

- Are Trust Fund Surpluses Spent or Saved?
- Does Population Aging Affect Financial Markets?
- The Market for Long-Term Care Insurance

# NBER NATIONAL BUREAU OF ECONOMIC RESEARCH

## BULLETIN ON AGING AND HEALTH

### Are Trust Fund Surpluses Spent or Saved?

The outlays of the U.S. Social Security system are projected to rise dramatically over the next several decades as the baby boomers retire. While benefits today cost about 11 percent of taxable payroll, they are expected to rise to over 15 percent by the time the last boomers retire in 2026.

In order to partially pre-fund these outlays, Congress raised payroll taxes in 1983 beyond the level needed to pay benefits. The large annual Social Security surpluses resulting from the tax increase — \$150 Billion in 2003 alone — are saved in a trust fund to be used in the coming decades when benefit outlays exceed payroll tax receipts. This policy change was intended to spread the cost of financing baby boomers' retirements over multiple generations. Without this reform, large tax increases on future workers would be needed to pay the full benefits promised to retirees.

However, trust funds only help future generations of workers if they raise total government savings, so that future workers have more resources to meet benefit obligations and other spending needs. If the trust fund surplus is offset by increased spending or reduced taxes in the rest of the government, the extra resources will not be there. When the government operates under a unified budget that includes all revenues and outflows, offsetting spending increases or tax cuts may be more likely, as public debate may focus on the unified surplus or deficit rather than the surplus or deficit in the rest of the government excluding the trust fund.

**In Has the Unified Budget Undermined the Federal Government Trust Funds?** (NBER Working Paper 10953), **Sita Nataraj** and **John Shoven** explore this issue. The authors point out that although public attention has largely focused on the Social Security trust fund, the federal government also maintains trust funds for Medicare, unemployment insurance, civil service and military retirement, and transportation. The authors examine the relationship between the surplus in these trust funds and the surplus in the rest of the government (federal funds) using annual data from 1949-2003. In their analysis, the authors account for the effect of other factors that may affect these surpluses, such as the business cycle, the interest rate, and the share of wages that fall below the Social Security payroll tax cap.

The authors find a strong negative relationship between the surpluses: an additional dollar of surplus in the trust funds is associated with a \$1.50 decrease in the federal funds surplus.

This finding is not significantly different from a \$1.00 decrease, which would suggest a dollar-for-dollar offset of trust fund surplus with spending increases or tax cuts; the authors are able to reject the hypothesis that the full dollar of trust fund surplus is saved by the government.

To examine the theory that a unified budget makes offsetting spending increases or tax cuts more likely, the authors examine the relationship between the surpluses before and after the adoption of the unified budget in 1970. They find no effect of trust

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fund surpluses on federal funds surpluses before 1970 and a strong negative effect after 1970. The authors note "this confirms our argument that the adoption of the unified surplus is the factor that hinders the government's ability to save in the trust funds."

The authors also examine the theory that an increase in the trust fund surplus can raise national saving by raising personal saving. The reasoning is that payroll taxes disproportionately affect low-income individuals and income taxes disproportionately affect high-income individuals, who are more likely to save. Thus if trust fund surpluses are used to fund income tax cuts, personal saving may rise. The authors find that a \$1.00 increase in the trust fund surplus may increase personal savings by about 50 cents, although this effect is not always statistically significant.

The authors conclude that the total debt of the government would have been \$3 Trillion lower if the goal of government had been to balance the

federal funds budget rather than the unified budget. The authors also address the question of whether trust fund assets are “real.” They note that “from the perspective of Social Security, the trust fund does represent real claims on the rest of the govern-

ment,” but that “from the perspective of future generations of workers, the trust funds do not represent incremental wealth” and thus will not assist them in coping with Social Security’s financial shortfall.

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## Does Population Aging Affect Financial Markets?

With the baby boom generation nearing retirement age and life expectancies continuing to increase, the U.S. population is aging rapidly. By 2030, the share of the U.S. population that is over age 65 is projected to be higher than it is in Florida today.

Population aging may affect financial markets if individuals tend to amass assets during their working years and spend them during retirement. When there is a large cohort such as the baby boom, there may be more demand than usual for corporate stock and other assets while the cohort saves for retirement. This demand may abate after the cohort retires. Some analysts believe that the rise in stock prices in the 1990s can be partially attributed to this, and have forecast sharp declines in asset prices in coming decades as boomers sell their assets to the smaller baby bust generation that follows them.

