

The implications of Social Security's "missing trust fund"

Authors: Alicia Haydock Munnell, Wenliang Hou, Geoffrey Sanzenbacher

Persistent link: <http://hdl.handle.net/2345/bc-ir:108512>

This work is posted on [eScholarship@BC](#),
Boston College University Libraries.

Chestnut Hill, Mass.: Center for Retirement Research at Boston College, June 2019

These materials are made available for use in research, teaching and private study, pursuant to U.S. Copyright Law. The user must assume full responsibility for any use of the materials, including but not limited to, infringement of copyright and publication rights of reproduced materials. Any materials used for academic research or otherwise should be fully credited with the source. The publisher or original authors may retain copyright to the materials.

THE IMPLICATIONS OF SOCIAL SECURITY'S "MISSING TRUST FUND"

BY ALICIA H. MUNNELL, WENLIANG HOU, AND GEOFFREY T. SANZENBACHER*

Introduction

As policymakers consider restoring financial balance to Social Security, understanding the reason for the shortfall is important. If the cost of currently scheduled benefits simply exceeds what today's workers are paying into the system, the traditional proposals to reduce benefits or raise payroll taxes would be most relevant. However, the cause of the shortfall lies elsewhere. Specifically, the program's "pay-as-you-go" approach – with the exception of the recent build-up and spend-down of a modest trust fund in anticipation of the baby boom – makes the program expensive. This financing approach is the result of a policy decision in the late 1930s to pay benefits far in excess of contributions for the early cohorts of workers. The decision essentially gave away the trust fund that would have accumulated and, importantly, gave away the interest on those contributions. This *brief*, based on a recent paper, explores the implications of the "Missing Trust Fund."¹

The discussion proceeds as follows. The first section discusses the origin of the Missing Trust Fund and its cost implications for current workers. The second section discusses how the Missing Trust Fund relates to Social Security's Legacy Debt and the pattern of net transfers over the generations. The third section lays out alternative paths forward – funding vs. pay-as-you-go and payroll taxes vs. income taxes.

The final section highlights three implications. First, Social Security costs are high, not because the program is particularly generous, but because the trust fund is missing. Second, the beneficiaries of the trust fund giveaway were early generations; in contrast, the much-maligned baby boomers are scheduled to pay for their full benefits. Finally, if policymakers choose to maintain Social Security benefits at current-law levels, little rationale exists for placing the entire burden of the Missing Trust Fund on today's workers through higher payroll taxes; that component could be financed more equitably through the income tax.

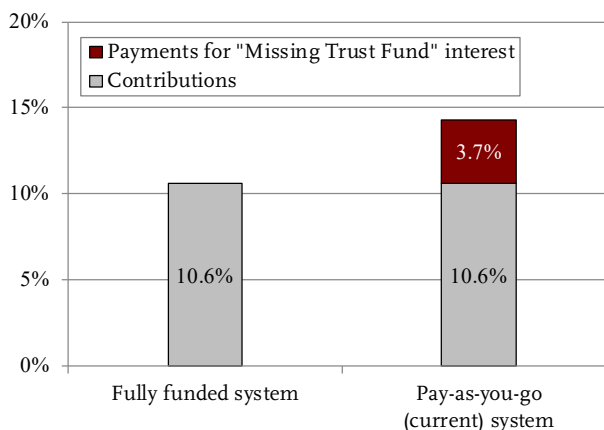
* Alicia H. Munnell is director of the Center for Retirement Research at Boston College (CRR) and the Peter F. Drucker Professor of Management Sciences at Boston College's Carroll School of Management. Wenliang Hou is a senior research advisor at the CRR. Geoffrey T. Sanzenbacher is associate director of research at the CRR.

