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**Article**

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NBER Reporter Online

**Provided in Cooperation with:**

National Bureau of Economic Research (NBER), Cambridge, Mass.

*Suggested Citation:* Shoven, John B. (2007) : The structure of social security and medicare, NBER Reporter Online, National Bureau of Economic Research (NBER), Cambridge, MA, Iss. 3, pp. 9-11

This Version is available at:

<https://hdl.handle.net/10419/61906>

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# The Structure of Social Security and Medicare

John B. Shoven\*

In the past three years, I have co-authored a series of papers on the structure of Social Security and Medicare with Sita Nataraj Slavov and Gopi Shah Goda. These studies were supported by the Social Security Administration in a series of grants to the NBER as part of the SSA Retirement Research Consortium.

Rather than construct yet another Social Security reform proposal, in this series of papers we examine certain features of Social Security (and, in one case, Medicare) that affect saving and labor force participation in the economy. Our view is that a close inspection of Social Security and Medicare reveals a number of features and incentives that are not widely understood. For instance, we find that federal government budget accounting has contributed to the failure of the Social Security Trust Fund to help soften the burden of the retirement of the babyboomers. We also find that the existing Social Security benefit structure is incorrectly characterized as low-risk defined benefit plan. In fact, we find that the social security benefit formulae have changed considerably over time in the United States and changed even more dramatically in Europe. The economic and political risk of traditional pay-as-you-go social security is far greater than widely appreciated.

We highlight a number of features of Social Security that discriminate against people who work long careers and we evaluate a number of policy changes that could remove that discrimination. Finally, we find that Medicare contains a high implicit tax on working beyond age 65 through its policy of Medicare as a sec-

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ond payer. Our analysis indicates that Medicare could change this policy so that people eligible for Medicare would receive it whether they worked for an employer with health coverage or not. Given the long-run fiscal challenges faced by the federal government, it is my opinion that all policies that discourage people from working need to be examined carefully.

The first paper in this series, "Has the Unified Budget Undermined the Federal Government Trust Funds?" (NBER Working Paper No. 10953), was written by Sita Nataraj Slavov and me and published in December 2004. We investigate whether one of the purposes of the 1983 Social Security reform has indeed been accomplished. That reform intentionally set the Social Security payroll tax rate above the level needed to pay current benefits for at least the 30-year period between 1984 and 2014. The intention was to convert the system from an almost pure pay-as-you-go operation to a partially pre-funded system. The plan was that this partial pre-funding would ease the burden on future workers during the retirement of the babyboomers. The babyboomers would pay higher than necessary payroll taxes during their working lives so that the succeeding generations of workers would face lower-than-otherwise payroll tax rates. The military and civil service retirement programs followed suit in the mid-1980s by switching from pay-as-you-go financing to funded systems.

Was the planned intergenerational transfer of resources actually accomplished? The excess income generated by these retirement programs was transferred to the rest of the federal government, which issued bonds in return. The bonds were accumulated in federal trust funds, which in total had approximately \$3 trillion by 2004. However, our paper sug-

gests that the trust fund build-up will not help future generations. The failure of the trust funds to alleviate the burden on future workers appears to be at least partly attributable to the adoption of the Unified Budget in 1970. The Unified Budget includes trust fund receipts as income and trust fund payments as expenditures. The effect is that the surplus trust fund receipts reduce the overall federal government unified deficit or increase the overall unified surplus. The empirical evidence suggests that the money transferred from the trust funds to the rest of the government has led to more government spending and to personal and corporate income tax cuts. We find that every dollar that the trust funds have saved and handed over to the rest of the government has been spent. Therefore, there is no evidence that the government as a whole has increased saving as a result of the trust fund accumulations.

The same paper investigates whether the change in the tax mix (higher payroll taxes and lower individual taxes) has led to more private saving, but we could find no evidence for this effect. We conclude that the intergenerational burden sharing attempted by the Greenspan Commission has not occurred. Since there is no evidence that national saving has been increased by the trust fund accumulations, future generations will not have any additional resources to help them pay for the entitlement benefits of the babyboomers.

The second paper in the series, "Political Risk Versus Market Risk in Social Security" (NBER Working Paper No. 12135) by Slavov and me, was published in April 2006. Pay-as-you-go Social Security is typically characterized as a universal defined benefit pension program. Implicit in this characterization is a sense that the participant's investment in future benefits is somehow guaranteed, or safe

from risk. We argue that there cannot be a universal defined benefit system in the first place. Defined benefit retirement programs involve some entities (employers or insurance companies) insuring the safe benefits of others, the participants or workers. In a defined benefit system, investment risks are transferred from one set of parties to another. In a universal system where everyone participates, there is no outside group on whom to transfer the risk. Whatever risks there are in a universal pension program have to be borne by the participants themselves.

Our paper develops the concept of “political risk” as the possibility that legislatures will be forced to change the tax and benefit provisions of pay-as-you-go social security programs when there are changes in the demographic and macroeconomic variables that support it. Thus there is a “political risk” to participants that might be compared to the “market risk” in a personal accounts retirement program.

