SOCIAL SECURITY RECONSIDERED

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Social Security is currently much in the news because it faces a projected funding gap, because of overall budget deficits, and because of doubts in some quarters about its design. Minor adjustments are sufficient to close the funding gap. Benefit cuts, even if considered desirable, would not help close the overall budget gap in a timely way. Some adjustments in Social Security benefits and financing are desirable, but large scale changes would be disruptive and would not well serve the program's basic purposes — to provide assured, basic income to retirees, the disabled, and survivors — unless they more or less replicated the current program.

Social Security assures people basic income in defined contingencies, providing a floor to undergird private saving. The program has been remarkably successful in performing these functions. Of families age 65 or over, 64 percent received half or more of their income and 22 percent received all of it from Social Security in 2008. In public opinion polls, Social Security consistently ranks as the most popular government program. Nonetheless, the size and structure of Social Security now generate intense public interest for three reasons:

- The Social Security Trust Funds face a projected long-term funding gap. If the trust fund is exhausted and revenues are less than benefits at that time, financial rules would require benefit cuts. A financially-driven benefit cut has never happened before, but it is projected to occur in 2037 (Board of Trustees, 2010). If nothing were done before then and the projections do not prove to be unduly pessimistic, it would be necessary in 2037 either to cut benefits by approximately 24 percent or, to sustain benefits, raise earmarked revenues 32 percent.[1] Alternatively, action could be taken earlier to raise earmarked taxes, cut promised benefits, or boost the investment yield on accumulated Social Security reserves.

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[1] In practice, benefit payments are delayed rather than cut.

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- Independently of the trust fund gap, federal spending is expected to exceed total revenues by progressively larger amounts. Eventually, large continued budget deficits would threaten the stability of the U.S. economy. Because Social Security spending and earmarked revenues are large — accounting for 20 percent of federal government spending and 29 percent of federal revenues in 2010 — many believe that measures to lower projected Trust Fund gaps could help close future budget deficits.[2]

- Finally, elected officials and analysts continue to disagree on whether Social Security could be structured to better achieve the objectives of social insurance — to assure basic income to retirees, the disabled, and dependent survivors of early decedents. The disagreements extend to both the design and the size of the program. Social Security was designed three-quarters of a century ago for a nation that was different in many respects from modern America. Changing circumstances might require revisions in the ways people cope with retirement, disability, or the death of a bread-winner. In addition, ideological divisions — over the extent to which, if at all, the government should use its sovereign authority to impose taxes in order to pay for pensions — that date from the creation of the program persist to this day.

I shall take up each of these issues in turn. On the first question, all of the projected funding gap facing the Social Security Trust Funds — and more — results from the payment of benefits to people who qualified for benefits early in the life of the program.[3] How to service the debt incurred because of payments made to people, most of whom are dead or retired, goes to the heart of the way the financing of Social Security is framed in the public mind.

The Social Security actuaries project that Social Security spending, as a share of GDP, will rise 1.2 percent between 2010–2030, but will then fall by 0.2 percent between 2030–2050 as baby-boomers die and are replaced by smaller age cohorts and because the share of total compensation subject to tax is projected to continue to fall. The Congressional Budget Office (CBO) (2009) anticipates that the share of GDP devoted to Social Security will increase a bit more — 1.8 percent — between 2010–2030 and then fall back to 1.5 percent of GDP between 2010–2050. In both cases, Social Security accounts for a negligible share of the total projected increase in federal spending.[4]

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[2] Officially, Social Security spending and revenues are "off-budget," along with operations of the Postal Service. In practice, all reports of budget balance merge these off-budget accounts with so-called "on-budget" government operations.

[3] Perhaps the most dramatic example is that of the first Social Security beneficiary, who paid $49.50 in payroll tax (including her employer's tax payment) and received benefits totaling $22,888.92. See "Research Note #3: Details of Ida May Fuller's Payroll Tax Contributions." Social Security Online, http://ssa.gov/history/idapayroll.html.

[4] Technically, Social Security should not be included in future projected deficits after 2037 because law prohibits benefit payments from exceeding current earmarked revenues after Trust Fund balances have been exhausted. However, the Gramm-Rudman-Hollings legislation enacted in 1985 instructs the CBO to ignore this requirement. Consequently, CBO projects Social Security spending exceeding earmarked revenues, so that its long-term budget projections show deficits that are larger than actually authorized under current law.

More importantly, if the ratio of debt to GDP is to be stabilized before it reaches levels widely regarded as dangerous, budget deficits must be reined in long before 2030. Because Social Security accounts for one fifth of non-interest government spending, various study commissions have proposed that benefits be cut (National Research Council and National Academy of Public Administration, 2010; National Commission on Fiscal Responsibility and Reform, 2010; Bipartisan Policy Center, 2010). For reasons to be described below, however, cutbacks in Social Security benefits are unlikely to kick in fast enough to help materially in stabilizing the debt/GDP ratio.

The third question concerns whether a pension program designed in the Great Depression remains well suited to the 21st century United States. My conclusion is that wholesale change is undesirable but that various adjustments should be made. Indeed, increases in various risks that people commonly face have heightened the importance of the assured basic income that Social Security provides. It is certainly possible through the exercise of enormous ingenuity to conceive of alternative arrangements that would reproduce many of the benefits generated by Social Security. The transition to such arrangements would be laborious and costly. In the end, such a shift would produce few if any demonstrable benefits. In particular, current proposals to replace some or all of the current Social Security system with individually owned private accounts have not been shown to advance any legitimate national objective. Specifically, private accounts are neither necessary for, nor sufficient to, promote increased pension saving.

I. THE PROJECTED LONG-TERM FUNDING GAP IN SOCIAL SECURITY

The Social Security Trustees annually publish projections of the balance between program outlays and revenues stretching 75 years into the future.[5] Costs and revenues are commonly stated as percentages of payrolls subject to the payroll tax. The 2010 projection reported that benefits would average 15.93 percent of payroll and revenues would average 14.01 percent of taxable payroll over the next 75 years, resulting in a gap of 1.92 percent of payroll.[6] The principal source of revenue is an earmarked payroll tax, levied at a combined rate (on employers and employees) of 12.4 percent on earnings

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[5]   These annual trustees reports are prepared by the Social Security actuaries after consultation with panels of outside experts regarding economic, demographic, and other assumptions. The projections are made under assumptions regarded as encompassing a reasonable range, but are not forecasts. The reports are signed by three cabinet officers, the Commissioner of Social Security, and two public trustees, one selected by each major party; for example, see "History of the Boards of Trustees and the Public Trustee Positions of the Social Security & Medicare Trust Funds." Social Security Online, http://www.ssa.gov/history/reports/trustees/historypt.html.

[6]   Year-to-year changes in the estimated levels of and differences between costs and benefits are typically small, even when seemingly significant events occur. There are two reasons why these changes are small. First, the actuaries are slow to adjust key parameters that govern projections over the full 75 year projection period. Implicit in this policy is the assumption that mean reversion is strong in most key variables. Second, large but temporary changes in key parameters have only a small statistical weight in 75-year averages. In addition, large and frequent parameter changes would produce large and frequently reversed estimates of the size of funding gaps or surpluses that would undermine the credence that elected officials and the general public place in the projections.

up to $106,800 in 2011. (Additional revenues come from income taxes collected from the inclusion of some benefits in taxable personal income.)

An imbalance between projected revenues and expenditures has emerged gradually since 1983 when Congress enacted legislation to close a projected funding gap. In 1983 the system was projected to be in balance over the succeeding 75 years — from 1983–2058. The system is now projected to be out of balance over the 75 year period from 2010–2085. Why that gap emerged is instructive. The 1983 legislation set revenues to exceed outlays in the first part of the projection period, generating a sizeable trust fund that would cover cash-flow gaps anticipated for later years. At the end of 75 years, the system would be left with tiny residual reserves, but with gaps in the 76th year and beyond. That funding pattern virtually guaranteed that gaps would reemerge. Every year after 1983, the projection period included one more "deficit" year at the end of the projection period and one less "surplus" year at the start.

