre-retirement Earnings Patterns Based on Intermediate Assumptions, Calendar Years 1940–2095), Social Security Administration, accessed August 4, 2020, https://www.ssa.gov/OACT/TR/2020/lr5c7.html, based on the assumptions used in Social Security Board of Trustees, *2020 Annual Report*.
50. Congressional Budget Office, "The 2019 Long-Term Budget Outlook," June 2019; also note Nick Routley, "Visualizing Income Levels by Age Group," *Visual Capitalist*, December 5, 2018.
51. Social Security Board of Trustees, *Status of the Social Security and Medicare Programs*, 2020, 11.

Restoring Intergenerational Equity

52. Congressional Budget Office, "Is Social Security Progressive?," Economic and Budget Issue Brief, December 15, 2006.
53. Social Security Board of Trustees, *2020 Annual Report*, 206.
54. Social Security Board of Trustees, *2020 Annual Report*, 49. See especially table VI.A3 (https://www.ssa.gov/oact/tr/2020/VI_A_cyoper_hist.html#293711) and table VI.F2 (https://www.ssa.gov/oact/tr/2020/VI_F_infinite.html#1000308).
55. The category "individuals in the Social Security system already" includes current taxpaying workers as well as current beneficiaries, per the analysis published in the Social Security trustees' report. As subsequent paragraphs explain, most of this shortfall is attributable to an excess of benefits over taxes for the first generation of Social Security beneficiaries.
56. The qualifying phrase "at best" in this sentence is potentially significant. Most (but not all) studies find that Social Security tends to somewhat reduce the stock of national savings and thereby to reduce the economic resources available to finance retirement income. Accordingly, any income gains by some individuals through Social Security are

likely somewhat exceeded by the income losses experienced by others. Andrew Biggs, "The Real Retirement Crisis: It's Not Where You Think" Statement before the House Committee on Ways and Means Subcommittee on Social Security, American Enterprise Institute, February 2019; Kent Smetters, "Is the Social Security Trust Fund Worth Anything?" (NBER Working Paper No. w9845, National Bureau of Economic Research, Cambridge, MA, July 2003); Congressional Budget Office, "Social Security and Private Saving: A Review of the Empirical Evidence," July 1998.

57. Dean R. Leimer, "The Legacy Debt Associated with Past Social Security Transfers," *Social Security Bulletin* 76, November 3, 2016.
58. Peter Diamond and Peter Orszag, "Reforming Social Security: A Balanced Plan" (Brookings Institution Policy Brief #126, Brookings Institution, Washington, DC, December, 2003).
59. Dean R. Leimer, "The Legacy Debt Associated with Past Social Security Transfers," *Social Security Bulletin* 76, November 3, 2016.
60. The SSA analysis somewhat overstates actual money's worth ratios because, by comparing only payroll tax contributions and benefits, it does not account for the degree to which benefits have been financed by general government revenues—for example, when the payroll tax rate was temporarily reduced in 2011–2012. The SSA actuarial note acknowledges the fact of this overstatement but cannot quantify its extent. Social Security Administration, "Money's Worth Ratios under the OASDI Program for Typical Hypothetical Workers," Actuarial Note Number 2019.7, March 2020.
61. Social Security Administration, "Money's Worth Ratios." Compare tables 2 and 3 (https://www.ssa.gov/oact/NOTES/ran7/an2019-7.pdf).
62. Senator Elizabeth Warren (D-MA), "My Plan to Expand Social Security," September 12, 2019, https://medium.com/@teamwarren/expanding-social-security-4db2f3617ca9; Committee for a Responsible Federal Budget, "Bernie Sanders's Social Security Expansion Act," November 2019.
63. An across-the-board benefit increase is also unjustified from the standpoint of larger national retirement policy considerations. As Andrew Biggs has documented in several publications, individual Americans' retirement preparedness is greater than commonly understood, while government-sponsored defined benefit plans are systemically underfunded. Increasing Social Security benefit promises would worsen the government underfunding problem while further crowding out individual retirement saving. See Andrew Biggs, "The Phony Retirement Crisis," *Wall Street Journal*, March 1, 2019.
64. Rob McClelland, "Differences between the Traditional CPI and the Chained CPI," Congressional Budget Office blog, April 2013; Marc Goldwein, Jason Peuquet, and Adam Rosenberg, "Measuring Up: The Case for the Chained CPI," *Moment of Truth Project* (National Commission on Fiscal Responsibility and Reform), updated March 2013.
65. C-CPI-U is more accurate than CPI-W in part because it accounts for substitutions in buying patterns in response to prices. Opponents of CPI reform, including some who advocate increasing COLAs by basing them on CPI-E (an experimental measure of inflation as experienced specifically by the elderly) sometimes argue that adopting C-CPI-U would fail to recognize the true costs seniors face (such as rising healthcare costs) and would also increase the risk of poverty at advanced ages. These concerns warrant consideration by policymakers. They are not, however, appropriately addressed by failing to accurately measure general price inflation as the Social Security Act intends. It would be inefficient to attempt to limit poverty among the oldest seniors by overpaying COLAs at all ages to beneficiaries of all income levels. Such systemwide COLA overpayments cost far more than would additional benefit protections targeting the poorest, oldest beneficiaries. Such COLA overpayments also regressively redistribute income toward higher-income

