

Federal Reserve Bank of Cleveland

Social Security's Treatment of Postwar Generations

by Jagadeesh Gokhale

(Complete text of testimony to be submitted to the Senate Budget Committee, Washington, D.C., January 19, 1999.)

Thank you for inviting me to testify before your Committee. I feel very honored by this opportunity.

■ Social Security's Long-Term Financial Shortfall

The Social Security Administration's (SSA's) official projections indicate that paying benefits under current rules during the next 75 years will require a payroll tax hike of 2.2 percentage points.¹ The tax hike must be immediate, and taxes must be maintained at that higher level throughout the 75-year horizon.

Although a gap of 2.2 percentage points seems small, it is the result of looking only 75 years ahead. It ignores the deficits that will accrue in year 76 and later, and makes Social Security's finances appear much healthier than they actually are. Although 75 years seems to be a long time, it is actually quite short for a program like Social Security, which needs to be sustained far beyond that time horizon and is capable of influencing the economic opportunities of several generations to come. Extending the projections through the indefinite future reveals a much bigger financial shortfall. SSA's actuaries estimate that under intermediate economic and demographic assumptions, fully eliminating the shortfall will require a payroll tax rate hike of 4.7 percentage

points. This represents a 38 percent increase over the current Old Age, Survivors, and Disability Insurance (OASDI) program's tax rate of 12.4 percent.² Even this may be an underestimate because, relative to recent experience, SSA's intermediate assumptions incorporate conservative projections about gains in longevity and optimistic assumptions about growth in labor productivity.

An obvious alternative to hiking payroll taxes is reducing benefit levels. However, the reduction will have to be equally dramatic—about 25 percent—and will have to be kept in place indefinitely. As described below, although either alternative would resolve Social Security's funding shortfall, each differs in the burden that it imposes on different generations. Furthermore, any delay in resolving the funding shortfall is likely to escalate the sizes of future required tax hikes or benefit cuts.

■ Social Security's Treatment of Postwar Americans

The tax treatment meted out by the Old Age and Survivors Insurance (OASI) program differs significantly across demographically distinct groups of individuals.³ My colleagues and I have analyzed the impact of OASI on postwar demographic groups distinguished by age, sex, race, education, and earnings.⁴ I briefly describe our findings based on two indicators: The *lifetime net OASI tax rate* and the *OASI rate of return*.

Social Security's long-term funding gap is wider than what is officially reported or commonly perceived. Furthermore, the program's tax treatment of distinct groups varies considerably among postwar generations: Women, whites, and the college educated have lower lifetime net tax rates than do men, non-whites, and those without a college education. Among income groups, the middle class faces the highest lifetime net tax rate. Social Security also provides much lower, riskier rates of return on past contributions than alternative investment opportunities could yield.

**TABLE 1: Lifetime Net OASI Tax Rates (percent):
Current Tax and Benefit Rules**

Birth year	Lifetime earnings			All
	Lowest 20 percent	Middle 20 percent	Highest 20 percent	
1945–54	–5.7	5.7	5.0	5.2
1955–64	–4.4	5.8	5.0	5.2
1965–74	–3.5	5.9	5.2	5.5
1975–84	–4.0	5.7	5.2	5.4
1985–94	–3.5	5.5	5.1	5.2
1995–00	–2.8	5.6	5.3	5.3

SOURCE: Based on Caldwell et al. (1998); see footnote 3.

Table 1 suggests the following conclusions:

Under current rules,

- Overall, OASI imposes a pure tax of just over 5 percent of lifetime earnings.
- Earlier-born generations are not treated differently from later-born ones.
- Low earners face negative LNTRs due to the progressive benefit formula.
- Middle earners pay the highest LNTRs—close to 6 percent of lifetime earnings.
- Highest earners face lower-than-average LNTRs due to a cap on taxable earnings.

**TABLE 2: Lifetime Net OASI Tax Rates (percent):
Alternative OASI Policies**

Birth year	Current rules	38 percent tax increase		25 percent benefit cut	
	LNTR	LNTR	Percent change	LNTR	Percent change
1945–54	5.2	5.6	8.5	5.8	13.1
1955–64	5.2	6.1	18.0	5.8	12.1
1965–74	5.5	7.3	33.5	6.1	11.8
1975–84	5.4	8.3	53.1	6.1	12.3
1985–94	5.2	8.2	57.5	5.9	13.1
1995–00	5.3	8.4	57.3	6.0	13.0

SOURCE: Based on Caldwell et al. (1998); see footnote 3.

