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Chapter Author: Robert J. Willis

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Comment   Robert J. Willis

This chapter is the third in a sequence of papers by this team that investigates the implications of the growth of 401(k) plans as the major source of pension wealth in the United States. Since I also served as discussant of the

Robert J. Willis is a professor of economics at the University of Michigan, where he is also a research scientist at the Institute for Social Research and a research associate of the Population Studies Center.

earlier papers, I will use my discussion to provide some context on the overall project as well as specific comments on this chapter.

The first two papers (Poterba et al. 2005; Poterba, Venti, and Wise 2009), focus on the trade-off between risk and returns faced by individual households in the Health and Retirement Study (HRS) cohort who use 401(k) plans to save for retirement. In their analysis, they calculate probability distributions of retirement wealth under alternative portfolio allocations of annual contributions to bonds and stocks using simulations based on the historical distribution of annual stock market returns. They establish that portfolios with a high share of stocks (nearly) stochastically dominate those with bonds. Using these probability distributions to evaluate the expected utility of the alternative investment strategies, they find that all-stock portfolios would be preferred by all but extremely risk averse persons, as would be expected from the puzzlingly high equity premium. To incorporate the possibility that the future will differ (modestly) from the past, they also analyze the expected utilities of alternative portfolios under the assumption that returns will be 300 basis points lower than the historical mean. Even in this case, portfolios dominated by stocks tend to have higher expected utility for persons with moderate degrees of risk aversion or significant amounts of other wealth such as Social Security. Including human capital and flexible labor supply (including delayed retirement) as another means to offset risky stock returns would only strengthen this conclusion.

In contrast to their previous papers, the current chapter provides actuarial projections for successive cohorts to 2040 of 401(k) wealth and defined benefit (DB) wealth by deciles of lifetime earnings or Social Security wealth with no allowance for risk apart from considering the effect of projections in which the mean rates of return are either assumed to be at slightly less than their historical nominal averages of 12.6 percent for large cap stocks and 6.2 percent for long-term corporate bonds or, alternatively, with returns on both assets that are 300 basis points lower. These projections document the rapid growth of 401(k) plans across cohorts since they were introduced in 1982 and project that this growth will continue into the future, albeit at an eventually slowing rate, tending toward an equilibrium with high, but not universal coverage characterized by substantial differentials in participation across socioeconomic groups. On average, they project that the total dedicated financial resources available to individuals and households will be far larger than would have been the case had there been continued reliance on DB plans, even in the scenario in which stock returns are 300 basis points lower than their historical average.

The chapter itself is primarily devoted to describing in detail the methods, data, and assumptions used to carry out the projections. As would be expected from this team, the projections are done carefully and, in situations in which there are data problems, as seems to be true of lifetime earnings in the lowest decile, or no obviously sound model on which to base projec-

tions, such as cross-cohort growth in participation rates in 401(k) plans, the issues and, for the most part, their approaches in dealing with them are laid out clearly. However, despite the fact that their projections show a dramatic change in the level and composition of retirement resources for future cohorts, they provide very little discussion of likely behavioral responses of households and public policy to these changes. In addition, as I noted earlier, they do not consider the role of uncertainty about stock returns at either the micro or macro level. In my remaining comments, I will speculate about behavioral responses and the role of uncertainty.

Over the next forty years, using the U.S. Social Security Administration (SSA) assumptions employed by Poterba, Venti, and Wise (henceforth, PVW) of 3.9 percent future nominal wage growth and 2.8 percent inflation rate, real wages will be about 1.5 times as high in 2040 as they are now and, given some neutrality assumptions, the lifetime earnings of cohorts reaching age sixty-five in 2040 will also be about 1.5 times as large as the lifetime earnings of cohorts reaching retirement in 2000. Assuming that future returns to stocks and bonds equal their historical returns, PVW project that real retirement wealth will be 2.8 to 3.5 times as high for those in the top six deciles of the lifetime earnings distribution for cohorts retiring in 2040 compared to those retiring in 2000. With stock returns lowered by 300 basis points they project that retirement wealth will still be 2.0 to 2.5 times as large for this subgroup. Even those in the second decile are projected to have retirement wealth that grows more rapidly than real lifetime earnings.

Is it plausible to believe that the U.S. retirement landscape will evolve according to the PVW projections? At first glance, it may seem unlikely that people would shift such a large portion of their lifetime resources toward the end of life. The reason for the projected rapid growth of retirement resources is the high rate of return of both stocks and bonds relative to projected defined benefits either from a pay-as-you-go Social Security program or from private DB plans together with the assumption that contribution rates of future cohorts will be similar to current cohorts. Of course, given certainty of rates of return, a DB plan could promise to pay a flow of benefits during retirement that has exactly the same present value that a DC plan with the same asset base could pay. In the past, however, promised DB benefits have not risen in proportion to assets when, as in the 1990s, returns have been unusually large. Rather, in such a situation, firms have sought to reduce contributions to their pension funds because they are not needed to maintain solvency. The shift from DB to DC plans reflects not only a shift in who bears the risk of variable asset returns, but also a shift from provision for retirement as part of a collective wage bargain to a matter of individual household saving decisions.