We carry out a detailed quantitative analysis of political risk in the U.S. Social Security system, as well as an overview of policy reforms in several European countries that demonstrate political risk more broadly across social security systems. For the United States, we compute the internal rates of return (IRRs) from Social Security for various age groups and income levels, using the existing law in effect each year since 1939. We find considerable variation in IRRs through time for any birth cohort. Participants experienced significant declines in IRRs as a result of adjustments made to restore the system’s solvency in 1983 and 1994. If the system had been brought into actuarial balance in 2005, younger cohorts would have experienced another significant decline in their lifetime IRR. Our review of other countries demonstrates considerable political risk in their social security systems as well. The changes in the law necessitated by actuarial imbalances pass demographic risk on to participants.

Our view is that the choice between unfunded legislated Social Security systems and funded individual accounts should be based on portfolio theory.

Both types of systems have considerable risk, but the nature of the risks is different. Traditional Social Security risk stems from uncertainty about demographics and productivity changes. With individual accounts, the risk stems from the variability of stock and bond returns. Elementary portfolio theory suggests that an efficient portfolio would feature both types of pension programs rather than relying exclusively on one type or the other.

The third paper, written by Gopi Shah Goda (who was a research assistant on the first two papers), Slavov, and myself, is “Removing the Disincentives in Social Security for Long Careers” (NBER Working Paper No. 13110), published in May 2007. We find a number of features in the way that Social Security benefits are computed that discourage long working careers. That is, the effective tax rate for working goes up as someone works for a longer period of time. While the payroll tax rate may stay the same for each additional year of work, the extra benefits earned from the extra year of work decline as the career length increases. We define an implicit net tax rate for Social Security, which measures Social Security contributions (that is, taxes) net of benefits accrued as a percentage of earnings. This implicit tax rate increases in an uneven manner for most workers as their career progresses.

In the paper, we examine the effects of three potential changes in the way that benefits are computed on implicit Social Security tax rates: 1) extending the number of years used in the Social Security formula from 35 to 40; 2) allowing individuals who have worked more than 40 years to be exempt from payroll taxes; and 3) distinguishing between lifetime low-income earners and high-income earners who work short careers. These three changes can be achieved in a benefit- and revenue-neutral manner, and create a pattern of implicit tax rates that are much less distortionary over the life cycle, eliminating the high implicit tax rates faced by many elderly workers. We also examine the effects of these policies on the overall progressivity of Social Security and find

only a small effect. Finally, we examine how these changes would affect women relative to men and what other measures could be adopted to mitigate the differential impact. These possible reform measures would harm women somewhat relative to men, but the difference isn’t enormous. We find, for instance, that if women were given one year of Social Security credit for time raising children or caring for elderly parents, that would more than offset the relative harm of these three policy adjustments.

The fourth paper in the series, by the same three authors, is “A Tax on Work for the Elderly: Medicare as a Secondary Payer” (NBER Working Paper No. 13383). Medicare as a Secondary Payer (MSP) legislation was passed in 1982 and became effective in 1983. It requires employer-sponsored health insurance to be the primary payer for Medicare-eligible workers at firms with 20 or more employees. While the legislation was developed to better target Medicare services to individuals without access to employer-sponsored insurance, MSP creates a significant implicit tax on working beyond age 65. This implicit tax is approximately 15–20 percent at age 65 and increases to 45–70 percent by age 80. Eliminating this implicit tax by making Medicare a primary payer for all Medicare-eligible individuals could significantly increase lifetime labor supply because of the high labor supply elasticities of older workers. The extra income tax receipts from such a policy would likely offset a large percentage of the estimated costs of making Medicare a primary payer.

Taken together, these papers highlight features of Social Security and Medicare that are not widely understood and have important unanticipated economic effects. The first paper basically concludes that the intention of the Greenspan Commission to partially pre-fund Social Security simply didn’t work. The combination of trust fund accounting, the unified federal budget, and executive and congressional behavior is such that the attempt by the federal government to save money simply failed.

The second paper concludes that we don't have a defined benefit Social Security system; that there is no risk transfer that would be required; and that existing Social Security systems in both the United States and Europe are actually quite risky for participants. The third paper finds that the U.S. Social Security system discourages long careers by disproportionately taxing work by those who have already worked for a long time. It

analyzes three policies that could be introduced to level the playing field in terms of how people with different career lengths are treated.

Finally, the fourth paper finds that Medicare also can discourage work by the elderly, by requiring them to cover their health insurance costs via their employer if the employer offers such coverage to the rest of its workforce. Replacing Medicare as a Secondary Payer with Medicare as

a Primary Payer would improve work incentives for many people over 65 and would actually cost the government very little in terms of the overall federal budget. In my opinion, it is worth considering these and other measures to restructure Social Security and Medicare to stop discouraging people from working long careers.

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## NBER Profile: *Jean Paul Chavas*

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Jean Paul Chavas was elected to the NBER's Board of Directors in September to represent the American Agricultural Economics Association (AAEA). He is a Professor in the Department of Agricultural and Applied Economics at the University of Wisconsin, Madison.

Born in France, where he received his undergraduate degrees, Chavas holds an M.S. and Ph.D. from the University of Missouri, Columbia. Prior to joining the faculty of the University of Wisconsin in 1982, he taught at Texas A&M University.

He was at the University of Maryland in College Park in 2003–4. In addition to his teaching and research, he has served as a consultant on USAID projects in Tunisia and Burkina Faso.

Chavas's research interests are production economics, risk, quantitative methods, and welfare analysis. He has received a number of awards in recent years for Outstanding Research, and was elected a Fellow of the AAEA in 1994. He enjoys traveling.