Targeted Pension Contributions for Target-Date Funds

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Abstract

We consider a retirement savings problem where individuals contribute to a DC pension plan. Several typical asset allocation strategies are modelled, including a target-date fund (or life-cycle) strategy, rebalanced funds with static equity-bond allocations, and lifestyling funds with varying switch start dates. We also consider two different contribution strategies: (1) the individual's monthly contributions are fixed, (2) the contributions are flexible and systematically targeted. For each pair of asset allocation and contribution strategies, we use three stochastic asset return models: a multivariate Gaussian distribution, a bootstrap model that resamples from historical returns data, and a regime-switching Markov model.

Stochastic simulations indicate that the targeted contribution strategy results in a higher end-wealth and a higher replacement ratio at retirement, than the fixed contribution strategy. The variance, value-at-risk and expected shortfall from a defined-benefit benchmark are computed from the simulations. This result is relatively robust to variations in the equity risk premium, correlations between equity and bond returns, fund charges and unemployment. We conclude that a savings method that enables gradual but systematic adjustments to pension contributions delivers better pension outcomes for retirees.

Keywords: Defined contribution pensions, glide path, life-cycle funds

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