About five-sixths of the gap that has emerged since 1983 is attributable to the change in the projection period (Table 1). The other one-sixth of the currently projected gap reflects partially offsetting revisions in assumptions used in the 1983 projections regarding the economy, the extent of individual disability, and demographic factors, as well as the effects of new legislation. Thus, the 1983 reforms, correctly celebrated for averting an imminent Social Security crisis, virtually guaranteed the return of deficits and a funding gap, and the need for further legislation to close it.

It is important that Congress not make the same mistake again when it acts to close the currently projected long-term funding gap. Congress should set revenues and expenditures to follow roughly parallel trajectories at the end of the projection period. Parallel trajectories can be satisfied with a small or a large trust fund. A large trust fund would imply that earmarked tax revenues remain permanently below outlays by the amount of interest income earned on trust fund assets.

Whether the trust funds add to national saving depends on how other economic actors — public and private — respond to them. The most obvious offset could come from increases in spending or cuts in taxation elsewhere in the federal government budget. Private savers can also offset Social Security reserve accumulation if they save less in response to trust fund surpluses.[7] The literature provides conflicting evidence on how trust fund surpluses affect the balance in the rest of the federal budget and private saving.[8]

Whatever its economic effects, trust fund financing has had important political consequences. Franklin Roosevelt famously predicted that if workers paid taxes earmarked for Social Security all efforts to repeal the program would fail.[9] Whether or not history

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[7] Note that the question is not whether Social Security benefits induce people to save less (or more, as some have argued), but whether added reserve accumulation separately induces a change in private saving.

[8] Burtless and Bosworth (2004) report that pension reserve accumulation by states was not offset to any significant degree by increased budget deficits but that international comparisons indicate that roughly half of national social insurance reserve accumulation was offset by increased budget deficits.

[9] Roosevelt's words were: "We put those payroll contributions there so as to give the contributors a legal, moral, and political right to collect their pensions and unemployment benefits. With those taxes in there, no damn politician can ever scrap my social security program." See "Congress and the New Deal: Social Security." U.S. National Archives and Records Administration, http://www.archives.gov/exhibits/treasures_of_congress/text/page19_text.html.

indefinitely validates Roosevelt's faith in the power of earmarked financing, trust fund financing and the associated annual financial reports have had another important effect — they have focused the attention of the public and of elected officials on the program's long-term finances. Except for Medicare, which is also financed through trust funds, no other major government program is held to a similar standard. Indeed, much of the growing concern about long-term budget deficits is focused on projected spending on Medicare and Social Security.[10] Trust fund financing and the accompanying emphasis on long term balance has made it virtually impossible to raise benefits without simultaneously paying for them. This conservative principle of good budget housekeeping is notably absent from debates on tax legislation and was ignored during the debate on adding a prescription drug benefits to Medicare.[11]

II. OVERALL BUDGET DEFICITS

Budget analysts project that large federal deficits will persist and grow under current policy (Auerbach and Gale, 2011). The result of such deficits, if permitted to occur, would be a rapid increase in the ratio of debt to GDP. Many believe that rising indebtedness would eventually threaten serious economic consequences, although no one knows for certain just when. In one scenario, bond buyers will at some point come to doubt the capacity or willingness of the U.S. government to service its debt in a non-inflationary manner. They would then demand increased real interest rates, which would lower U.S. investment and consumption. At that point, abrupt and painful fiscal adjustments would become inescapable. To avoid this crisis, spending should soon be cut, taxes increased, or both. Various groups have presented menus of such measures sufficient to hold debt in the hands of the public in the range of 60–80 percent of GDP (National Research Council and National Academy of Public Administration, 2010; The National Commission on Fiscal Responsibility and Reform, 2010; Bipartisan Policy Center, 2010). To meet this numerical goal, policy shifts must start well before 2020, and the debt/GDP ratio must be stabilized before 2025 (Aaron, 2010).

The role that Social Security can or should play in such overall fiscal restraint is controversial and poorly understood. Because Social Security operates under the discipline of trust fund financing, it has reduced the quantity of government debt in the hands of the public. Currently and for the next several years, earmarked tax revenues will approximately equal outlays. The trust funds will continue to grow because of interest earnings on accumulated assets. Under current conditions, that situation that will continue until 2025. In that year, Social Security outlays are projected to exceed revenues from all

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[10] Current difficulties with the pension plans of private corporations and state and local governments flow in no small measure from the lack until recently of such long-term actuarial estimates. The Employee Retirement Income Security Act of 1974 limited these practices with respect to pensions. But awareness of the unsustainability of commitments to provide health benefits emerged only after revisions in accounting standards forced businesses to "book" the accrued value of such commitments.

[11] Sporadic and now defunct efforts by members of Congress to enforce "pay-as-you-go" rules to tax policy illustrate the problem. Under these rules, tax cuts or increases in mandatory spending had to be offset by tax increases or cuts in mandatory spending. The 112th Congress formally adopted quite different rules — under which tax cuts are permitted without offsetting action of any kind.

Table 1

Changes in the Estimated Long-Range OASDI Actuarial Balance Since the 1993 Trustees Report
(As Percentage of Effective Taxable Payroll)

Year of Report	Legislation	Valuation Period	Demographic Assumptions	Economic Assumptions	Disability Assumptions	All Other[1] Including Methods	Total	Actuarial Balance
1983								0.02
1984		−0.03	0.04	−0.01	−0.11	0.03	−0.08	−0.06
1985	−0.01	−0.03	−0.02	0.09	−0.04	−0.33	−0.35	−0.41
1986		−0.04	0.19	−0.10	−0.05	−0.03	−0.03	−0.44
1987	−0.05	−0.04	−0.09	0.02	−0.02		−0.18	−0.62
1988		−0.05	0.17	−0.13	0.02	0.03	0.04	−0.58
1989		−0.04	0.07	−0.11	−0.04		−0.13	−0.70
1990	−0.01	−0.05	0.03	−0.17	−0.01		−0.21	−0.91
1991	0.17	−0.05	0.04	−0.11	−0.01	−0.22	−0.17	−1.08
1992		−0.05	0.17	−0.10	−0.20	−0.19	−0.38	−1.46
1993		−0.05	0.11	−0.01	−0.08	0.03	0.00	−1.46
1994		−0.05		−0.18	−0.11	−0.31	−0.66	−2.13
1995		−0.07	0.12	0.02	−0.05	−0.07	−0.05	−2.17
1996	0.03	−0.08	−0.03	−0.04	−0.03	0.14	−0.02	−2.19
1997	0.03	−0.08	−0.03	0.06	−0.02		−0.03	−2.23
1998		−0.08	−0.05	0.16	0.01		0.04	−2.19
1999		−0.08	0.03	0.15	0.00	0.02	0.12	−2.07
2000		−0.07	−0.07	0.14	0.00	0.17	0.17	−1.89

2001			−0.07	0.09	0.02	0.02	−0.02	0.03	−1.86
2002			−0.07	−0.05	0.12	0.03	−0.04	−0.01	−1.87
2003			−0.07	−0.04			0.06	−0.04	−1.92
2004			−0.07	0.02	−0.04	0.04	0.08	0.03	−1.89
2005			−0.07	0.03	−0.06	−0.01	0.07	−0.04	−1.92
2006			−0.06	0.03	−0.06	−0.04	0.04	−0.09	−2.02
2007			−0.06	−0.03	0.02	0.06	0.08	0.06	−1.95
2008			−0.06				0.32	0.26	−1.70
2009			−0.05	−0.11	−0.15	−0.01	0.03	−0.30	−2.00
2010			−0.06	−0.05	0.00	−0.02	0.07	0.08	−1.92
Total since 1983 report	0.14	0.31	−1.62	0.59	−0.48	−0.69	−0.04	−1.94	
Percent of total	−16	84	−30	25	35	2	100		

Notes: Data are based on tables in the Trustees Reports for 1984–2010.

(1) "All other" includes updates of starting values, changes in methods, and changes in the definition of actuarial balance.