In **The Impact of Population Aging on Financial Market**, (NBER Working Paper 10851), **James Poterba** examines the potential impact of population aging on asset returns, the valuation of assets, and the demand for various financial assets and products.

The author begins by noting that several factors may mitigate the expected effect of the baby boom and baby bust cohorts on asset prices and returns. If boomers anticipate low returns in the future, they may save less today. If the size of the capital stock can adjust when the demand for capital increases, the change in asset prices will be smaller than with a fixed supply of assets. If global capital markets are well integrated, then asset prices will depend on global demographic forces rather than trends within a single country. If the age structure in the population affects the rate of productivity growth, this could swamp

any asset price effects arising from demography-induced changes in asset demand. Finally, if investors anticipate that the retirement of boomers will lead to lower asset prices, this future price decline should be incorporated into the current price of assets. Consequently, asset prices should not experience a sharp decline in the future.

Next, the author turns to evidence on household asset holdings by age to see whether households accumulate assets during their working years and decumulate them during retirement. He cautions that it may be impossible to completely separate the effect of an individual getting older (age effect) from the effect of being part of a particular cohort whose preferences may differ from those of other cohorts (cohort effect) and the effect of having experienced particular events such as a period of high asset returns at a given point in time (time effect).

He shows that mean and median asset holdings both rise with age until about age 60. After this, there is no noticeable decrease in asset values with age, although correcting for the fact that wealthier households are more likely to survive to older ages results in some decumulation during retirement. Poterba notes that there will be additional decumulation of assets in retirement outside of household portfolios, as balances in defined benefit pension plans are sold to finance benefits.

The author then estimates the relationship between the age structure of the population and asset prices and returns using data from the 1926-2003 period. He first examines real annual returns for three assets — Treasury bills, long-term government bonds, and stocks in large corporations. He finds that the effect of the age structure on asset returns is greatest for Treasury Bills, while there is no effect

for stocks. However, the relationship for Treasury Bills exists only prior to World War II. When he examines the effect of the age structure of the population on the price of corporate stocks, he finds that an older population is associated with an increase in stock prices, although the results are very sensitive to the particular choice of specification.

Finally, the author examines how population aging may affect the demand for different types of assets by tabulating age-specific holdings of various assets. This exercise is subject to the same difficulty in separating age, cohort, and time effects. Poterba finds that households age 65 and above currently hold about one-third of all corporate stock held by the household sector, and roughly the same fraction of bonds. The over-65 group is projected to hold nearly one-half of these assets in 2040. These older households are also projected to hold nearly two-thirds of annuity contracts in 2040, up from half today.

In concluding, Poterba notes that economic theory clearly predicts that a baby boom should drive asset prices up and asset returns down for its cohort. However, he writes, “none of the empirical findings provide a strong and convincing measure of the amount by which asset prices will change as the population of the United States and other developed nations ages.” Nonetheless, given the inherent difficulties in estimating this relationship, he believes that “the theoretical models should be accorded substantial weight in evaluating the potential impact of demographic shifts.”

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## The Market for Long-Term Care Insurance

Expenditures on long-term care services in the U.S. are high and growing — they reached \$135 Billion in 2004, or 1.2 percent of GDP, and are projected to triple in real terms by 2040 as the U.S. population ages and health care costs continue to rise.

Long-term care expenditures represent a significant financial risk for the elderly. A 65-year-old woman has a 44 percent chance of entering a nursing home during her lifetime and, upon entering, faces an average stay of two years. Long-term care is extremely expensive — the average rate for a semi-private room in a nursing home was over \$50,000 per year in 2002.

Economic theory suggests that individuals should find it valuable to protect themselves against the risk of these large expenses by purchasing private long-term care insurance. Yet the market for such insurance is quite small. Only 10 percent of the elderly have a private long-term care insurance plan, and because coverage under these plans is often limited, only 4 percent of long-term care expenditures are paid by private insurance, while fully one-third of expenditures are paid out-of-pocket.

NBER researchers **Jeffrey Brown** and **Amy Finkelstein** explore possible explanations for the scarcity of private long-term care insurance in a pair of new papers. As the authors point out, the limited size of the market may be due to factors that limit the demand for private insurance, such as the existence of the government Medicaid program or limited awareness on the part of consumers, or to supply side market failures, such as a lack of competition in the private insurance market, problems of adverse selection or moral hazard, or the inability of the industry to insure against aggregate risks like rising health care costs.