Cost of Missing Trust Fund

With the exception of the buildup of reserves in the wake of the 1983 amendments and the imminent depletion of these reserves, Social Security has generally been financed on a pay-as-you-go basis. This funding method differs sharply from the original 1935 legislation, which set up a plan that bore a much stronger resemblance to a private insurance plan, with the accumulation of a trust fund and the close alignment of contributions and benefits for any given cohort. The 1939 amendments, however, fundamentally changed the nature of the program. These amendments tied benefits to average earnings, initially over a minimum period of coverage, and added spousal and survivor benefits that were effectively unfunded, thus breaking the link between lifetime contributions and benefits. These changes meant that, in the early stages of the program, payroll tax receipts were used to pay benefits to retirees far in excess of their contributions rather than to build up a trust fund.²

The simplest way to see the implications of Social Security's Missing Trust Fund is to consider the contribution rate required to finance the program's retirement benefits under a funded retirement plan compared to a pay-as-you-go system. (This analysis excludes the Disability Insurance program.) The approach uses a stylized model of a funded retirement system, with the Social Security Trustees' intermediate assumptions on mortality and the real interest rate. Assuming the goal is to achieve a replacement rate of about 36 percent (the projected Social Security replacement rate for the average earner once the Full Retirement Age is age 67), the typical worker would have to contribute about 10.6 percent of earnings.³ Under a pay-as-you-go system with a projected ratio of two workers for each retiree and annual real wage growth of 1.2 percent, a 36-percent replacement rate would require a contribution rate of 14.3 percent. The resulting 3.7-percentage-point difference (14.3 percent minus 10.6 percent) in the required payroll tax in these two stylized models is due to the presence of a trust fund that can pay interest in a fully funded system but is missing in the pay-as-you-go system (see Figure 1).

FIGURE 1. COST AS PERCENTAGE OF PAYROLL FOR FUNDED AND PAY-AS-YOU-GO RETIREMENT PLAN



Note: The fully funded system assumes contributions from ages 22 to 65 that accrue interest at a real rate of 2.7 percent with assets used to buy an actuarially fair annuity at age 65. Source: Authors' calculations.

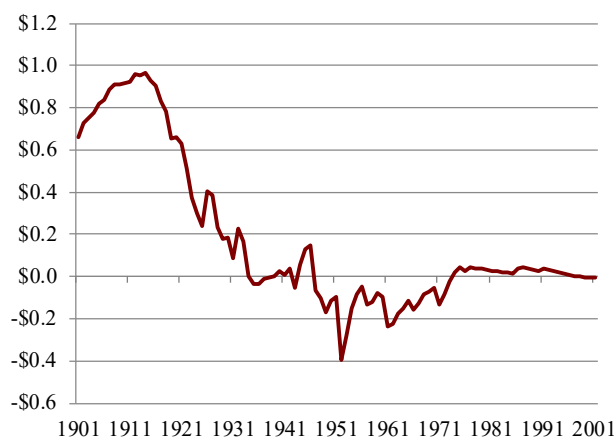
Interestingly, if Social Security were a fully funded program, the cost of the retirement benefits calculated above – 10.6 percent – would be very close to the current actual tax rate –10.4 percent – for the retirement portion of Social Security. That is, essentially, the full amount of the shortfall can be attributed to the fact the program does not have a trust fund producing interest.

Source of Missing Trust Fund

This Missing Trust Fund consists of two components: 1) benefits paid to early cohorts in excess of their contributions; and 2) net transfers by subsequent birth cohorts. The part of the Missing Trust Fund created specifically by paying early cohorts more than they contributed is often referred to as the Legacy Debt. It is not identical to the Missing Trust Fund, because later birth cohorts could have replaced some of that missing fund if they had contributed more into the program than they are projected to receive, or they could have added to the deficit.⁴ This study uses readily available data to calculate the net transfers by cohort – that is, the present value of contributions minus the present value of benefits for each age group.

Figure 2 shows the net transfer (benefits minus contributions) for each birth cohort between 1901 and 2001, a cohort that is just entering the workforce. The figure clearly illustrates that early birth cohorts received large positive transfers and that birth cohorts affected most by the 1983 amendments are projected to receive negative net transfers, even under current law. That is, a group including the much-maligned baby boom – born between 1946 and 1964 – will have paid more into the system than they are scheduled to receive in benefits. More recent birth cohorts are expected to receive no net transfers, which underscores the point (illustrated in Figure 1) that current tax rates are about at the appropriate level for covering the cost of benefits in a fully funded system.