Sources: Office of the Chief Actuary (2010); Social Security/Medicare Trustees, "History of the Board of Trustees and the Public Trustee Positions of the Social Security & Medicare Trust Funds," http://www.ssa.gov/history/reports/trustees/historypt.html.

sources, causing trust fund balances to begin to fall. When reserves are projected to be exhausted in 2037, the gap between Social Security spending and earmarked revenue will be 1.3 percent of GDP. Nonetheless, total Social Security spending is large, and the view is widespread that the pain of fiscal adjustment should be broadly shared.

Even if benefit cuts are considered desirable, they are unlikely to do much to stabilize the debt/GDP ratio by 2025. A strong and durable bipartisan consensus exists that significant cuts in Social Security should not materially erode benefits of current beneficiaries or those soon to retire. This stance rests on the recognition that current beneficiaries or those near retirement have less capacity than do those who are younger to adjust their saving behavior to prepare for reduced benefits. For that reason any benefit reductions should be phased in slowly. For example, most of the benefit reductions enacted in 1983 applied only to workers under age 45. President George W. Bush's plan scale back Social Security in order to fund individually-owned private accounts excused everyone over age 55 from participation (President's Commission to Strengthen Social Security, 2001). Similarly Representative Paul Ryan (Republican of Wisconsin) in his Roadmap for America's Future Act of 2010 would also excuse everyone over age 55 from proposed cuts in Social Security (Congressional Budget Office, 2011). The deficit-reduction proposals of the National Commission on Fiscal Responsibility and Reform (2010) (the Bowles-Simpson commission) and the Bipartisan Policy Center (2010) (the Rivlin-Domenici commission) would achieve only 2 percent and 1 percent, respectively, of proposed deficit reduction from Social Security by 2020.

A policy of maintaining benefits for everyone over age 45 or 55 means that virtually no savings will occur for several years. Even after several years, savings would initially be small because the cuts would apply only to new beneficiaries, who would be a small, if steadily growing, minority for several more years.[12]

Thus, there is a serous timing-mismatch between when budget deficits must be cut and when cuts in Social Security benefits, if deemed desirable, would be implemented. This temporal "disconnect" does not hold for payroll tax increases, which could be implemented promptly.

III. SHOULD SOCIAL SECURITY BE "DOWN-SIZED" OR RESTRUCTURED?

Social Security combines three major functions, as it provides old age pensions, life insurance (through survivor benefits), and disability insurance. In a world of complete and perfectly competitive markets and fully rational individuals, Social Security would be unnecessary because people would rationally buy the just the right amount of disability and life insurance to hedge risk optimally; they would save optimally for retirement and then use their accumulated savings to buy the mix of annuities, fixed and variable, that would optimize expected utility (Diamond, 2003). People would optimally

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[12] Legislation could change disability or survivor benefits without such a phase-in. But these two programs are smaller than the retirement portion of Social Security.

distribute consumption over their lifetimes and protect themselves optimally against all types of risks to which they might be subject, including risks affecting society as a whole, such as inflation and recession. Taxes and transfers would be used to achieve the optimal achievable income distribution.

That these conditions are not satisfied is well recognized. People are prone to systematic, serious, and well-documented errors of judgment. Capital markets are imperfect. Insurance markets are incomplete because of moral hazard and asymmetric information, insufficient data to compute premiums, and simple lack of entrepreneurial imagination (Shiller, 1998).

The deviations of actual from idealized markets mean that inferences about alleged welfare losses generated by Social Security drawn from models that presume the existence of complete markets, perfect information, and rational planning over long, even infinite, horizons are misleading. These deviations also imply that government-provided, Social Security-like benefits may serve functions that private markets cannot perform readily or at all and that other government policies cannot perform as well. These functions include avoiding the following risks or behaviors and production inefficiencies:

- Modifying socially unacceptable levels of income or offsetting drops of income among the elderly, disabled, and surviving dependents;
- Correcting inescapable imperfections in annuity markets arising from asymmetric information and adverse selection;
- Correcting decision errors by individuals arising from myopia and procrastination both naive ("I know I should start saving now, but I'm going to wait — just this once — I'll do it later") and sophisticated ("I know I should start saving, but I'm going to wait and do it later, but I recognize that I may not");
- Providing protection from risks against which private markets cannot provide insurance, including future inflation and fluctuations in interest rates and asset prices;
- Offsetting moral hazard affecting consumption and saving, arising from societal unwillingness to tolerate poverty ("why save, if the resulting saving will support income just above the socially unacceptable floor?"); and
- Achieving scale economies and avoiding socially unproductive selling costs for a "product" — income during retirement, disability, and survivorship — that is mandatory.

Private markets cannot deal effectively with these problems for a variety of reasons. They cannot be used purposively to redistribute income to achieve social objectives. They cannot in any practicable way overcome information asymmetries that cause annuity markets to work poorly. They cannot overcome the individual myopia and procrastination that lead to insufficient saving early enough in life to meet retirement income targets, or cause people to annuitize optimally. Private markets cannot offset

the moral hazard — lowered incentives to save — that arises from a social commitment to assure basic income under specified contingencies. No private plan matches the low overhead of the Social Security Administration, whose ratio of administrative costs to benefit payments is just 0.6 percent for OASI and 2.3 percent for disability insurance. The Social Security Administration is able to keep administrative costs so low in part because of scale economies, and in part because the very act of private market competition leads to selling expenses that a unitary government agency providing a legally mandated service is spared; in addition, some of the cost of collecting OASDI premiums (taxes) falls on private agents (employers and the self-employed).
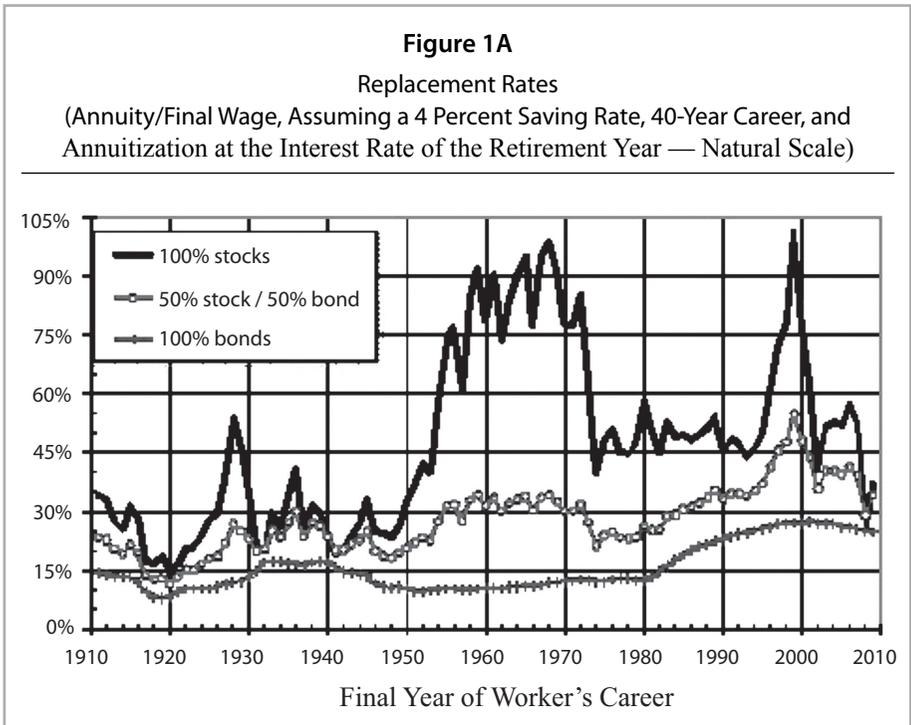
Annuity markets are notoriously inefficient because of asymmetric information. The best legally permitted underwriting is not as good a predictor of life expectancy as that implicit in individual demand for annuities. As a result, within any underwriting class, insurers must add charges to offset the risk that they will be "selected against." Such charges, in turn, discourage some would-be buyers from entering a mutually advantageous contract. In addition, analysis indicates that people tend to annuitize their wealth less than utility optimization implies.

