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Comment   Jonathan Skinner

Everyone knows that the United States is embarking on a fundamental demographic shift as the baby boomers age, but there's less agreement on how it will affect the financial security of future retirees. James M. Poterba, Steven F. Venti, and David A. Wise (2007b) have provided some critical answers to this larger question by charting the course of defined benefit plans and their future inflows and outflows. The chapter is remarkable not because the results are shocking—indeed, they appear quite reasonable—but because of the incredible attention to detail in building up from the micro-level patterns of data to aggregate predictions. By harnessing millions of individual-level observations from a variety of sources and years, they not only provide a solid foundation for the aggregate estimates, but they also

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allow for checks on the data predictions to ensure that they're not being misled by any single source of data. This chapter is, therefore, of interest both as a methodological exercise and as providing reliable estimates of future flows and stocks of defined benefit assets.

Still, the authors must ultimately confront several unknowable measures regarding future growth in wages and in rates of return and, hence, future growth. The most difficult to predict, of course, is the rate of return on assets. As they note, the historical nominal return on equity has been 12.3 percent and on bonds 6.2 percent, and they make the assumption that similar returns will continue during their analysis. Predicting future rates of return (and the gap between stock and bond returns) is, of course, a difficult business, and there is little agreement on even the premium of expected stock returns over bond returns, (e.g., Geanokoplos, Mitchell, and Zeldes 1999), without even trying to guess what will be the level of each. Still, it seems prudent to focus on rates of return somewhat less stellar than those experienced in the past, and so I will focus on the authors' calculations assuming rates of return 300 basis points below the historical record.

I consider three questions. First, what is the partial-equilibrium shift in all assets (including defined contribution and Social Security trust funds) caused by these demographic change? Second, how much would we expect this shift to affect the gross rate of return on assets? And third, by how much would this change in the rate of return affect the future income of retirees?

What Is the Partial-Equilibrium Shift in Demand for Assets?

There are three basic sources of assets most relevant to this exercise. The first is private retirement accounts, which include both defined benefit plans and defined contribution (or 401[k]) plans. In a companion piece, Poterba, Venti, and Wise (2007a) have performed a similar exercise for defined contribution plans such as 401(k)s, and in this chapter, the authors combine both defined contribution and defined benefit flows.

Figure 10.5 in this volume shows the Poterba, Venti, and Wise best estimate of the net flows from these two sources combined. As noted in the preceding, I will focus on the lower rates of return, and under this assumption, they predict a net outflow from combined defined benefit and defined contribution plans. They find that defined benefit assets will exhibit little change over time, with the loss in participants offset by the higher per-worker benefits of those remaining. However, defined contribution plans are projected to both grow rapidly, and then to decline as baby boomers draw down their assets, leading to significant net outflows. By 2020, the systems are in equipoise, with contributions balanced by withdrawals, but by 2040, the floodgate has burst, resulting in a net outflow of just less than 400 billion dollars annually.

The second is the Social Security trust fund. Currently under intermediate projections, it is predicted to grow to about $3.5 trillion in 2020 before
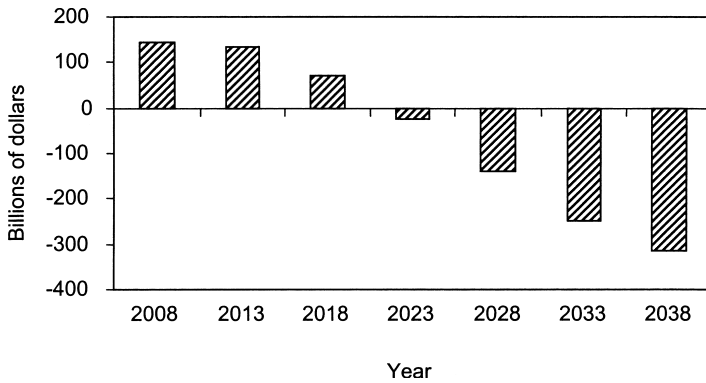
Fig. 10C.1   Inflows and outflows of the OASDI trust fund (intermediate projections)

Source: Social Security Administration trustees report, 2006. Annualized changes calculated from predicted levels of assets and assigned to midpoint year.

beginning its march toward bankruptcy by 2040. The implicit *annual* flows out of the trust fund (as Treasury bonds are sold off) is shown in figure 10C.1, where once again the trust shows little net flows around 2020, but after 2035 there is a dramatic decline the stock of treasury bonds held by the Social Security Administration being sold off to make up for the budgetary shortfalls. Of course, by 2040, that outflow stops when there are no longer assets to sell, and taxes must either be raised or benefits cut. And if the Social Security Administration takes action before the last dollar is drained from the trust fund, there would be further moderation of the outflows.