Table 2 suggests the following conclusions:

Under a 38 percent tax-rate hike (from 10.6 percent to 14.6 percent) beginning in 1999,

- Older cohorts are less affected—most of their tax-paying years are behind them.
- Younger cohorts' LNTRs exceed 8 percent, an increase of over 50 percent.

Under a 25 percent cut in benefit levels beginning in 1999,

- LNTRs of all postwar cohorts rise to about 6 percent—by just over 10 percent.
- The tax treatment of all postwar generations under OASI remains similar.

Lifetime Net OASI Tax Rate (LNTR)

This indicator shows the number of cents paid as pure OASI taxes per dollar earned over an individual's lifetime.⁵ To show the implications of current tax and benefit rules, we calculate LNTRs, assuming that these rules will prevail during the lifetimes of postwar cohorts (those born after 1945).

How can we gauge the significance of a 5.2 percent LNTR? Those shown in table 1 imply substantial net-tax burdens. For today's 50-year-olds, for example, participating in the OASI program is equivalent to making a one-time payment to the government of \$200,000, on average, at age 65. For today's 18-year-olds, however, the corresponding figure is \$270,000.

Because current rules are not sustainable, however, net tax burdens will be even heavier under the alternatives of increasing OASI taxes by 38 percent (from 10.6

percent to 14.6 percent of taxable payroll) or reducing OASI benefit levels by 25 percent. Table 2 shows how the LNTRs of table 1 would change if either of these policy alternatives is implemented in 1999. For ease in making comparisons, the last column in table 1 is displayed as the first column in table 2.

The LNTRs shown in table 2 are averages across all earning levels. Under the benefit-cut policy, middle earners' LNTRs would increase to almost 8 percent. Under the tax-hike policy, they would exceed 10 percent for the youngest cohorts.

The tax-hike policy makes participating in OASI only a little more expensive for today's 50-year-olds: It is now equivalent to a one-time payment to the government of \$217,000, on average, upon reaching age 65. However, for 18-year-olds, OASI becomes hugely more expensive—equivalent to surrendering \$414,000, on average, at age 65. Most of the tax hike falls on younger cohorts. The corresponding numbers for the benefit-cut policy are \$226,000 for today's 50-year-olds and \$304,000 for today's 18-year-olds.

This analysis does not inform us about the LNTRs of those born prior to 1945—today's retirees and pre-retirees. These generations' payroll contributions were made when OASI tax rates were very low. Because they receive benefits under current rules, it would be reasonable to conjecture that their LNTRs are much lower than those of postwar generations. Of course, an increase in payroll taxes would have little effect on current retirees' LNTRs. A 25 percent benefit cut, however, is likely to increase their LNTRs substantially.

OASI Tax Treatment by Sex, Race, and Education

Our calculations show that men face higher LNTRs than women, whereas whites and the college educated face lower LNTRs relative to non-whites and the non-college educated, respectively. The better net-tax treatment of women compared to men is partly the result of the progressive benefit formula—women tend to have lower earnings than

TABLE 3: Rates of Return (percent): Current Rules and Alternative OASI Policies

Birth Year	Current rules	38 percent tax increase		25 percent benefit cut	
	RR	RR	Percent change	RR	Percent change
1945–54	1.91	1.64	–14.6	1.06	–44.7
1955–64	1.77	1.27	–28.2	0.92	–47.9
1965–74	1.77	1.05	–40.7	0.94	–47.0
1975–84	1.86	0.97	–48.0	1.03	–44.5
1985–94	1.98	1.06	–46.5	1.15	–42.0
1995–00	1.87	0.92	–50.9	1.01	–46.1

SOURCE: Based on Caldwell et al. (1998); see footnote 3.

Table 3 suggests the following conclusions:

- Under current rules, the real rate of return on contributions is less than 2 percent.
- Under current rules, younger cohorts receive similar rates of return as older ones.
- A 38 percent tax hike reduces the RRs of later-born generations by more.
- A 25 percent benefit cut reduces uniformly the RRs of all postwar generations.

men on average. It is also due to spousal and survivor benefits that women, being longer lived, predominantly receive. Moreover, these benefits are based on their spouses' higher earnings. This reflects the intent of the OASI program of insuring retirees against dependency and widowhood. However, such insurance provision entails a cost: The redistribution of income that it requires breaks the link between work and its rewards and may distort people's decisions regarding labor-force participation.

The better treatment of whites and the college educated occurs due to OASI's regressive tax schedule as well as due to their greater longevity compared to non-whites and the non-college educated. This may also be viewed as insurance provision against outliving resources for groups with greater longevity. However, this insurance provision, again, has negative implications for national saving: It makes individuals less sensitive to the possibility of outliving their resources and induces them to consume more.