While private markets cannot provide effective insurance against these classes of uncertain events, social insurance, in general, and Social Security, in particular, can. These risks include the risk of general price inflation, unemployment, family instability, and variations in interest rates and asset prices. In each case, social insurance spreads the cost of events across the population and over time. Inflation-indexed bonds, a recent innovation, even now provide no protection beyond about 30 years, well short of the time span relevant to retirement saving. Thus, there is no way through private markets to protect oneself adequately against the corrosive effects of unanticipated inflation on the purchasing power of retirement saving. Social Security indexes earnings histories and initial benefits for wage changes and indexes payable benefits for price inflation.

Nor is there any practical way of assuring oneself a given target income with any practicable private saving plan. The inescapable problem is that asset values and interest rates fluctuate in ways that are uninsurable. Fluctuations that are coincident with, or occur just before, one claims benefits of any kind — for retirement, disability, or survivorship — are particularly disruptive. As a result, the income stream that even a disciplined *private* saving rule produces is subject to irreducible uncertainty. Burtless (2011) has measured the dimensions of this uncertainty by showing the wide swings over time in the replacement rates — the ratio of benefits to earnings — generated by identical saving plans.[13] Figure 1 shows the ratio of the value of *initial* annuities to final earnings that would result from saving a fixed fraction of earnings (4 percent in

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[13] The underlying calculations are based on the assumptions (1) that cohort earnings grow an average of 1 percent a year, (2) that earnings of members of each cohort follow the typical life-cycle average earnings for U.S. males, (3) that accumulated assets are invested at age 65 in an annuity invested entirely in U.S. long-term government bonds, and are therefore priced based on the interest rate on such bonds prevailing at the time the annuity is purchased. The calculations ignore costs of funds management and annuitization.

Figure 1A

Replacement Rates
(Annuity/Final Wage, Assuming a 4 Percent Saving Rate, 40-Year Career, and
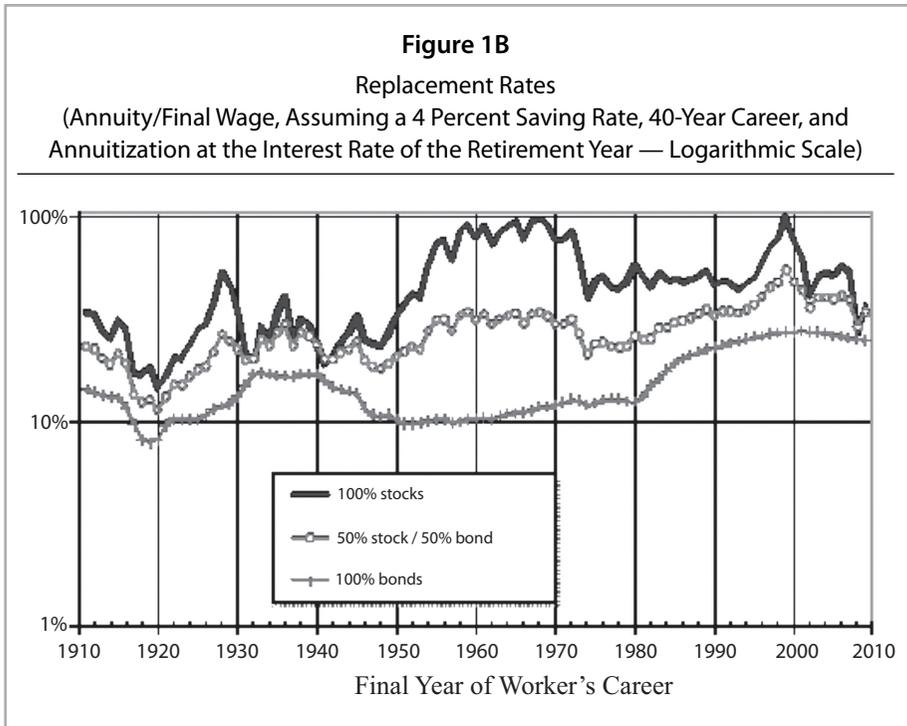Annuitization at the Interest Rate of the Retirement Year — Natural Scale)

the example) over 40 years. The ratio shows the resulting annuity divided by average earnings between the ages of 55 and 59.

Figures 1A and 1B, which differ only in the *y*-axis scale, with one numerical and the other logarithmic, reveal that:

- Stocks have typically out-performed bonds over most long blocks of time, but not in recent years;
- The variation over time in replacement rates across age cohorts is large — between 3 and 4 to 1 — regardless of investment strategy;
- The cohort variation occurs abruptly — the accumulation from an all-stock portfolio was 60 percent smaller for the 2002 cohort than for the 1999 cohort (and 75 percent *lower* for the 2008 cohort than for the 1999 cohort); and
- The lifetime internal rate of return of the all-bond portfolio was negative for all cohorts but three between 1967–1983.

Figures 1A and 1B conceal an additional risk from which Social Security benefits are largely immune — that from inflation *after* annuities are claimed. Inflation averaging

Figure 1B

Replacement Rates
(Annuity/Final Wage, Assuming a 4 Percent Saving Rate, 40-Year Career, and
Annuitization at the Interest Rate of the Retirement Year — Logarithmic Scale)

Final Year of Worker's Career

just 2 percent a year would reduce the replacement rates by one-third by age 85. Retirees could avoid this risk by accepting a smaller pension, based on inflation-indexed bonds. The exact difference would depend on the continually changing gap between the yields on taxable bonds and Treasury Inflation-Protected Securities (TIPS).

It is impossible for private savers reliably to achieve a given real income target simultaneously under all of the contingencies covered by social insurance Burtless (2010). Private savers would be able to assure themselves a given level of real consumption at a wide range of ages, if zero-coupon TIPS of sufficient and varying maturities were available. The zero-coupon feature is necessary to avoid reinvestment risk during the accumulation period and uncertainty regarding annuity prices at retirement age. The required maturities would be very long as young workers would need to be able to "buy" consumption bundles as much as five, six, or even seven decades into the future. Even with such securities, people would be unable to insure themselves against longevity risk — the uncertainty about when they will die and the attendant risks that they will either exhaust their assets before death or die with larger-than-intended estates. Nor would people be able to preserve the flexibility built into Social Security regarding the age at which they claim benefits, now as early as age 62 or as late as age 70.

These examples apply only to retirement benefits. To replicate the assured real-benefit feature of Social Security disability and survivor benefits with private insurance, it would be necessary for private insurers also to have access to zero-coupon TIPS of all relevant maturities. Even then, they would need to insure a sufficiently large population to reduce to an acceptable level the risk arising from the uncertain timing of claims. Social Security is not free of risk. Tax rates or benefit levels must be periodically adjusted to maintain trust fund balance. But risks are spread over people and time. Historically, Social Security benefit changes have been small and, as noted, gradual. Proposed benefit or tax changes would produce variations in Social Security's lifetime internal rate of return that are tiny compared to those indicated in the simulations shown in Figure 1.

IV. THE CURRENT SOCIAL SECURITY SYSTEM AND POSSIBLE CHANGES

Social Security has many other features not found commonly or at all in similar private pensions, disability insurance, and life insurance. Among the features are: the combination of linked benefits — old-age, and disability pensions and life-insurance (survivors benefits); a redistributive benefit formula; and indexation for inflation — of earnings histories, of the formula used for computing initial benefits, and of benefits currently being paid.

In considering possible replacements to, or changes in, Social Security, it is important not to lose sight of these features, some of which are difficult or impossible to replicate in private coverage.

A. Restoring Trust Fund Balance

Since its inception, Social Security has been managed through trust funds. Trust fund financing means that the pension system is self-contained, in a specific sense. Cumulative income of the trust fund from the time of its creation — earmarked taxes plus interest income on accumulated reserves — must always equal or exceed cumulative payments from the trust fund. Early cohorts paid little in taxes but received large benefits relative to taxes paid. They may be viewed as having borrowed large sums from later participants. Computations indicate that all age cohorts born before about 1935 received benefits worth more than the taxes they paid, computed using the discount rate applicable to assets held by Social Security (Leimer, 2007). The net transfer from those born after 1935 to those born before 1935 has been christened the "legacy debt" (Diamond and Orszag, 2004).

