

Optimal Assets Allocation and Annuitization Timing Post-retirement

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ABSTRACT

When people retire, purchasing the annuity insurances using their retirement fund is one way against the longevity risk. However, it has some shortcoming; the annual payment may be insufficient for daily life consumption, can't be adjusted for any urgent need (liquidity risk), and moreover, if the policyholders unfortunately pass away early, they couldn't leave the rest policy account value as bequest. Under these considerations, many people won't purchase the annuity insurances right away at retirement; they can do their consumption choices and do asset allocation at the mean time like as "self-annuitization"(the "investment/consumption plan", 2006, Gerrard, Haberman and Vigna), and then convert their portfolios into annuity pension on an adequate moment post-retirement to solve the longevity problem.

This paper investigates the adequate annuitization timing and optimal asset allocation under different investment strategies that can be found according a time-series of safety level as a utility function for a retiree. The utility function set as a mean-variance form with a time-varying weight of the second moment that increasing with time. It reasonably describes that the older dislikes volatility risk. We solve the optimal investment to fit the extreme value of the utility function at each annuitization timing under each given strategies. The higher utility value be at time T after retirement, the prefer a retiree doing self-annuitization plan until annuitizing the portfolios at time T, and then we can find the adequate annuitization timing.

Keywords: self-annuitization, post-retirement, annuitize, pension

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