OASI Rate of Return (RR)

Participating in the OASI program involves making payroll contributions while working in exchange for the promise of retirement benefits when old and of survivor support for dependents after death. From a worker's perspective, the stream of benefits after retirement and death may be viewed as a return on the "investment" of payroll contributions. The indicator, RR, shows the yield (in percent) accruing by way of benefits on the initial OASI contributions for different postwar cohorts.⁶ Table 3 lists RRs under a) current tax and benefit rules; b) a 38 percent OASI tax increase; and, alternatively, c) a 25 percent benefit cut.

In addition to being very low, OASI's rates of return are risky: When and to what extent taxes will be increased, or benefits reduced, are unknown to current participants. OASI's returns are lower than those obtainable on 10-year Treasury inflation-protection securities (TIPS). Today, these securities yield real returns greater than 3.5 percent and, in addition, are considered to be almost perfectly safe. Hence, participation in OASI, whether under current rules or under the two policy alternatives discussed here, imposes a significant cost on postwar generations in terms of the forgone opportunity to invest OASI contributions in higher-yielding assets.

How Well Does OASI Pool Earnings Risk?

OASI's progressive benefit formula redistributes income from high- to low-earning individuals. This redistribution can be viewed as a method of pooling the risk of realizing low lifetime earnings across the population. However, OASI's regressive tax schedule limits the amount of such risk pooling. Indeed, because the well-to-do enjoy greater longevity, OASI may, in some cases, redistribute from poorer to richer households, thus exacerbating earnings risk. An indicator of the degree to which OASI helps us in pooling earnings risk is the amount by which it reduces the variability of income across individuals. Our calculations suggest that OASI lowers lifetime income variability by only 6 percent—a small but not negligible amount.

Using the Budget Surplus for "Saving" Social Security

Although many policymakers and economists state that projected budget surpluses could be used for "saving" Social Security, most neglect to mention that much, if not all, of the surpluses emerge because of the Social Security program itself. That being the case, the suggestion that budget surpluses represent monies in addition to those already earmarked for paying future Social Security benefits is incorrect. The aforementioned estimate of Social Security's long-term funding shortfall already incorporates the projected surpluses. Hence, allusions to the possibility of using these surpluses for restoring Social Security's long-term solvency, in effect, count those surpluses twice.

The perception of a surplus is a product of thinking in terms of annual cash flows. If, however, we adopt a long-term perspective (over the indefinite future), no surplus really exists because in present value, benefit outlays far surpass the payroll tax revenues that will be collected under current rules. As a consequence, the benefits that current adult generations stand to receive are much larger than the payroll taxes that they will pay. Social Security's net liability to current adult generations has been variously estimated to be between \$7 trillion to \$10 trillion. If those alive today do not pay more to

bridge the gap, future generations will have to bear the financial burden. Essentially, maintaining the current policy stance redistributes resources from future toward living generations.

As living generations perceive themselves to be richer because of such redistribution, they adjust upward their consumption and reduce their labor-force participation. Greater consumption, in turn, implies lower national saving and a lower capital base. Lower labor-force participation, as evidenced by the increasing trend toward earlier retirement, implies a withdrawal of labor resources from productive use. In a recent study, my colleagues and I estimate that the redistribution of resources from future toward living generations due to the net generosity of Social Security and Medicare to those born before 1945 may account for roughly 50 percent of the decline in U.S. national saving since the 1960s.⁷

■ A Long-Term Perspective on Fiscal Policy as a Whole

An analysis of the government's entire fiscal policy under a long-term perspective suggests an even greater fiscal shortfall. In a recent update of U.S. generational accounts, my colleagues at the Congressional Budget Office and I estimate that U.S. fiscal policy is seriously out of balance.⁸ That is, if those alive today (the base year for the study was 1995) continue to be treated under current fiscal policy, future generations would, on average, have to pay significantly higher lifetime net taxes. Such a generationally unbalanced fiscal policy is also unsustainable: It indicates that taxes will have to be increased in the future to finance scheduled government purchases, or those purchases will have to be retrenched.

As is the case of Social Security, a generationally balanced fiscal policy can be achieved via tax increases, cuts in transfers, or reductions in government purchases. For example, if implemented immediately and kept in place permanently, a 20.4 percent income tax hike would be required to restore genera-

tional balance in fiscal policy. That is, average income tax rates would have to rise from about 13.1 percent today (as of 1995) to 15.8 percent. Alternatively, federal purchases would have to be reduced by 39 percent. Our calculations show that the required changes will become even bigger if policy changes are postponed for a few years.