Although Social Security reserves are sizeable — $2.6 trillion at the end of 2010 — they are far short of the estimated $20.2 trillion that would be necessary, in addition to future taxes, to cover all benefits for current and past enrollees under current law (Schultz and Nickerson, 2010). This gap is an approximate measure of the size of the legacy debt. Replacing Social Security with individually owned private accounts would

not cancel this legacy debt; which would still have to be paid, one way or another, provided that accumulated benefit rights under current law are honored.

Although some age cohorts born after 1935 must pay taxes worth more than the benefits they receive, the affected cohorts may be in the infinite future. Put another way, pay-as-you-go trust fund financing does not require large reserves, just non-negative balances. Every cohort into the infinite future can continue to receive positive rates of return (Samuelson, 1958; Aaron, 1966). Thus, the minimum requirement for trust fund solvency is not to pay off the legacy debt — that can be carried forward indefinitely — but to set taxes and benefits at levels that keep trust fund balances positive. Measured over the next 75 years the projected gap between benefits and taxes leaves a gap with a present discounted value of $5.4 trillion or 0.6 percent of GDP (Schultz and Nickerson, 2010). By comparison, the value of tax cuts enacted during the presidency of President George W. Bush equal 2 percent of cumulative GDP over that period.

B. Level and Structure of Social Security Benefits

However the nation deals with Social Security's funding gap it is appropriate to reexamine whether the level and structure of Social Security benefits and financing should be modified.

1. Benefit Principles

The current benefit formula is based on four key principles:

- *Progressivity:* that benefits paid should rise with earnings, but less than proportionally;
- *Constant relative benefits:* that the average ratio of benefits to earnings should remain approximately constant over time as average earnings grow;
- *Age neutrality:* that the cumulative value of benefits for each worker should be approximately the same regardless of the age at which benefits are claimed; and
- *Stable purchasing power:* that the purchasing power of benefits should not be eroded by inflation.

The progressivity principle is reflected in the current benefit formula. It is a step-wise linear function, with benefits in 2011 set at 90 percent of average indexed earnings up to $9,132 per year, 32 percent of earnings from $9,132 to $55,032 per year, and 15 percent on earnings from $55,032 to $106,800 per year. The points at which the matching percentage changes are called " bend points." This formula produces replacement rates — the ratio of benefits to average earnings — ranging from 90 percent to 25 percent of

taxable earnings for a single retiree.[14] This formula is intended to assure basic income adequacy and to take limited account of the fact that people's sense of adequacy rises with their own incomes.

The "constant relative benefits" principle is reflected in the practices of indexing earnings histories for average wage growth and of computing initial benefits based on workers' *relative* earnings. Retirement benefits are based on the highest 35 years of average indexed earnings. This procedure comes close to averaging a worker's *relative* earnings standing over 35 years and then converting the resulting index into wage levels prevailing when the worker is near the age of eligibility.[15] The benefit formula is kept up to date by increasing the bend points and the ceiling on taxable earnings in proportion to the growth of earnings.

The "age neutrality" principle is implemented by computing benefits as of a certain age — the "full benefits age" — and then raising or lowering the benefits if workers claim them after or before the full-benefits age (Table 3). These adjustments mean that beneficiaries on average receive benefits with approximately the same discounted present value given average life expectancies, regardless of the age at which benefits start.[16]

As Steuerle (2010) has pointed out, this way of describing benefits is needlessly complicated. It would be simpler to describe benefits as an inflation-protected life annuity payable at age 62, but with an option over the next eight years — that is, up to age 70 — permitting people to exchange their benefit for an increased annuity starting the next year.

The "stable purchasing power" principle is implemented through adjustments in benefits actually being paid. Critics allege that the index currently used for these adjustments, the CPI-W, overstates inflation and should be modified.[17]

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[14] A maximum of $106,800 per year is now subject to the payroll tax, but no current retiree can have average earnings that high. The reason is that the average is based on the 35 years of highest earnings and even those workers who earned the maximum taxable earnings in every past year will have some years, even after indexation for earnings growth, when earnings were below the current maximum.

[15] This conversion takes place at age 60, although the age of initial eligibility is 62. After age 60, earnings are price indexed. However, earnings histories are routinely adjusted if earnings received after age 60 increase the 35 year average; in that event, benefits are recomputed and a supplementary check is sent.

[16] The word "approximately" deserves stress. The exact calculation depends on life expectancy, which changes over time. Furthermore, no single adjustment formula can provide the "right" answer for members of any group whose life expectancy differs materially from the average. In addition, because survivor benefits are tied to retirement pensions, the cumulative value of benefits also depends on the number and age of dependents.

[17] Some critics advocate replacing the CPI-W with a special index computed based on the consumption patterns of the elderly, the CPI-E. The CPI-E grew somewhat more 0.3 percentage points per year faster than the CPI-W between 1983–2007, principally because the CPI-E weights medical care more heavily than the CPI-W does, and the price of medical care has risen faster than that of most of other goods (Stewart, 2008; Goda, Shoven, and Slavov, 2011).

2. Benefit Levels

The ratio of U.S. Social Security benefits to cash earnings is modest compared to that in other developed nations and is falling. Table 2 presents three measures of pension generosity for selected members of the Organisation for Economic Co-operation and Development (OECD). The first indicator is the simple pension/earnings ratio for workers with average earnings, without regard to age of initial eligibility, average life expectancy, or tax treatment of pensions and earnings. On this measure, the U.S. replacement rate — 39 percent, or approximately two-thirds of the OECD average — ranks 16th among the 18 countries listed.[18]

The second measure shows the ratio, relative to earnings, of the cumulative present discounted value of the pension an average earner will receive calculated from the age of eligibility, based on life expectancy (which varies from country to country), less taxes paid on those pensions. The cumulative net value of Social Security for a U.S. worker with average earnings is six times those earnings. On this metric, the United States also ranks 16th.

The final measure shows the average across all workers of the cumulative present value of pensions received less taxes, expressed in U.S. dollars at official exchange rates. This measure differs from the preceding one in scale; in addition, it incorporates the effects on average benefits of the interaction between the shape of the earnings distribution and the degree to which the nation's pension formula varies pensions with earnings. Allowing for the imperfections of comparisons based on exchange rates, this measure provides a direct comparison of the average absolute value of benefits across nations. On this measure, the United States ranks 17th, with pension wealth fully 40 percent below the OECD average despite having one of the highest wage levels.

3. Benefit Trends

Social Security benefits have grown less rapidly than total earnings for two reasons. First, only cash earnings are taxed and used in determining benefits. Second, only cash earnings up to a ceiling, currently $106,800, are counted. That ceiling rises at the same rate as *average* total covered earnings, but earnings inequality has widened because earnings at the very top have risen sharply. As a result, the proportion of earnings above the ceiling has grown faster than the average. The proportion of cash earnings subject to tax has trended down since 1983 when the current formula was put in place, although the proportion of workers whose entire earnings are subject to tax has declined little (Table 4).[19]

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[18] I have excluded from the table the following members of the OECD: the Czech Republic, Greece, Hungary, Iceland, Ireland, Korea, Luxembourg, Mexico, Poland, Portugal, the Slovak Republic, and Turkey.

[19] In addition, cash earnings have risen less rapidly than total compensation because employer contributions for health insurance are not subject to the payroll tax and are not counted in computing benefits. In addition, salary reduction plans, other than 401k plans, are excluded from payroll taxation.

