Longevity Risk Management for Individual Investors

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We model and numerically solve the optimal asset allocation problem of a retired couple with uncertain lifetime, in the presence of a life insurance policy. The couple maximizes expected utility over their joint lifetime by dynamically adjusting their asset allocation and purchasing term-life insurance. We conduct three numerical analyses: In the base case, we find optimal policies assuming the expected lifetimes are correct. The other two examples introduce longevity risk through either a shift in the expected lifetimes or an unexpected cut in retirement income. We find that optimal asset allocation policy depends on the presence and the type of these risks as well as the relative price of insurance. Furthermore, we show that a generalized linear policy is not likely to help under such circumstances.