

Is There Principal-Agent Problem in Variable Annuities? Evidence from Investment Restrictions and a Comparison of Fee Incentives

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Abstract

Variable annuity is a complex investment and insurance product. While the principal-agent problem in traditional investments has been well-studied, there is little work done in the variable annuity market. We investigate the investment restrictions imposed by insurers in guaranteed lifetime withdrawal benefits (GLWBs), and find that unlike mutual fund managers, insurers restrict policyholders to safer investments. This effect is more prominent when the interests of insurers and policyholders diverge further, e.g., when the insurance protection is high, when the insurers are less capable to adjust fee rates, when the market is more volatile, and after crisis. To mitigate the agency issue in variable annuities, we study GLWB products with a performance-based fee structure. We provide unique formulations of the valuation problem with roll-up and step-up features by applying local time in stochastic analysis. Consequently, the paper presents semi-analytical solutions for risk-neutral value of GLWB riders with a performance-based fee structure.