The third category is private wealth. The primary reason for why demographic changes would affect wealth and saving behavior is simply because of a change in the age structure, more retirees and fewer younger people. However, it is difficult to pin down this specific number. First, the defined benefit and defined contribution flows noted in the preceding already reflect much of the traditional life-cycle saving that is done through tax-preferred retirement plans. Second, the pure life-cycle effects are likely attenuated by the substantial fraction of wealth held by the extremely wealthy, and thus unlikely to be subject to life-cycle deaccumulation (United States Government Accounting Office [USGAO] 2006). Third, as noted in Dynan, Skinner, and Zeldes (2004), elderly households show at best modest levels of dissaving (or even positive saving). Finally, as shown in figure 10C.2, predicted changes in wealth holdings owing to shifts in the demographic structure are modest because the fraction of the population at peak saving ages—those forty-five to sixty-four—declines only slightly, from 20.2 to 20 percent, between 2000 and 2040 (Goyal 2004). There is a sizeable increase in the elderly population sixty-five and over, but the in-
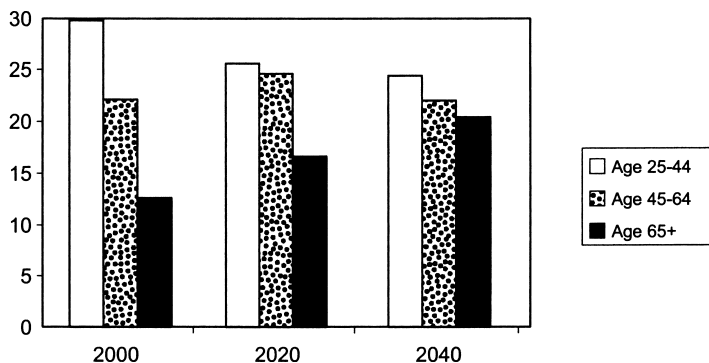
Fig. 10C.2   Projections of the age distribution in the U.S., 2000–2040
Source: Goyal (2004).

crease is largely offset by a decline in the proportion of younger age groups, but these younger groups tend to have modest saving rates as well.

In sum, by 2020 we should not expect to observe any large change in the demand for assets, but by 2040 we might expect an outflow of as much as $750 billion—more if private nonretirement saving scales back substantially, less if Social Security reforms are implemented before the trust fund goes bust. While large in dollar terms, this shift is still relatively modest in comparison to projected U.S. gross domestic product (GDP) of 23.8 trillion (2005$) in 2040 (Social Security Trustees 2006). Shifts in implied saving rates of 3 percent (e.g., 750 billion divided by 23.8 billion) are not out of the ordinary, particularly with respect to recent declines in aggregate saving rates, and the magnitude would be even smaller in the presence of potential capital inflows from developing countries such as China or India.

How Will This Shift in Demand Affect the Rate of Return on Assets?

In the simplest model, a fall in national saving rates should lead to a decline in the capital-labor ratio and, hence, a *rise* in the interest rate. An offsetting effect, of course, is the change in the age distribution and, hence, in the net number of workers. Krueger and Ludwig (2007) have addressed these two effects in the context of a general equilibrium simulation model for the United States and other countries and conclude that on net, the decline in labor dominates the decline in capital, thus leading to between a 12 and 89 basis point decline in the interest rate. Their estimated effects are quite sensitive to whether taxes are raised to maintain Social Security solvency (the former estimate) or whether benefits are cut (the latter). As it turns out, the open-economy and closed-economy estimates are quite similar, largely because other countries are experiencing the same shift in the age distribution.

Missing from these estimates, however, is the possibility of a more short-term demand effect going in the opposite direction—that a (flow) decline in the demand for assets will lead to a drop in stock market and bond returns (e.g., Poterba 2004). A recent comprehensive review of the literature suggested at best modest effects, with results again bounded largely by a decline of .5 percent (USGAO 2006). Again, these effects are consistent with the modest magnitude of the expected shift in demand.

How Will Changes in the Rate of Return Affect Retiree Welfare?

The Krueger and Ludwig (forthcoming) estimate of an 89 basis point decline is the largest estimate I've seen of how the aging baby boomers will affect asset returns, so it is useful to put this difference in perspective. Certainly small differences in the rate of return can exert a large impact on wealth accumulation; the difference between $1,000 invested at 4 percent and $1,000 invested at 4.89 percent over twenty years is $2,191 versus $2,598, which is real money. On the other hand, many retirees depend primarily on annuity flows, for example, from Social Security benefits, and so interest rates will have relatively less impact on overall retiree income. (Lower interest rates may further improve the U.S. government's ability to pay Social Security benefits given that it tends to issue debt.) More to the point, it's not unusual to find differences in administrative fees for mutual funds of 100 basis points or more. So one could put the 89 basis points in another context—it's smaller in magnitude than the difference in return between the administrative fees from keeping one's money in a retail brokerage account, paying a 2 percent administrative fee, versus a Charles Schwab, Vanguard, or Fidelity low-fee account. It seems likely that baby boomers will face more insidious risks in the future.

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