individuals who tend to live longer. Although rising healthcare costs are an important policy concern, they are mostly a healthcare financing concern rather than a matter of estimating price inflation, which is the purpose of the CPI.

66. Alicia Munnell, "Why Politicians Should Consider Transferring Social Security's Legacy Debt to the Treasury," *MarketWatch*, November 2016.
67. Some might regard this change as beneficial, in that eliminating the framework of a self-financing "earned benefit" system may reduce political barriers to future financial corrections in the form of benefit adjustments.
68. In theory, an income tax–financed solution could lift the financing burden of the legacy debt from future generations if, for example, the new taxes were imposed entirely on current beneficiaries and discontinued for younger participants. However, no one has advocated for the enormous near-term tax increases that would be required to discharge the legacy debt if they were imposed exclusively on today's seniors. Accordingly, existing proposals to finance the legacy debt with general income tax revenues would not redistribute generational financing burdens to the degree that a solution consisting of near-term benefit growth restraints would do.
69. As explained later in this study, raising the cap on taxable wages without reducing the top factor in Social Security's benefit formula would result in only a slight improvement to long-term Social Security finances, because a substantial portion of the increased revenue collections would later be paid out as additional benefits. The change would nevertheless reduce younger generations' net income losses expressed as a percentage of future workers' taxable earnings, for the simple reason that total taxable earnings would be increased.

Correcting Work and Saving Disincentives

70. As the 1935 report of the president's Committee on Economic Security stated, "The depression has largely wiped out wage earners' savings and has deprived millions of workers past middle life of their jobs, with but uncertain prospects of ever again returning to steady employment. For years there has been some tendency toward a decrease in the percentage of old people gainfully employed. Employment difficulties for middle-aged and older workers have been increasing, and there is little possibility that there will be a reversal of this trend in the near future." The President's Committee on Economic Security, *Report of the Committee on Economic Security*, January 1935, https://www.ssa.gov/history/reports/ces/ces5.html.
71. Table V.C7 (Annual Scheduled Benefit Amounts for Retired Workers with Various Pre-retirement Earnings Patterns Based on Intermediate Assumptions, Calendar Years 1940–2095), Social Security Administration, accessed August 20, 2020, https://www.ssa.gov/OACT/TR/2020/lr5c7.html, based on the assumptions used in Social Security Board of Trustees, *2020 Annual Report*.
72. Edith Baker, "Down and Down We Go: The Falling U.S. Labor Force Participation Rate," *Monthly Labor Review*, Bureau of Labor Statistics, October 2018.
73. Society of Actuaries, *2011 Risks and Process of Retirement Survey Report*, June 2012.
74. Gila Bronshtein, Jason Scott, John B. Shoven, and Sita N. Slavov, "The Power of Working Longer" (NBER Working Paper No. 24226, National Bureau of Economic Research, Cambridge, MA, January 2018).
75. Esteban Calvo, "Does Working Longer Make People Healthier and Happier?," Center for Retirement Research, Boston College, 2006; Chris Farrell, "A Benefit of Working Longer: Keeping Your Brain Sharp," *NextAvenue*, June 26, 2017.
76. Social Security Office of Retirement and Disability Policy, *Annual Statistical Supplement, 2019*, table 6.A4, https://www.ssa.gov/policy/docs/statcomps/supplement/2019/6a.html#table6.a4.

