Executive Summary

Optimizing the Retirement Portfolio: Asset Allocation, Annuitization, and Risk Aversion

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July 2006

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This research was conducted with support from a TIAA-CREF Institute grant to the National Bureau of Economic Research, and a grant from the Social Security Administration via the Michigan Retirement Research Center at the University of Michigan under subcontract to the Johann Wolfgang Goethe-University of Frankfurt. Additional support was provided by the Pension Research Council at The Wharton School of the University of Pennsylvania, and the Fritz-Thyssen Foundation and the German Investment and Asset Management Association (BVI). Opinions and errors are solely those of the authors and not of the institutions with whom the authors are affiliated. This is part of the NBER Program on the Economics of Aging. © 2006 Horneff, Maurer, Mitchell, and Dus. All Rights Reserved.

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Baby Boomers nearing retirement are now targeted by competing financial service providers seeking to help them manage their money in their golden years. Employer-based pensions are also switching from defined benefit to defined contribution plans, further underscoring retirees' need for insights regarding how they might convert their accumulated assets into a stream of retirement income without exhausting their funds too soon. On the one hand, insurers offer life annuities as the preferred distribution mechanism. On the other, mutual fund providers propose phased withdrawal plans as the better alternative. This paper compares different retirement payout approaches to show how people can optimize their retirement portfolios by simultaneously using investment-linked retirement rules along with life annuities.

To explore this issue, we first evaluate payout products using the "default" pattern adopted under US tax law for defined contribution or 401(k)-type pension portfolios. This permits us to determine whether these withdrawal rules suit a broad range of investors, and we illustrate the drawback of standardizing withdrawal rules. Next, we show that retirement planning would not involve a simple choice between annuitizing all one's money versus selecting a phased withdrawal plan, but rather it requires a combined portfolio consisting of both annuities and mutual fund investments. Using a lifetime utility framework, we compare the value of purchasing a stand-alone life annuity versus a phased withdrawal strategy backed by a properly diversified investment portfolio, as well as combinations of these two products. This framework also enables us to demonstrate the welfare implications of making annuitization compulsory at a specific age, consistent with the policy strategy in Germany and the UK.

Results

When we compare payout annuities and withdrawal strategies as stand-alone products we show that:

- Annuities are attractive as a stand-alone product when the retiree has sufficiently high risk aversion and lacks a bequest motive.
- The fixed benefit rule is consistent only with very low levels of risk aversion (<1), as it exposes the retiree to the risk of outliving assets. Somewhat surprisingly, the fixed percentage rule is appealing for retirees across a wide range of risk preferences. In this sense, this rule is supportive of many in the financial planning industry who propose such a rule. The 1/E(T) rule, which is akin to the 401(k) rule, appeals to low/moderately risk averse retirees, but it is unfavorable for the very risk averse. The fixed benefit rule is not

appealing for most retirees as it exposes the retiree to the risk of outliving her assets, while the 1/T performs worse than any other variable withdrawal rule for a broad range of investors.

- For the three variable distribution plans, the optimal asset allocation is identical given a risk aversion level. Specifically, for low risk aversion, equities dominate, with bonds playing a greater role as risk aversion rises. By contrast, in the fixed benefit case, even risk-averse retirees are led to hold high fractions in bonds.
- Withdrawal plans dominate annuities for low/moderate risk preferences, because the retiree can gain by investing in the capital market and from “betting on death”.

When we examine blended strategies where the retiree may annuitize some of her assets and also follow a phased withdrawal strategy with non-annuitized investments, and stipulate that the retiree makes a one-time decision at the retirement date, we find that:

- Annuities are appealing for those with moderate risk aversion, when retirees can hold both annuities and phased withdrawal plans as a mixed strategy. Withdrawal plans are very attractive for highly risk-averse retirees.
- From an asset allocation perspective, annuities first crowd out bonds when risk aversion rises. As risk aversion increases further, annuities replace equities in the overall portfolio.

Finally, if the retiree can switch into an annuity at some point beyond her retirement date, we find that her optimal annuitization age is sensitive to the degree of risk aversion and interest rates in the following manner:

- Less risk-averse retirees will wait longer until they switch to an annuity. Very risk-averse individuals will be willing to annuitize in a low interest rate environment, but higher interest rates are required to induce annuitization among risk preferrers.

Our results are relevant to a wide range of financial service providers and regulators in the retirement marketplace. Money managers and insurers should recognize that many retirees hold improper asset allocations, as we show that annuities will first crowd out bonds as risk aversion rises, and at higher levels of risk aversion, annuities replace equities in the overall portfolio. Surprisingly, the fixed percentage rule is preferred across a wide spectrum of risk preferences. It dominates the $1/T$ rule for all levels of risk aversion considered, and it is more appealing than the annuity for low/moderate levels of risk aversion. In this sense, our findings are supportive of those in the financial planning industry who propose such a fixed benefit rule.