Table 2

Gross Replacement Rates and Net Pension Wealth
(Selected Nations, Average Earners, Ratio to Earnings)

| Country | Average Earners | | All Earners |
	Gross Replacement Rate	Net Pension Wealth	Average Pension Wealth (U.S. Dollars)
Netherlands	0.88	13.2	744,000
Spain	0.81	11.0	541,000
Austria	0.81	7.3	512,000
Denmark	0.80	8.4	744,000
Italy	0.68	7.9	607,000
Sweden	0.62	7.6	487,000
Norway	0.59	9.2	462,000
Switzerland	0.58	8.7	487,000
Finland	0.56	7.3	414000
France	0.53	8.8	426,000
Canada	0.44	7.3	355,000
Germany	0.43	6.3	318,000
Australia	0.42	7.3	363,000
Belgium	0.42	6.2	293,000
New Zealand	0.39	6.4	410,000
United States	0.39	6.0	264,000
Japan	0.34	5.5	266,000
United Kingdom	0.31	4.3	210,000
Weighted OECD average	0.59	8.6	442,000

Notes: Net pension wealth is a simple unweighted average of the values reported for men and for women. Average pension wealth is expressed in U.S. dollars at official exchange rates. Weighted OECD averages include countries excluded from the table (see footnote 23).
Source: OECD (2009).

Table 3

Benefits Payable If Claimed At Ages 62 to 70 and Above
as Percent of Benefits Payable at the "Full Benefits Age"

Workers Who Turn Age 62 in	Benefit Received at Age 62	Benefit Received at Age 65	Benefit Received at Age 66	Benefit Received at Age 67	Benefit Received at Age 70
1999[1]	80	100	106 ½	113	132 ½
2005–2016[1]	75	93 ⅔	100	108	132
2022 and after[1]	70	86 ⅔	93 ⅓	100	124

Note: (1) Between 1999–2005 and from 2016–2022, the full-benefit retirement age moves up from age 65 to 66 and then from age 66 to 67, two months each year, for workers turning age 62 in those intervals. As a result, the ratio of the pension available at each age shown declines linearly in that interval.

Second, legislation enacted in 1983 has reduced benefits relative to earnings in several ways. The largest reduction results from the increase in the age at which full benefits are paid — from 65 to 67.[20] This change is being implemented in two steps as shown in Table 3. When complete, it will have lowered replacement rates for most retirees by about 13 percent. Though often called an increase in the retirement age (or the "normal retirement age"), this change has nothing directly to do with when people may first claim benefits (age 62) or retire. In practice, the median age at which men actually leave the labor force has risen from age 62 in 1994 to age 65 in 2010.[21] Finally, the checks that most elderly and disabled beneficiaries receive have been reduced by the premium charged enrollees in Medicare part B. This premium, set at one-fourth of per enrollee program cost for most enrollees, rises with health care costs, which have been growing faster than earnings. Thus, what might be called "Social Security take-home pay" has lagged stated benefits.

V. MODIFYING SOCIAL SECURITY: AN ANNOTATED MENU

How to restore Social Security's long-term financial balance and whether to modify the level and structure of the program's benefits and financing are logically distinct issues. In practice, however, they are linked. Table 5 lays out a sampling of measures

[20] The 1983 legislation also significantly increased the "delayed-retirement credit" — the bonus paid to workers who wait to claim benefits until after the "full-benefits" age. As a result the drop in benefits for those claiming at age 70 is smaller than it is for those claiming at an earlier age.

[21] This information is based on an e-mail communication from Gary Burtless that reported tabulations based on the Current Population Survey.

Table 4

Proportion of Earnings Below the Taxable Maximum
and Percent of Workers Whose Entire Earnings are Taxed

Year	Percent of Total Earnings Subject to Tax	Percent of Workers Whose Entire Earnings Were Taxed
1940	92.4	96.6
1950	79.7	71.1
1960	78.1	72.0
1970	78.2	74.0
1980	88.9	86.6
1983	90.0	93.7
1985	88.9	93.5
1990	87.2	94.3
1995	85.8	94.2
2000	83.2	93.8
2005	84.1	93.9
2008	83.8	94.0

Source: Social Security Administration (2011).

put forward to close the projected, long-term funding gap in Social Security, to recon-figure the benefit structure or financing of the system, or both. Elected officials and analysts have suggested many other changes as well.[22] I have chosen the proposals listed in Table 5 not because they are all well considered, but because they have some current political prominence or highlight important considerations that, in my judgment, should guide legislation.

Table 5 omits a number of proposals that have drawn attention in the past, some of which have merit, but are not under active discussion currently. For example, many advocate the provision of homemaker credits to improve the benefits of parents, mostly women, who interrupt careers to care for their own young children. Others have suggested that the number of years of earnings counted in computing benefits should be increased. Others urge that the spouse's benefit — half that of the principal

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[22] Descriptions of many such proposals, together with estimates of their impact on revenues and expenditures averaged over 75 years and in the 75th year may be found at "Social Security Online, Actuarial Publica-tions, Summary of Provisions That Would Change the Social Security Program." Social Security Online, http://www.ssa.gov/oact/solvency/provisions/summary.html.

Table 5

Illustrative Modifications in Social Security Benefits and Financing

	Balance Over 75 years (As Percentage of Payroll)	Balance in 75th Year (As Percentage of Payroll)
Current law — cost[1]	13.09	17.43
Current law — deficit	−1.92	−4.12
Measures to restore financial balance[2]		
1. 13 ⅓ percent benefit cut starting immediately for all those newly eligible for benefits (or raise the "normal" retirement age immediately by 2 years)	1.62	2.24
2. 2 percentage point increase in payroll tax rate, starting immediately	1.90	1.99
Measures to change benefit structure[2]		
3. Reduce benefits for higher earners only	0.60–1.30	1.57–3.64
4. Increase minimum benefit for career low wage workers[3]	−0.19	−0.14
5. Base COLA adjustment on "chained" CPI (W) rather than CPI (W)	0.49	0.70
6. Adjust benefits for CPI (W) less ½ or 1 percentage points	0.81–1.55	1.15–2.19
7. Increase benefits for the very old[3]	−0.13	−0.18
8. Adjust payable benefits for wage growth rather than price inflation[4]	−2.00	−2.80
9. Cover newly hired state and local workers[3]	0.16	0
10. Raise age of initial eligibility from 62 to 65	−0.03	−0.37
11. Index benefit formula based on prices rather than on wages	2.28	7.16
Measures to change financial structure[2]		
12. Gradually raise taxable wage ceiling to cover more earnings[3]	0.60	0.68
13. Treat employer health insurance premiums as taxable earnings[3]	0.93	1.06
14. Tax all salary reduction plans like 401k plans[3]	0.22	0.13

Sources:
(1) Board of Trustees (2010).
(2) Except as noted, estimates of program changes are based on Office of the Chief Actuary (2009).
(3) Office of the Chief Actuary (2010).
(4) Author's estimate.

earner — which dates from a time when one-earner couples were the norm, should be cut; the savings could be used either to close the projected funding gap or to increase other benefits. Others, noting the high poverty rates among widows and widowers, urge that surviving spouses receive a larger proportion of the couple's combined benefit.

A. Restoring Financial Balance

If the sole goal of reforming Social Security were to restore financial balance, the only question would be how much to raise earmarked revenues and how much to cut benefits. This decision would hinge on judgments about the adequacy of current benefits and the burdensomeness of earmarked taxes, and on the competing demands for other public spending and the means to pay for them.

As indicated in the first two policy options listed in Table 5, an immediate, across-the-board cut in benefits of roughly 15 percent or an immediate increase in payroll taxes of roughly 2 percentage points, or some combination of the two would suffice to restore balance *on the average over the next 75 years*. Because raising the "normal retirement age" is identical to an across-the-board cut in benefits, Table 5 contains no separate mention of it.

Even if the current benefit and financial architecture of the program were regarded as ideal, simply closing the *average* funding gap over 75 years by any combination of these policies would have serious shortcomings. First, like the 1983 legislation, such changes would not, by themselves, solve the "terminal year" problem illustrated in Table 1 and would, like the 1983 amendments, virtually guarantee that another financial gap would emerge in just a few years. The fact that both changes close just about half of the gap in the 75th year reveals the problem. Both policies would result in the build-up of a large trust fund that would then offset deficits in the later years. While Congress has been willing to introduce tax increases with little delay, it has never been willing to cut benefits by so large an amount for retirees or for those about to retire. If the benefit cuts were phased in, larger cuts would ultimately be necessary to hold down average costs; the terminal-year problem would be correspondingly smaller.