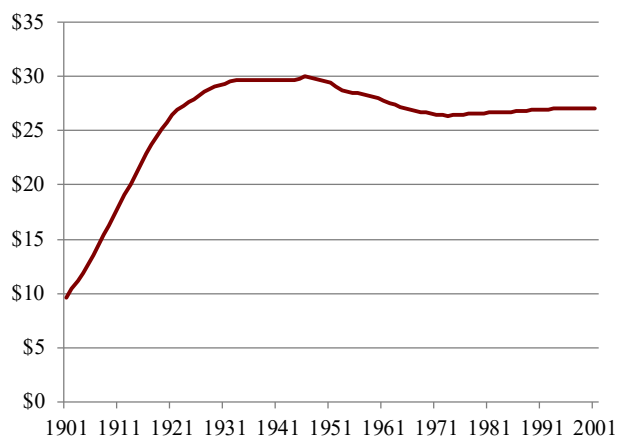
FIGURE 2. NET TRANSFERS UNDER CURRENT LAW, BY BIRTH COHORT, TRILLIONS OF 2016 DOLLARS



Sources: 2016 SSA Trustees Report; Current Population Survey 1962-2016; and Leimer (2007).

The net transfers by cohort can be added up to get the cumulative total. The Missing Trust Fund through the 2001 cohort is equal to \$27.0 trillion (see Figure 3). This figure is the difference between the Legacy Debt of \$29.7 trillion and the net negative transfer experienced by the 1935-2001 birth cohorts of \$2.7 trillion.⁵ This Missing Trust Fund makes the program more costly than it otherwise would be, as current participants are forced to contribute toward both benefits and the missing interest. The cost of dealing with this Missing Trust Fund is the subject of the next section.

FIGURE 3. CUMULATIVE NET TRANSFERS UNDER CURRENT LAW, BY BIRTH COHORT, TRILLIONS OF 2016 DOLLARS



Note: “Cumulative net transfers” include \$9.0 trillion to pre-1901 birth cohorts.

Sources: 2016 SSA Trustees Report; Current Population Survey 1962-2016; and Leimer (2007).

Dealing with the Missing Trust Fund

Broadly, if policymakers wish to maintain current benefit levels, two ways exist to deal with Social Security’s financial shortfall. The first is simply to raise taxes to replace the missing interest, roughly holding constant the present value of the Missing Trust Fund going forward. To implement this approach, the revenue coming into the program would need to be increased permanently.

An alternative approach would be to increase taxes by a higher amount but only temporarily, until a trust fund consistent with a fully funded program is built up. This buildup could be accomplished over a short time horizon with a larger tax increase or over a longer period with a smaller tax increase. In any case, once this trust fund is built up, the accrued interest will allow a return to roughly today’s level of the payroll tax, which – as discussed earlier – is consistent with a fully funded system given the current level of benefits. Note that the notion of building up a trust fund is included only for purposes of illustration. A full assessment of such an approach would involve an extensive macroeconomic analysis, which is beyond the scope of this study.

Within these two broad approaches, alternatives exist for actually implementing the required tax increases. The most obvious way is simply to increase the payroll tax by the required amount, maintaining the current cap of \$132,900 (adjusted annually for wage growth). A second approach is to combine a payroll tax increase with an expansion of the tax base by eliminating the payroll tax cap completely. (The calculations below assume that contributions made over the current cap do not generate additional benefits.) A third approach is to shift some of the burden from the payroll tax to the income tax to reflect the fact that the Missing Trust Fund is a function of the policy decision to pay early beneficiaries more than they contributed. One could argue that these additional costs should not be borne solely by workers through taxation of their earnings, but instead should include some taxation of capital income as well.