It is possible to compare the size of Social Security's long-term shortfall with that in the entire budget. Restoring Social Security's long-term solvency requires immediately and permanently raising OASDI taxes by 4.7 percentage points, (from 12.4 percent to 17.1 percent of taxable payroll—an increase of 38 percent). However, restoring long-term sustainability in the entire government budget requires those same taxes to be increased by 6.9 percentage points (from 12.4 percent to 19.3 percent of taxable payroll—an increase of 56 percent).⁹

■ Summary

Because SSA adopts a limited 75-year horizon in projecting Social Security's finances, the officially recognized and commonly acknowledged size of its long-term funding shortfall appears less than half as large as it is in truth. Under the same economic and demographic assumptions, deficits accruing in year 76 and beyond imply that permanently restoring the program to solvency will require a 38 percent increase in payroll taxes. Alternatively, benefits would have to be cut by about 25 percent.

Under OASI's current rules, those born in the postwar period may expect to pay more than 5 percent of their lifetime earnings as a pure tax. This rate will increase to 6 percent or more if benefits are cut by 25 percent. Under a 38 percent tax hike, the rate would be even higher—8 percent—for the youngest cohorts. Under either policy, middle earners would be hit the hardest.

The OASI program redistributes income from men toward women. However, because of its regressive tax schedule and because those with more resources

tend to live longer, lower net tax burdens are imposed on some relatively well-to-do groups (like whites and the college-educated) compared to their counterparts. Although differences in the tax treatment of different groups may be viewed as a consequence of insurance provision against dependency, widowhood, and poverty during old age, they may exact a cost by altering people's behavior in ways that ultimately reduce national saving and labor supply.

The real rates of return obtainable via OASI under current rules fall far short of those obtainable on alternative, highly safe investments. The gap in these rates of return will become even wider if taxes are increased or benefits are cut to fully resolve OASI's long-term funding shortfall. The program reduces the variability of income across postwar generations by about 6 percent. As such, it seems to help only a little in pooling earnings risk across the population.

Most, if not all, of the budget surplus projected through 2008 emerges from the Social Security program itself. Hence, it is already included in estimating Social Security's long-term funding shortfall and counting it once again as a resource for closing the funding gap is inappropriate. Social Security's total unfunded liability has been estimated to be between \$7 and \$10 trillion. This liability represents a net transfer of wealth from future toward living generations and may constitute a significant factor underlying the long-term decline in U.S. national saving.

Although Social Security's long-term funding shortfall appears sizable, that of the entire budget is even larger. A fiscal policy is sustainable only if it treats future generations on par with its treatment of living ones. Achieving such a generationally balanced policy is likely to require even bigger tax hikes or benefit reductions than those required for fixing Social Security's finances alone. Finally, waiting for several years before implementing the necessary policy changes is likely to force even bigger adjustments in the future.