77. Longevity gains have not been shared equally across income levels, with life spans of higher-income individuals lengthening compared to lower-income individuals. A later section of this study discusses how the longevity differentials can best be factored into adjustments to Social Security's statutory eligibility ages.
78. Even during years 1–35, benefit accruals are not strictly proportionate with additional earnings, because the benefit formula is progressive: the more one earns over the course of a working career, the lower the benefit returns on payroll tax contributions.
79. Andrew Biggs, "A New Vision for Social Security," *National Affairs*, Summer 2013.
80. Jeffrey Liebman, Erzo Luttmer, and David Seif, "Labor Supply Responses to Marginal Social Security Benefits," *Journal of Public Economics*, July 2009.
81. Commission on Retirement Security, *Report of the Commission on Retirement Security and Personal Savings*, Bipartisan Policy Center, June 2016, 91.
82. Social Security Administration, "Early or Late Retirement?," Social Security Online, https://www.ssa.gov/oact/quickcalc/early_late.html; Social Security Administration, "Delayed Retirement Credits," accessed August 5, 2020, https://www.ssa.gov/planners/retire/delayret.html.
83. Alicia Munnell and Anqi Chen, "Are Social Security's Actuarial Adjustments Still Correct?," Center for Retirement Research at Boston College, November 2019.
84. Liebman, Luttmer, and Seif, "Labor Supply Responses."
85. For this reason, some policymakers, such as the late Senator Tom Coburn (R-OK), proposed that disabled beneficiaries be converted to old-age beneficiaries at the EEA. Committee for a Responsible Federal Budget, "Sen. Coburn Introduces Bill to Reform SSDI," December 2014.
86. For a fuller description of how the RET operates, see Social Security Administration, "Retirement Earnings Test," June 2015, https://www.ssa.gov/policy/docs/program-explainers/retirement-earnings-test.html; and Social Security Administration, "Exempt Amounts under the Earnings Test," accessed August 5, 2020, https://www.ssa.gov/OACT/COLA/rtea.html. For 2020, the threshold amounts are $18,420 and $48,600.
87. Disabled beneficiaries are converted to old-age beneficiaries once they reach the full retirement age.
88. Andrew Biggs, "A Tax Reform to Keep Seniors on the Job," *Wall Street Journal*, November 4, 2015.
89. Social Security Office of the Chief Actuary, Stephen Goss, Alice Wade, and Christopher Chaplain, "Memorandum to Mark Warshawsky," Social Security Administration, September 2008, https://www.ssa.gov/oact/solvency/Warshawsky_20080917.pdf; Gopi Goda, John Shoven, and Sita Slavov, "Removing the Disincentives for Long Careers in the Social Security and Medicare Benefit Structure" (SIEPR Discussion Paper No. 08-58, Stanford Institute for Economic Policy Research, January 2008).
90. Social Security Office of Retirement and Disability Policy, *Annual Statistical Supplement, 2019*, table 6.A4, https://www.ssa.gov/policy/docs/statcomps/supplement/2019/6a.html#table6.a4.
91. Raimond Maurer et al., "Optimal Social Security Claiming Behavior under Lump Sum Incentives: Theory and Evidence" (CFS Working Paper No. 629, Center for Financial Studies, 2019).
92. Olivia Mitchell, "Why a Lump-Sum Payment Should Be Part of Social Security," *MarketWatch*, April 2016, using data from Maurer et al., "Optimal Social Security Claiming Behavior." Mitchell concludes that individuals generally prefer a "bird in the hand," that is, to receive money up front rather than to depend on a future schedule of deferred, gradual payouts.
93. Carolyn O'Hara, "How Much Money Do I Need to Retire?," *AARP Magazine*, accessed August 5,

2020, https://www.aarp.org/work/retirement-planning/info-2015/nest-egg-retirement-amount.html#quest1; Robert Berger, "7 Rules of Thumb for Retirement Planning," *U.S. News and World Report*, August 2013.

