

Integrating Optimal Annuity Planning with Consumption-Investment Selections

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Abstract

Annuities can be effective tools in managing longevity risk in retirement planning. This paper develops a framework that merges annuity purchase decisions with consumption-investment selections in retirement planning. After introducing a pricing model and a benefit payment model for an annuity, we construct a multi-period wealth evolution model. An optimization problem is formulated with an objective of maximizing life time utility of consumptions and wealth. Optimal decisions are determined as a trade off between consumption and investment among an annuity, a risky and a risk-free asset. Computational results are provided to illustrate the practical implications of the framework.