Optimal proportional reinsurance and investment with multiple risky assets and no-shorting constraint. (English summary)


The authors consider a stochastic risk reserve process of an insurance company modeled by a Brownian motion with drift. They assume that the risk reserve can be invested into a risk-free bond and $n$ risky assets whose price processes follow geometric Brownian motions. A proportional reinsurance can also be effected. The authors then consider the stochastic control problem of finding an optimal reinsurance-investment strategy which maximizes the expected exponential utility of the terminal risk reserve under short-selling constraints. The question of minimizing the probability of ruin is also addressed. These problems are solved in a classical way via the Hamilton-Jacobi-Bellman equation which yields explicit results. The paper stands in a long line of papers that investigate optimal stochastic control problems in insurance starting with the paper by S. Browne [Math. Oper. Res. 20 (1995), no. 4, 937–958; MR1378114].

References


Note: This list reflects references listed in the original paper as accurately as possible with no attempt to correct errors.

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