94. The numbers shown in table 2 are for individuals. Shared household replacement rates, which include spousal and survivor benefits, would generally be higher.
95. DQYDJ, "How Much Do People Save, by Income?," updated November 14, 2019, https://dqydj.com/how-much-do-people-save-by-income/.
96. The commonly and often erroneously cited typical Social Security replacement rate of 41 percent refers to a different concept, specifically the ratio of a retiree's initial Social Security benefit compared to the earnings of younger workers in the surrounding workforce at the time the benefits are paid. For an example of such a citation, see Economic Policy Institute, "Social Security Replacing Smaller Portions of Workers' Income," January 20, 2011.
97. Congressional Budget Office, "Social Security and Private Saving: A Review of the Empirical Evidence," CBO Memorandum, July 1998, https://www.cbo.gov/sites/default/files/105th-congress-1997-1998/reports/ssprisav.pdf.
98. Americans would have reason to save more if they doubted they would receive Social Security benefits, but researchers have struggled to understand Americans' true beliefs about the future reliability of such benefits; the skepticism expressed in opinion surveys is not generally reflected in saving behavior. For background, see Frank Newport, "Many Americans Doubt They Will Get Social Security Benefits," Gallup, August 13, 2015.
99. Social Security Office of the Chief Actuary, "Memorandum to Chairman Larson, Senator Blumenthal and Senator Van Hollen," September 2019, https://www.ssa.gov/OACT/solvency/LarsonBlumenthalVanHollen_20190918.pdf; Social Security Office of the Chief Actuary, "Memorandum to Chairman Johnson and Representative Smith," September 2017, https://www.ssa.gov/OACT/solvency/JohnsonSmith_20170919.pdf.

Restoring Purpose to Income Redistribution

100. Geoffrey Kollmann, "Social Security: Summary of Major Changes to the Cash Benefit Program," Congressional Research Service, 2000, https://www.ssa.gov/history/reports/crsleghist2.html.
101. Charles Blahous and Jason Fichtner, "Limiting Social Security's Drag on Economic Growth," in *The 4% Solution*, ed. Brendan Miniter (Dallas: George W. Bush Institute, July 2012).
102. Social Security Administration, "Internal Real Rates of Return Under the OASDI Program for Typical Hypothetical Workers," Actuarial Note Number 2019.5, March 2020, table 3.
103. Table V.C7 (Annual Scheduled Benefit Amounts for Retired Workers with Various Pre-retirement Earnings Patterns Based on Intermediate Assumptions, Calendar Years 1940–2095), Social Security Administration, accessed August 20, 2020, https://www.ssa.gov/OACT/TR/2020/lr5c7.html, based on the assumptions used in Social Security Board of Trustees, *2020 Annual Report*.
104. Table III.A5 in Social Security Board of Trustees, *2020 Annual Report*, 35.
105. Social Security Office of the Chief Actuary, "Memorandum to Virginia Reno," Social Security Administration, October 2009, https://www.ssa.gov/OACT/solvency/NASI_20091030.pdf; Social Security Office of the Chief Actuary, "Memorandum to Kent Conrad and Jim Lockhart," Social Security Administration, June 2016, https://www.ssa.gov/OACT/solvency/BPC_20160609.pdf.
106. Another idea that has been put forward to limit redistribution from parents to nonparents is to restructure the Social Security payroll tax rate so that it provides parents with an effective tax deduction for each dependent child under the age of 18. For example, in a book chapter written with Jason Fichtner, I explored raising

the Social Security payroll tax rate for childless adults from 12.4 percent to 14.4 percent, with a reduction of 2.5 percentage points for each dependent child under 18. Blahous and Fichtner, "Limiting Social Security's Drag."

