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The Financial Impact of Subjective Mortality Risk

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The purpose of this study is to analyze the impact of subjective mortality beliefs on policyholder behavior for withdrawal guarantees in Variable Annuities, and to assess the financial consequences for life insurers. To that extent, we first formulate plausible scenarios for individuals' beliefs about their own mortality risk, based on evidence from the Health and Retirement Study as well as the behavioral economics literature (e.g. Harrison and Rutstrom, 2006; Baranov et al, 2012). Further, we will apply these scenarios to both the life- cycle model and the subjective risk-neutral valuation approach for Variable Annuities with withdrawal guarantees, as developed in Moenig and Bauer (2013). This will allow us to analyze specifically which subjective beliefs lead to the strongest deviation from "benchmark" withdrawal behavior (which has been analyzed and described in Moenig and Bauer, 2013). More importantly, we can thus quantify the repercussions on the valuation of these guarantees, and address whether life insurers offering exercise- dependent policy features need to worry about subjective mortality risk.

Given the popularity of these personal savings products and the troubles the attached guarantees have caused insurers in recent years, this project addresses both the needs of life insurance practice and the questions of behavioral economists about the quantitative impact of subjective mortality beliefs.