



Mitigating America's demographic dilemma by pre-funding social security[☆]

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Abstract

Financing Social Security benefits at current levels implies significant increases in payroll taxes within the next 20 years under current US demographic developments. Using a general-equilibrium overlapping-generations model with realistic patterns of fertility and lifespan extension, this study shows that future generations would be harmed during the demographic transition due to rising payroll taxes, which crowd out savings and slow real wage growth below the rate of technological progress. A faster rate of technological progress would mitigate only some of the payroll tax increase and its economic consequences but could not overcome them. Addressing the financing problem by reducing Social Security benefits as needed or by raising the eligibility age for benefits imposes major welfare losses on current or near term retirees. By contrast, a pre-funding of Social Security financed with consumption taxes more evenly spreads the welfare losses across generations, and it helps future generations, especially the poor, by stimulating capital formation.

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1. Introduction

How will the United States economy fare in 30 years when 77 million baby boomers will have retired? By that time, twice the number of elderly will rely on only 18% more workers for financial support primarily delivered through Social Security and Medicare.

Based on “intermediate” economic and demographic assumptions, the government’s Trustees project that Social Security is one-sixth short of the resources needed to pay benefits over the next 75 years. These estimates, though, understate the long-run problem: extending the projection horizon beyond 75 years doubles this shortfall.¹ Medicare, which provides health care to retirees, faces even larger long-run shortfalls.² Eliminating the imbalances in both programs beyond the 75-year horizon and without reducing benefits would require doubling the payroll taxes levied on employees and employers, thereby reducing labor supply incentives.

These demographic forecasts, however, are partial equilibrium calculations and, therefore, may miss important general equilibrium effects during the demographic transition. An aging society could theoretically benefit from accelerated real wage growth as the number of retirees with capital rises relative to the number of workers supplying labor (Auerbach et al., 1989; Bohn, 2001). Accelerated real wage growth could then limit the payroll tax increases necessary to balance Social Security. However, this process is not guaranteed since the larger payroll taxes also reduce the potential for saving and thus limit capital formation and growth.

Using a new general-equilibrium life-cycle model, this paper analyzes the economic impact of demographic changes and explores the economic and welfare impact of potential reforms. This study builds on the literature that followed Feldstein’s (1974) article contending that Social Security lowers national saving, including Kotlikoff (1979), Auerbach and Kotlikoff (1983), and Seidman (1986). More recent papers have considered the importance of land, earnings uncertainty, political economy considerations, liquidity constraints and different options for funding Social Security. These studies include Hubbard and Judd (1987), Imrohroglu et al. (1995, 1999), Kotlikoff (1996), Huang et al. (1997), Huggett and Ventura (1999), Cooley and Soares (1999a, b), De Nardi et al. (1999), Kotlikoff et al. (1998a, b, 1999, 2002), Raffelhüschen (1989, 1993), Bohn (2001) and Smetters and Walliser (2004).

While the model herein builds on the model of Auerbach and Kotlikoff (1987), it adds five important features for studying the impact of demographic changes: (i) more realistic demographics that allows the model to better capture the population-age distribution and distribution of inheritances, (ii) cohort-specific longevity to reflect the important impact of rising longevity on the age distribution, (iii) multiple earnings groups within each cohort to capture the impact that reforms have on different lifetime income groups,³ (iv) the ability to simulate the model from non steady-state initial conditions in order to start with the prevailing age and wealth distribution, and (v) a close calibration of the model to US fiscal conditions and institutions.

¹See the 2004 Social Security Trustees’ report, Table 4.B7.

²See the 2004 Medicare Trustees’ report, Table 2.B11, Table 2.C16, and Table 2.C22.

³Intra-generational heterogeneity was also included in Fullerton and Rogers’s (1993) important study of fundamental tax reform.

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