In **Supply or Demand: Why Is the Market for Long-Term Care Insurance So Small?** (NBER Working Paper 10782), the authors provide the first empirical evidence on the pricing and benefit structure of long-term care policies. They note that

if significant supply side market failures exist, private insurance plans may be priced significantly above the actuarially fair level, so that premiums exceed expected benefits. In addition, insurers may only offer plans that provide incomplete coverage.

The authors find that the typical policy purchased by a 65-year-old and held until death pays out 82 cents in benefits for every dollar of premium. That 18 percent load factor is significantly higher than the 6 to 10 percent load usually found on private health insurance plans. The typical purchased policy is also not very comprehensive, as it covers only one-third of expected expenditures.

However, the authors point to evidence suggesting that high prices and limited benefits are not the primary cause of the small size of the market. They find very large differences in pricing by gender — the typical load factor is 44 percent for men and negative 4 percent for women, so that expected benefits actually exceed premiums for them — yet the rate of purchase of private insurance is very similar for men and women. They also find that insurance companies offer plans that cover 90 percent of expected benefits. The authors conclude that although supply side market failures exist in the private long-term care insurance market, they are not sufficient to explain its limited size.

The authors explore one particular demand side factor in **The Interaction of Public and Private Insurance: Medicaid and the Long-Term Care Insurance Market** (NBER Working Paper 10989). Medicaid is the payer of last resort; the program covers long-term care expenditures after an individual has used any private insurance benefits for which he is eligible and exhausted most of his financial resources paying for his care out-of-pocket. Medicaid is thus an incomplete but free substitute for private long-term care insurance and its existence may discourage individuals from purchasing private insurance.

The authors develop a model of a

forward-looking 65-year-old individual who makes decisions about his present and future consumption and about whether to buy long-term care insurance in the presence of uncertainty about long-term care expenditures. The authors use the model to calculate the effect of Medicaid on the individual's willingness to pay for private insurance.

The authors find that Medicaid is critical in explaining the absence of private insurance. Even if supply side market failures could be eliminated so that individuals could purchase comprehensive private insurance with a zero load factor, they estimate that at least two-thirds and as much as 90 percent of the population would still not want to buy because of the existence of Medicaid.

They show that one important reason for this result is that the design of Medicaid imposes a high “implicit tax” on private insurance benefits — for a median wealth individual, 60 to 75 percent of premiums go to pay for benefits that Medicaid would otherwise have provided. They also find that recently enacted state Medicaid reforms and federal and state tax subsidies to private insurance are unlikely to have a big effect on this implicit tax, or therefore on the demand for private insurance.

Finally, they note that because Medicaid requires individuals to spend most of their assets before becoming eligible for benefits, it is a poor substitute for private insurance. Medicaid does not effectively protect financial assets or allow individuals to smooth their consumption over time.

As Brown and Finkelstein write, “policy changes that substantially reduce or eliminate Medicaid's implicit tax are necessary conditions for stimulating the private market.”

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## NBER Profile: *Olivia S. Mitchell*

Olivia S. Mitchell is a Research Associate in the NBER's programs on Aging and Labor Studies. She has been affiliated with the NBER since 1981.

Mitchell is the International Foundation of Employee Benefit Plans Professor and Professor of Insurance and Risk Management at the Wharton School of the University of Pennsylvania. She is also the Executive Director of the Pension Research Council and the Director of the Boettner Center for Pensions and Retirement Research at Wharton.

Mitchell is a member of the Executive Committee of the American Economic Association and a past member of the Board of Directors of the National Academy of Social Insurance. She is an Institute Fellow of the TIAA-CREF Institute and a co-Principal Investigator for the Health and Retirement Study. Mitchell is an Editor of the Industrial and Labor

Relations Review and several other journals. In 2001, she served on the President's Commission to Strengthen Social Security. In 2004, she received the INA Prize from the Accademia Nazionale dei Lincei, Rome, Italy.

She received a Ph.D. in Economics from the University of Wisconsin at Madison and an A.B. in Economics from Harvard.

Mitchell's research focuses on the economics of public and private insurance with a focus on retirement security. In her recent work she has examined the role of annuities in financing retirement, Social Security's money's worth, pension reform in developing countries, and guarantees in defined contribution pension plans.

In her occasional free time, she likes to hike and scuba dive with her family, particularly in countries having interesting pension systems and warm oceans in January.



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