Table 1 shows how large these tax increases would have to be to pay for the missing interest or to replace the Missing Trust Fund entirely over 75 to 150 years. The table makes clear that replacing the Missing Trust Fund requires a larger tax increase than simply paying the missing interest and that expanding the tax base – either by taxing earnings above the cap or by using the income tax – requires a smaller rate increase. For example, the required increase in the capped payroll tax is 3.7 percentage points to pay the missing interest indefinitely and 6.5 percentage points to replace the Missing Trust Fund in 75 years, compared to 3.0 and 5.3 percentage points if the cap

TABLE 1. REQUIRED PERCENTAGE-POINT INCREASE IN TAXES TO FINANCE “MISSING TRUST FUND” UNDER POLICY ALTERNATIVES

	Raise payroll tax	Raise payroll tax + eliminate cap	Raise income tax
<i>Pay back interest only</i>	3.7%	3.0%	2.3%
<i>Replace Missing Trust Fund in:</i>			
150 years	4.5	3.7	2.8
125 years	4.8	4.0	3.0
100 years	5.4	4.5	3.4
75 years	6.5	5.3	4.1

Sources: 2017 Social Security Trustees Report; and authors' calculations.

is eliminated. Expanding the tax base even further and using the income tax lowers these amounts to 2.3 percentage points and 4.1 percentage points respectively.

An analysis of the distributional effects of various policies to deal with the Missing Trust Fund relies on the National Bureau of Economic Research's TaxSim program and the *Survey of Consumer Finances* (SCF).⁶ Once variables for each household are appropriately coded, they can be run through the program to produce the household's income and payroll tax liability. These amounts can then be adjusted to see how different ways of addressing the Missing Trust Fund impact households at different points in the income distribution. For purposes of the analysis, households are divided into four quartiles based on their current income.

Regardless of the size of the tax increase selected, the relative burden across the income quartiles depends on the method of financing. As shown in Table 2, the capped payroll tax increase tends to be the most evenly distributed, the uncapped payroll tax next, and the income tax brings in the highest share from the top quartile.

TABLE 2. SHARE OF TAX INCREASE PAID UNDER POLICY ALTERNATIVES, BY INCOME QUARTILE

	Raise payroll tax	Raise payroll tax + eliminate cap	Raise income tax
Top quartile	54%	65%	84%
Second quartile	29	22	12
Third quartile	13	10	4
Bottom quartile	4	3	1

Sources: 2017 Social Security Trustees Report; and authors' calculations using the 2013 SCF and Feenberg and Coutts ("TaxSim").

Conclusion

The Missing Trust Fund is mostly a result of Legacy Debt built up during the early years of the Social Security program. These origins suggest that – if the goal were to maintain benefits at current-law levels – policymakers might want to consider a variety of

ways to structure a revenue increase, ranging from an increase in the payroll tax without an expansion of its base, to a smaller increase in the payroll tax with an expansion of its base, to an increase in the income tax. Taxing society more widely – through an income tax increase – could make sense given that society as a whole benefited from having a generation of people receive benefits who did not fully contribute to the system. In theory, any of these taxes could be raised permanently by a moderate amount, effectively paying the missing interest from the Missing Trust Fund, or by a larger amount, ultimately replacing the Missing Trust Fund before returning taxes to their current level. But the real issue is that the cost implications of the Missing Trust Fund are worth considering in any proposal to close Social Security's financing gap.

Endnotes

- 1 Munnell, Hou, and Sanzenbacher (2017).
- 2 The story of Ida Mae Fuller is an extreme example. Ms. Fuller had worked under Social Security for less than three years when she became the first person to claim monthly benefits. She died at 100, after receiving benefits for 35 years. She clearly enjoyed an extraordinary rate of return on her contributions to the system.
- 3 See Munnell, Hou, and Sanzenbacher (2017) for more details on this estimate.
- 4 A concept that reflects these later transactions is the Closed Group Unfunded Obligation, calculated each year by Social Security's Office of the Chief Actuary. The most recent estimate from Nickerson and Burkhalter (2017) is \$30.8 trillion, which includes the disability component of Social Security.
- 5 This figure ignores other Social Security Trust Fund components, such as administrative costs. For other estimates of the Legacy Debt, see Geanakoplos, Mitchell, and Zeldes (2000), Diamond and Orszag (2005), and Leimer (2016).
- 6 To run the SCF data through the TaxSim program, it is necessary to code 22 variables into the required format. These include standard variables like age, state of residence, marital status, and number of dependent children under age 19. The program also requires information on the respondents' and their spouses' income from wages and salary. Several other sources of household income must be included as well, including: dividends, property income, pensions, Social Security benefits, and transfers. Adjustments are allowed for rent paid (which affects property tax rebates), medical expenses, child care expenses, mortgage interest, and capital gains and losses.