In the limit, Congress could finance Social Security on a strict pay-as-you-go basis with revenues just sufficient to cover current outlays. Or, to the extent that Trust Funds have positive balances, revenues could remain permanently below outlays by the amount of interest earnings on trust fund balances.

B. Changing the Benefit Structure

Social Security has always been justified in part as a way to overcome a widely recognized failure on the part of many people to anticipate the income they will want in retirement or to rationally anticipate other risks and save adequately for or insure against them. If that failure were uniformly or randomly distributed in the population and correcting it were the program's only function, benefits could be strictly proportional

to deposits plus accumulated interest. From its inception, however, Social Security was designed to do more. Congress structured the benefit formula to provide larger benefits to people who confronted certain contingencies or whose economic circumstances were deemed to justify additional payments — hence the name *social insurance.* It is natural and proper to reconsider the form of such redistribution as the circumstances, problems, or values that gave rise to those policies change. Supporters of policies listed as items 3–14 in Table 5 claim that changes are justified on that basis.

1. Vertical Redistribution

Although the Social Security benefit formula provides annual benefits that are larger relative to earnings for low earners, high earners live longer on average than do low earners. Various studies have found that because of this difference in longevity, the present discounted life-time value of old-age pension benefits for high earners is as high as or even greater than those for low earners.[23] In contrast, disability and mortality rates are relatively higher for low earners, so that Survivors and Disability benefits accrue disproportionately to low earners. Furthermore, all three programs have insurance aspects, omitted from calculations of present value, the value of which is not necessarily proportional to the number of dollars received. Thus, the distribution of dollar payments to different economic groups misstates the distribution of the full value of benefits.

Two things are clear, however: (1) in the years since the current benefit formula was set in place, life-expectancy has risen more rapidly among high than among low earners; and (2) earnings inequality has increased. The gap between life expectancies of those in the top and bottom halves of the earnings distribution rose from 1.9 years for those who turned age 65 in 1982 to 5.3 years for those who turned age 65 in 2006 (Waldron, 2007). As longevity increases, total benefits paid over a lifetime also increase. And these increases have accrued disproportionately to higher earners. In fact, the addition to the life-time value of benefits from the increase in longevity for the top half of earners has more than offset the statutory reductions enacted in 1983, but has not come close to doing so for low earners. These longevity trends have the effect of eroding the intent of Congress to provide higher benefits in relation to taxes paid for relatively low earners.

The benefit changes listed as items 3 and 4 of Table 5 would increase the redistribution in Social Security in favor of low earners, but in very different ways. The proposals to cut benefits for "higher" earners (item 3) would lower the already-low replacement rates for high earners. Such cuts would have at least two effects: they would narrow the projected funding gap, and they would offset the added lifetime benefits resulting

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[23] For early studies of this issue, see Okonkwo (1973) and Aaron and Spevak (1977). For a recent and comprehensive survey of the literature, see Congressional Budget Office (2006), which surveys studies of the distributional effects of old-age insurance alone and of the entire system, including survivors and disability benefits.

from increased longevity. However, some versions of the "cut at the top" proposals would cut benefits far down the earnings distribution where longevity increases have been quite small.

Under current law, Social Security provides a special minimum benefit to workers with extended records of low earnings. This benefit goes primarily to workers who do not qualify for spouse's benefits which are equal to half the earnings of a higher-earning spouse or whose spouses also have low earnings. Several proposals would increase this minimum benefit enough to guarantee career low earners a benefit equal to at least the official poverty threshold for a single person (item 4 in Table 5).

2. Variation in Benefits by Age

Since 1972 benefits currently being paid have been indexed to hold purchasing power constant. The chosen index, the CPI-W, was later found to exceed an alternative index that takes into account the capacity of consumers to offset the effects of rising prices by shifting consumption to goods whose prices have not risen so much. Improvements in the CPI-W have reduced, but not eliminated, this gap. The Social Security actuaries estimate that the CPI-W still exceeds an index that allows for such substitution by about 0.3 percentage points a year. The proposal listed as item 5 in Table 5 is intended to end this over-adjustment.

One prominent economist has gone even further, proposing that benefits not be adjusted fully for inflation, as shown in item 6 in Table 5 (Feldstein, 1998). Less-than-complete price indexing would certainly lower the projected funding gap. What other objective would be served by gradually lowering benefits as people age is obscure. Nor would the cuts be small — the cut for a 95-year old retiree who had been on the rolls since age 62 from boosting benefits 1 percentage point less than the inflation rate would be 28 percent.

Indeed, a reasonable case can be made for gradually *increasing* benefits for people who have been on the rolls for some time. First, such increases would extend to the retired, disabled, and survivors some part of the gradually rising living standards enjoyed by active workers as productivity increases. Second, the very old or the long-term disabled are increasingly likely to have exhausted other savings. Third, they are also increasingly likely to be widows or widowers. The death of one member of a couple causes Social Security benefits to fall by anywhere from one-third to one-half and often results in the loss of other income. Thus, poverty rates increase with age, despite the inverse relationship between mortality rates and income.

These facts have led to a variety of proposals to raise benefits in some fashion after they have initially been claimed. Under one approach, benefits would be raised by some flat percentage or dollar amount at age 85 (item 7 in Table 5) or some other advanced age. Still another would increase benefits gradually after the initial claim — for example, by switching from price to wage indexing (item 8 in Table 5).

3. Coverage

When first enacted, Social Security covered roughly two-thirds of the U.S. workforce. Congress gradually mandated coverage for most workers but granted state legislatures the option of enrolling state and local government employees.[24] Most states enrolled, but about one-fourth of state employees remain outside the program. This exception creates a problem the solution to which produces considerable administrative complexity. The problem arises because even those state and local government employees who are at a given time outside the system usually acquire eligibility through employment in covered employment at some point in their working lives. Because they have no Social Security earnings in most years, however, the Social Security benefit formula, which averages earnings over 35 years for computing retirement benefits, regards them as having low earnings. But for special administrative provisions, these workers would be awarded high replacement rates intended for career low earners. A complex adjustment corrects most of this problem. In addition, state employees shoulder none of the cost of servicing the legacy debt while they are working outside the system. Furthermore, after leaving state employment, they typically will be ineligible for disability coverage for some time, as eligibility for disability insurance requires work in employment covered by Social Security in at least five of the last 10 years. For these reasons, extending Social Security coverage to all newly hired state and local employees is long overdue (item 9 in Table 5).

4. Raise the Age of Initial Eligibility

Because the benefit paid on any given earnings history is adjusted so that, on average, the present discounted value of life-time benefits is unaffected by the age when it is claimed, increasing the age of initial eligibility affects the average long-term Social Security balance negligibly (item 10 in Table 5). Early savings from reduced payments would be offset in part immediately by increased claims for disability insurance and more or less completely later on by increased retirement benefits. As a result, the long-term balance in Social Security would change little.

The impact on the overall budget would be much larger, however. Labor-force participation among men age 60 and above has recently increased.[25] Delaying the age of initial eligibility would likely intensify this trend, boosting potential GDP, potential employment, earnings and profits, and taxes on those added incomes. It could also lower some government spending on benefits for retirees.

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[24] State enrollment was voluntary, but once in the program, states were not allowed to withdraw.

[25] Among men ages 60 to 64, labor force participation rates have risen from 52.8 percent in 1994 to 60.0 percent in 2010; among men ages 65 to 69, from 24.2 percent in 1985 to 36.5 to percent in 2010; and among men ages 70 to 74, from 10.3 percent in 1993 to 14.7 percent in 2010 (Burtless, 2011).