107. Social Security Office of the Chief Actuary, "Memorandum to Congresswoman Gwen Moore," Social Security Administration, December, 2019, https://www.ssa.gov/OACT/solvency/GMoore_20191211.pdf.
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109. The FRA will be 67 in 2022 for workers turning 62 in that year or 2025 for workers turning 65 in that year.
110. National Committee to Preserve Social Security and Medicare, *Raising the Social Security Retirement Age: A Cut in Benefits for Future Retirees*, Social Security Policy Papers, October 2018.
111. It could be argued theoretically that an FRA increase is equivalent to a benefit cut if individual claimants receive no signals from the FRA increase to the effect that normal retirement will occur at a later age, and instead simply continue to claim at unchanging ages while receiving lower annual benefits. This, however, is not what is observed. The timing of individual claim decisions is heavily influenced by how both the EEA and FRA are set, as documented elsewhere in this study. Eligibility age changes thus increase the annual benefits that can be paid from a given tax rate, rather than acting simply as a benefit cut.
112. Rebecca Vallas, Jackie Odum, and Rachel West, "Yet Another Reason Raising the Social Security Retirement Age Is a Terrible Idea," Center for American Progress, May 2016.
113. Katelin Isaacs and Sharmila Choudhury, *The Growing Gap in Life Expectancy by Income*, Congressional Research Service, May 2017.
114. National Commission on Fiscal Responsibility and Reform, *Moment of Truth*, 51.
115. Actuarial adjustments for early and delayed retirement claims are the same percentages for all workers and are based on historical estimates of average life expectancy. The adjustment method permits individuals to optimize their expected lifetime benefits through their selection of a claim age, on the basis of whether they expect to live a longer or a shorter life than the average.
116. Social Security Administration, *Appendix 2 to Subpart P of Part 404—Medical-Vocational Guidelines*, updated April 27, 2020, https://www.ssa.gov/OP_Home/cfr20/404/404-app-p02.htm.
117. Howard N. Fullerton Jr., "Labor Force Participation: 75 Years of Change," *Monthly Labor Review*, December 1999.
118. Fullerton, "Labor Force Participation," 5.
119. Fullerton, 4; US Bureau of Labor Statistics, "Civilian Labor Force Participation by Age, Sex, Race, and Ethnicity," last modified September 4, 2019, https://www.bls.gov/emp/tables/civilian-labor-force-participation-rate.htm.
120. Fullerton, "Labor Force Participation," 5.
121. Steve Goss, Alice Wade, and Chris Chaplain, "Estimated Financial Effects of Several Social Security Reform Options," June 2008, https://www.ssa.gov/OACT/solvency/AARP_20080619.pdf. This memorandum actually shows a slight worsening of Social Security's actuarial imbalance under an EEA increase, because of a quirk in Social Security's benefit formula indexing methods.
122. Social Security Office of the Chief Actuary, "Provisions Affecting Retirement Age," accessed August 5, 2020, https://www.ssa.gov/OACT/solvency/provisions/retireage.html.
123. Social Security Office of the Chief Actuary, "Summary Measures and Graphs," Solvency Provision C1.3, accessed August 5, 2020, https://www.ssa.gov/OACT/solvency/provisions/charts/chart_run112.html.
124. Author's calculations, making use of the projections at Social Security Office of the Chief Actuary, "Summary Measures and Graphs," Solvency Provision C2.2, accessed

August 5, 2020, https://www.ssa.gov/OACT/solvency/provisions/charts/chart_run138.html. Estimated savings under the change illustrated in the text would be somewhat less than under the Warshawsky provision because the illustrative change would have a somewhat higher EEA and because the illustrative provision would take longer to phase in changes to the FRA before 2046.

125. Social Security's current benefit formula misidentifies these individuals as lower-income workers on the basis of their career-average earnings, which are lowered by the inclusion of several zero-earnings years among those averaged.
126. Social Security Office of the Chief Actuary, "Summary Measures and Graphs," Solvency Provision A3, accessed August 5, 2020, https://www.ssa.gov/OACT/solvency/provisions/charts/chart_run141.html.
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Conclusion

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