ROBUST ASYMPTOTIC INSURANCE-FINANCE ARBITRAGE

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Abstract. In most cases, insurance contracts are linked to the financial markets, such as through interest rates or equity-linked insurance products. To motivate an evaluation rule in these hybrid markets, (Artzner, Eisele, Schmidt, 2022) introduced the notion of insurance-finance arbitrage. We extend their setting by incorporating model uncertainty. To this end, we allow statistical uncertainty in the underlying dynamics to be represented by a set of priors $\mathscr{P}$. Within this framework we introduce the notion of *robust asymptotic insurance-finance arbitrage* and characterize the absence of such strategies in terms of the concept of $Q\mathscr{P}$-evaluations. This is a nonlinear two-step evaluation which guarantees *no robust asymptotic insurance-finance arbitrage*. Moreover, the $Q\mathscr{P}$-evaluation dominates all two-step evaluations as long as we agree on the set of priors $\mathscr{P}$ which shows that those two-step evaluations do not allow for robust asymptotic insurance-finance arbitrages.

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