5. Adjust the Benefit Formula for Prices Rather than Wages

Since 1977, the Social Security benefit formula has automatically maintained the ratio of benefits to earnings for successive cohorts of workers as earnings rise. Because the benefit formula is progressive, this policy implies that, over time, workers with given *absolute* real earnings receive increasing replacement rates. The key to achieving this goal is the policy of increasing the "bend points" along with the growth in earnings.

Some analysts have urged that the bend points be adjusted only for inflation. In any given year, the effect of such a shift is small, as the gap between price inflation and earnings growth is typically small. Over time, however, a shift from wage to price indexing of the benefit formula would transform Social Security in two ways. First, and most obviously, benefits would shrink relative to earnings. Second, progressivity of the benefit formula would erode. Replacement rates currently range from 52.5 percent for low earners, to 38.9 percent for medium earners, and 24.6 percent for maximum earners.[26] Under price indexing, replacement rates for all groups would fall steadily and asymptotically approach 24.6 percent, as a steadily falling share of earnings would fall in the ranges with 90 percent and 32 percent replacement rates.

Given these ratios it is not surprising that the impact on program costs of a shift to price indexing would be enormous (item 10 in Table 5). This change would not just close the projected long-term deficit, it would produce a large and growing surplus.

C. Changes in Financial Structure

Throughout Social Security's history, payroll taxes have been collected on the same earnings base used to compute benefits. This linkage serves a political function — helping to enforce the perception among those covered by the program that they earn benefits by paying taxes on the same earnings base that determines their benefits. In deciding how far up the earnings distribution this linkage extends, Congress also decides how much income Social Security will provide to those whom the system covers. Additional questions concern what forms of compensation should be included in computing benefits and be subject to tax — only cash earnings or other remuneration such as deferred compensation or in-kind fringe benefits. Because the compensation mix varies with pay levels, the answer to this question has significant distributional effects as well.

1. Raising the Wage Base

In 1937, all earnings of 97 percent of workers and 92 percent of the earnings of those workers were covered by Social Security and subject to tax (Mulvey, 2010). Since then,

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[26] The data refer to 2010. For these calculations, low, medium, and maximum earners have average earnings of $19,388, $43,084, and $106,800 respectively (Goss, 2011).

both proportions have varied widely. In 1983, the year in which Congress enacted the last major changes in Social Security, the wage base covered 90 percent of earnings and all cash earnings of 94 percent of covered workers. The fraction of workers whose earnings are fully taxed has changed little since then, but increases in very high earnings have reduced the proportion of earnings subject to tax to roughly 84 percent.

A decision to raise the wage base improves the long-term financial balance if the bend points in the benefit formula are left unchanged. The additional covered earnings would generate revenue immediately. Benefits would rise with a lag and proportionately less than the added revenue because earnings would accrue to workers subject at the margin to the 15 percent replacement rate. These gains to the Trust Funds would be even larger if, as some have proposed, the added taxable earnings are not used in computing benefits. The proposal most frequently advanced would gradually return the proportion of earnings subject to tax to 90 percent (item 12 in Table 5). This change would close nearly one-third of the average funding gap measured over 75 years, but a much smaller share of the gap in the 75th year.

2. Broaden the Definition of Covered Compensation

When Social Security was established, most workers received all or nearly all of their compensation as cash wages. Few industries offered private pensions. Few people had health insurance; most who did bought it individually. Tax-sheltered individual savings plans did not exist. Limiting the tax base to cash wages was almost the same as covering all worker compensation. With the rise (and then the fall) of employer-sponsored defined benefit pensions and, more importantly, the spread and rising cost of health insurance and other fringe benefits, the difference between wages subject to the payroll tax and total compensation has widened. Employer as well as individual contributions to 401(k) plans are subject to payroll tax, but other contributions to tax sheltered pension plans and employer-financed health insurance are not.

Analysts agree that excluding employer-financed health insurance from payroll (as well as from income) tax is poor health care policy (Gruber, 2011).[27] These exclusions reduce the price of employer-financed health insurance relative to the price of other consumer goods, thereby distorting personal consumption choices. Excluding employer-financed health insurance from individual income tax is also poor tax policy, as a well designed personal tax system, whether based on income or consumption, would include employer-provided health insurance in the tax base.

The case for including employer-financed health insurance in the payroll tax base is less clear. Social Security provides cash pensions to replace money earnings. Health benefits for the elderly and disabled come through a distinct program, Medicare, and

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[27] The Affordable Care Act slightly and indirectly narrows the income tax exclusion. In 2018 it will impose an excise tax of 40 percent on employer-financed premiums for plans on which annual premiums exceed $8,500 for individuals and $23,000 in 2013 dollars. These amounts would be indexed by the consumer price index until 2018 when the tax would first be levied.

to a lesser extent Medicaid. Both are financed separately. Still, broadening the payroll tax base would generate increased revenues and, under the policy of basing pensions on the same base used for taxation, future benefits as well (item 13 in Table 5). The same holds for salary reduction plans other than 401(k) plans (item 14 in Table 5). Extending the tax base to include both forms of worker compensation would close nearly half of the projected gap in financing averaged over the next 75 years and nearly one-quarter of the gap in the 75th year.

VI. CONCLUSION

From small beginnings, Social Security has become the largest domestic program of the federal government, with fiscal year 2011 outlays of roughly $750 billion. It is the largest source of income for the retired and disabled. Although Congress has changed the program in important ways since its enactment — extending coverage to all workers, adding protection against disability, introducing automatic adjustments in benefits and the tax base for wages and prices, providing flexibility on the ages at which retirement benefits can be claimed, and numerous other changes, the basic program format — earnings-linked annuities, computed under a progressive benefit formula financed by a proportional tax levied on the same earnings used to compute benefits — has remained in force.

Meanwhile, the nation and the work force served by that system have been transformed. Private pensions now cover about half of all workers. Similar proportions of men and women now work in the paid labor force. Incomes have risen dramatically, providing an increasing proportion of workers with discretionary income. Educational levels have risen. Financial instruments have proliferated.

Nonetheless, the reasons for maintaining a social insurance program that provides assured basic income have, if anything, grown stronger. Income volatility has increased. Asset volatility has increased. Defined benefit private pensions have given way to defined contribution pensions, shifting risk from employers to individuals. Job tenure has shortened. The risks against which Social Security provides protection have increased. Social Security replacement rates have fallen.

The system faces a projected funding gap that merits early attention. It is moderate in size and can be closed with modest tax increases or benefit reductions. Replacement rates have fallen, and Social Security "take-home pay" has fallen even more. Benefits are small by international standards. Furthermore, even if benefit cuts were considered desirable, they are not likely to do much in a timely way to ameliorate overall budget deficits. For all of these reasons, most of the projected funding gap should be closed principally by increasing revenues, rather than lowering benefits.

In addition, some modifications in the structure of benefits and financing are in order. Increases in longevity suggest that measures should be taken to encourage later retirement, a shift that seems already to be under way. The incidence of increased longevity suggests that some shifts in the shape of the benefit structure may be desirable. Increas-

ing longevity also heightens the importance of assuring pension adequacy among the very old. The increase in labor force participation by women suggests that changes in the treatment of two- versus one-earner couples would be desirable, when both partners are still alive and after one has died.

Various analysts have advanced proposals for replacing Social Security in whole or in part with defined contribution, personally-owned accounts, with or without linked, individually-purchased disability and life (survivors) insurance. Any such shift would entail enormous disruption, political and economic. No such change can erase the legacy debt, which would have to be paid off in some way if the system were replaced, but can be carried forward if it is not. All would shift risk to individuals that is now pooled across people and over time. Most would not deal at all or as well as Social Security does with the abiding risks of inflation and financial market volatility, or with the limited rationality and computational skills of individuals, and most would incur significantly higher administrative costs. Social Security continues to do quite well what it was designed to do — assure basic income to the elderly, disabled, and survivors, providing a foundation on which personal decisions regarding saving and the purchase of additional insurance can be based. Toward that end, it is desirable in the near future to close the projected funding gap and, to the extent that competing fiscal demands allow, strengthen protections for workers with low and moderate incomes.

ACKNOWLEDGEMENTS

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