RESEARCH Brief

University of Michigan Retirement Research Center

Marking Social Security's Open Group Liability to Market

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This paper marks Social Security's open group liability to market taking into account the riskiness of its aggregate benefit payments and tax receipts. The open group liability references the present value of the system's net cash flow from now through the indefinite future. The latest Social Security Trustees Report (2009) estimates this liability at $15.1 trillion. But the discounting used to form this estimate takes no explicit account of risk and, therefore, potentially misprices both future benefits and taxes.

Our risk adjustment is based on Ross (1976) Arbitrage Pricing Theory. Specifically, we treat the growth rates of the system's aggregate benefits and taxes as implicit securities that are spanned by the returns on marketed securities. This procedure focuses, then, on aggregate flows. This is quite different from the micro-based aggregation procedures underlying the Trustees Report, which requires highly detailed analysis of the cash flows arising from the program's numerous benefit and tax provisions.

Our pricing of Social Security's infinite horizon net liability builds on prior independent work by Blocker, Kotlikoff, and Ross (2009) and Geanakoplos and Zeldes (2009). Both papers attempt to risk-adjust Social Security liability measures, albeit two different liability measures, which are, in turn, different from the liability measure considered here. Blocker, et al. (2009) considers the liability to current workers of paying their future benefits net of receiving their future taxes assuming the system continues to operate under its current rules. Geanakoplos and Zeldes (2009) consider the "shutdown liability" (also known as the "maximum transition cost") of the current system, i.e., they value the system's accrued benefit liability.

Our results, which we view as preliminary, suggest that the market value of Social Security's open group liability may be many times larger than the $15.1 trillion stated in the Trustees' Report. Unlike Blocker, Kotlikoff, and Ross (2009), this discrepancy between our financial valuation and Social Security's does not reflect differences in the value assumed for the safe rate of return. To control for this factor, we simply follow Social Security and Geanakoplos and Zeldes (2009) in assuming a 2.9 percent safe real rate of discount. We also find that the precise marketed assets used to price future Social Security benefits and taxes can significantly alter the estimate of the open group liability.

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