Footnotes

1. The required payroll tax hike is 1.81 percentage points for the OASI program and 0.38 percentage points for the Disability Insurance (DI) program. These estimates are based on SSA's intermediate economic and demographic assumptions.
2. These unpublished estimates were provided by SSA actuaries.
3. The DI program is not considered in this analysis. Also, taxes on Social Security benefits are not included. Because these taxes are relatively small, their exclusion should not materially alter the results. More details can be found in Steven Caldwell, Melissa Favreault, Alla Gantman, Jagadeesh Gokhale, Thomas Johnson, and Laurence J. Kotlikoff, "Social Security's Treatment of Postwar Americans," in James Poterba, ed., *Tax Policy and the Economy*, vol. 13. Cambridge, Mass.: National Bureau of Economic Research (forthcoming).
4. We use two tools in implementing these calculations: CORSIM and SSBC. CORSIM is a computer simulation that produces life trajectories for a representative sample of U.S. individuals born after 1945. The life trajectories generate a host of demographic events like aging, marriage, divorce, child-birth, employment, earnings, unemployment, re-employment, retirement, and death. The simulated earnings trajectories are fed into a Social Security Benefit Calculator (SSBC). This computer program calculates OASI taxes and benefits based on individual earnings data. SSBC calculates several types of benefits including retirement, spousal, mother/father, child dependent, child survivor, and divorcee benefits. The earnings, payroll taxes, and benefits are used to calculate various indicators of how Social Security treats different groups of people.
5. Calculating LNTR requires three items: the present-discounted value of earnings (PVE or "lifetime earnings"); the present-discounted value of OASI taxes (PVT or "lifetime taxes"); and the present discounted value of OASI benefits (PVB or "lifetime benefits").
For each sample person, annual earnings, taxes, and benefits are converted to 1997 dollars and are discounted using a 5 percent rate to the year when he/she became age 18. A 5 percent discount rate is used to reflect a 3.5 percent rate of return on safe investments and a 1.5 percent premium to compensate for the riskiness of Social Security benefits. Next, the LNTR (in percent) is calculated as the excess of lifetime payroll taxes over lifetime benefits as a share of lifetime earnings. The formula is:
$$\text{LNTR} = [(PVT - PVB)/PVE] \times 100.$$
6. Calculating RR involves finding the rate of discount at which $PVT = PVB$. The LNTR calculations show that PVT exceeds PVB for most postwar cohorts at a 5 percent discount rate. However, payroll taxes occur earlier and benefits occur later in workers' lifetimes. Hence, lowering the discount rate increases PVB by more than it increases PVT. The rate at which the two become equal is RR—the rate of return that benefits yield on the initial contributions.
7. See Jagadeesh Gokhale, Laurence J. Kotlikoff, and John Sabelhaus, "Understanding the Postwar Decline in National Saving: A Cohort Analysis," *Brookings Papers on Economic Activity*, vol. 1 (1996).
8. See Jagadeesh Gokhale, Benjamin Page, and John Sturrock, "Generational Accounts for the United States: An Update," Federal Reserve Bank of Cleveland, *Economic Review*, vol. 33, no. 4 (1997), pp. 2–23.
9. See Jagadeesh Gokhale, "Generational Equity and Sustainability in U.S. Fiscal Policy," Federal Reserve Bank of Cleveland, *Economic Commentary*, April 15, 1998.

Jagadeesh Gokhale is an economic advisor at the Federal Reserve Bank of Cleveland. He thanks Gregory Hess and Mark Sniderman for helpful comments.

The views stated herein are those of the author and not necessarily those of the Federal Reserve Bank of Cleveland or the Board of Governors of the Federal Reserve System.

Economic Commentary is available electronically through the Cleveland Fed's site on the World Wide Web: <http://www.clev.frb.org>. We also offer a free online subscription service to notify readers of additions to our Web site. To subscribe, please send an e-mail message to econpubs-on@clev.frb.org.

1998 Economic Commentary

A Hitchhiker's Guide to Understanding Exchange Rates

by Owen F. Humpage
January 1, 1998

Assessing Fundamental Tax Reform

by David Altig, Alan J. Auerbach, Laurence J. Kotlikoff, Kent A. Smetters, and Jan Walliser
January 15, 1998

Canada's Money Targeting Experiment

by Paul Gomme
February 1, 1998

Network Externalities: The Catch-22 of Retail Payments Innovations

by William P. Osterberg and James B. Thomson
February 15, 1998

Gold Prices

by Joseph G. Haubrich
March 1, 1998

What Happened to the Inventory Overhang?

by Terry J. Fitzgerald and Jennifer K. Ransom
March 15, 1998

Private Money: Everything Old Is New Again

by Barbara A. Good
April 1, 1998

Generational Equity and Sustainability in U.S. Fiscal Policy

by Jagadeesh Gokhale
April 15, 1998

In Search of the NAIRU

by David Altig and Paul Gomme
May 1, 1998

Government-Subsidized Training:

A Plan for Prosperity?

by Charles T. Carlstrom and Christy D. Rollow
May 15, 1998

Productivity Measures and the "New Economy"

by John B. Carlson and Mark E. Schweitzer
June 1998

Productivity Gains During Business Cycles: What's Normal?

by Mark E. Schweitzer
July 1998

Measuring Pricing Bias in Mortgages

by Stanley D. Longhofer
August 1, 1998

Global ATM Banking:

Casting the Net

by John D. Hueter and Ben R. Craig
August 15, 1998

Bank Notes and Stored-Value Cards:

Stepping Lightly into the Past

by William P. Osterberg and James B. Thomson
September 1, 1998

What Fiscal Surplus?

by Jagadeesh Gokhale
September 15, 1998

Currency: Time for Change?

by Paul W. Bauer
October 1, 1998

Is the Current-Account

Deficit Sustainable?

by Owen F. Humpage
October 15, 1998

**Federal Reserve Bank of Cleveland
Research Department
P.O. Box 6387
Cleveland, OH 44101**

Address Correction Requested:

Please send corrected mailing label to the above address.

Material may be reprinted provided that the source is credited. Please send copies of reprinted materials to the editor.

**BULK RATE
U.S. Postage Paid
Cleveland, OH
Permit No. 385**