References

- Diamond, Peter A. and Peter R. Orszag. 2005. "Saving Social Security." *Journal of Economic Perspectives* 19(2): 11-32.
- Feenberg, Daniel and Elisabeth Coutts. "TaxSim." Cambridge, MA: National Bureau of Economic Research.
- Geanakoplos, John, Olivia S. Mitchell, and Stephen P. Zeldes. 2000. "Would a Privatized Social Security System Really Pay a Higher Rate of Return?" Working Paper 6713. Cambridge, MA: National Bureau of Economic Research.
- Leimer, Dean R. 2007. "Cohort-Specific Measures of Lifetime Social Security Taxes and Benefits." ORES Working Paper Series 110. Washington, DC: U.S. Social Security Administration, Office of Research, Evaluation, and Statistics.
- Leimer, Dean R. 2016. "The Legacy Debt Associated with Past Social Security Transfers." *Social Security Bulletin* 76(3): 1-15.
- Munnell, Alicia H., Wenliang Hou, and Geoffrey T. Sanzenbacher. 2017. "How to Pay for Social Security's Missing Trust Fund?" Working Paper 2017-18. Chestnut Hill, MA: Center for Retirement Research at Boston College.
- Nickerson, Daniel and Kyle Burkhalter. 2017. "Unfunded Obligation and Transition Costs for the OASDI Program." Actuarial Note 2017.1. Baltimore, MD: U.S. Social Security Administration, Office of the Chief Actuary.
- U.S. Board of Governors of the Federal Reserve System. *Survey of Consumer Finances*, 2013. Washington, DC.
- U.S. Census Bureau. *Current Population Survey*, 1962-2016. Washington, DC.
- U.S. Social Security Administration. 2000-2017. *The Annual Reports of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Federal Disability Insurance Trust Funds*. Washington, DC: U.S. Government Printing Office.

About the Center

The mission of the Center for Retirement Research at Boston College is to produce first-class research and educational tools and forge a strong link between the academic community and decision-makers in the public and private sectors around an issue of critical importance to the nation's future. To achieve this mission, the Center sponsors a wide variety of research projects, transmits new findings to a broad audience, trains new scholars, and broadens access to valuable data sources. Since its inception in 1998, the Center has established a reputation as an authoritative source of information on all major aspects of the retirement income debate.

Affiliated Institutions

The Brookings Institution
Mathematica – Center for Studying Disability Policy
Syracuse University
Urban Institute

Contact Information

Center for Retirement Research
Boston College
Hovey House
140 Commonwealth Avenue
Chestnut Hill, MA 02467-3808
Phone: (617) 552-1762
Fax: (617) 552-0191
E-mail: crr@bc.edu
Website: <https://crr.bc.edu>

© 2019, by Trustees of Boston College, Center for Retirement Research. All rights reserved. Short sections of text, not to exceed two paragraphs, may be quoted without explicit permission provided that the authors are identified and full credit, including copyright notice, is given to Trustees of Boston College, Center for Retirement Research.

The research reported herein was performed pursuant to a grant from the U.S. Social Security Administration (SSA) funded as part of the Retirement Research Consortium. The opinions and conclusions expressed are solely those of the authors and do not represent the opinions or policy of SSA, any agency of the federal government, Boston College, or the Center for Retirement Research. Neither the United States Government nor any agency thereof, nor any of their employees, make any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of the contents of this report. Reference herein to any specific commercial product, process or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply endorsement, recommendation or favoring by the United States Government or any agency thereof.