While the PVW projections do not allow for it, it seems quite possible that individuals managing their own 401(k) participation and contribution rates

might also reduce contributions if fund balances are growing too rapidly. More generally, in order to understand the implications of the shift to 401(k) plans, we need to have better estimates of the elasticity of lifetime savings with respect to expected rates of return to put in place of the zero elasticity implicit in the PVW projections. In a similar vein, another response to an overly rapid accumulation of 401(k) balances might be earlier retirement. Such a response would require a "re-reversal" of the recent rise in retirement age that appears to have broken the long-term decrease in retirement age from the mid-nineteenth century until around 1995, as documented by Costa (2000). One possible reason for the recent increase in retirement age, of course, is that people believe that the latter part of the life cycle will require substantially more retirement resources than in the past, in part because they expect to live longer and, more importantly, because of the growth in both the cost and efficacy of medical care. The PVW projections suggest that the shift toward 401(k) plans may generate resources to accommodate increasing needs for medical care in old age. On the other hand, pay-as-you-go financing of Medicare reduces the connection between incentives for retirement saving and demand for medical care. All of this suggests that it would be fruitful to embody more behavioral responses and alternative policy scenarios into projections of the sort presented by PVW.

In thinking forty years into the future and beyond, everyone agrees that uncertainty is enormously important but, as in this chapter, it is often ignored because it is so difficult to think about a reasonable way to deal with it in quantitative terms. Nonetheless, I think that one cannot think about implications of the spread of 401(k) assets as the major form of dedicated retirement wealth for much of the population without thinking about the role of uncertainty. In the previous two papers by PVW (plus Joshua Rauh) that I mentioned at the beginning of my comments, they showed convincingly that the expected utility from retirement portfolios invested in risky assets like stocks tends to be higher than safer portfolios invested in bonds for all but the most risk averse households, based on historical returns in the stock market.

At the cost of a lot of effort, the simulations in the current chapter could have utilized the same methodology utilized in the earlier papers to calculate the projected distribution of expected utilities at retirement of successive cohorts of Americans as 401(k) plans spread. I have a strong expectation—doubtless shared by PVW—that such an effort would not alter the main findings of the current chapter with its much simpler assumptions about future rates of return. The reason is implicit in the equity premium puzzle: namely, historical stock returns are puzzlingly high relative to returns on safe assets and, consequently, projected future values of portfolios dominated by stocks using historical returns will tend to dominate alternative mechanisms for providing retirement resources.

The key question is whether historical returns provide a reliable guide to the level of expected returns and degree of long-term risk faced by households in current and future cohorts who are entrusting their financial well-being in retirement to accumulations in their 401(k) accounts. While professors like me (and the authors) who have participated in 403(b) plans during their careers have done extremely well with portfolios dominated by stock, it appears that the broad population represented in the Health and Retirement Study has a more pessimistic view of stock returns, as reflected by their answers to the question: "By next year at this time, what is the percent chance that mutual fund shares invested in blue chip stocks like those in the Dow Jones Industrial Average will be worth more than they are today?" For instance, Gabor Kézdi and I have found that, on average, HRS respondents think that the probability of a stock market gain over one year is 48 percent (as compared to a probability of 73 percent based on historical data) and that they believe the variability of returns is also larger than the historical record shows (Kézdi and Willis 2007). Indeed, the professors themselves may not believe that the future will be like the past. For example, rare disasters (Barro 2006) or the evolution of the "hidden structure" of the economy (Weitzman 2007) create considerably greater uncertainty than is contained in the historical record of stock prices used in the first two PRVW (Poterba, Rauh, Venti, and Wise) papers, to say nothing of the virtual certainty assumed in the current chapter. These papers suggest that the equity premium reflects this excess risk, perhaps inadequately.

The picture painted by PVW of a prosperous future of retirees living on their 401(k) wealth may be the most reasonable point estimate, but there is some chance (not easily estimable) that it will be wildly off the mark. People who have roughly equal expected lifetime utility during the accumulation phase of the life cycle but choose different portfolio mixes may end up with very different levels of living in retirement. In the PVW scenario, those who put their eggs in the equity basket will end up far richer during retirement than their fellow cohort members who choose inflation-adjusted bonds. On the other hand, persistent downside macro risks of the sort emphasized by Barro and Weitzman may give those on the pessimistic fringe the last laugh. However the economy evolves, large inequalities in retiree resources may create strong political pressure for redistribution. Pay-as-you-go financing of Social Security and Medicare, as proponents often note, provides an insurance benefit that is more valuable the higher the true riskiness of the real economy. Fortunately, both households and government have flexibility to make substantial adjustments in choices and policies as elements of the hidden structure of the economy are revealed or disasters occur. This flexibility reduces the private and social costs of long-term risks, allowing economists analyzing the welfare effects of the spread of 401(k) plans to put more weight on the happy scenario that is described in this chapter, despite the possibility of lurking disasters.

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