Trade-off between
Risk and Uncertainty Premiums

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Abstract

This paper concerns the principal-agent problem where the agent is not fully confident of the stochastic process that governs the relation between his/her effort and the outcomes, i.e. the agent is confronted with Knightian uncertainty. Contrary to the conclusion of the standard principal-agent problem with the agent's moral hazard problem where principal and agent agree with the probability distribution of the outcomes, the incentive scheme where payment is fixed for almost all outcomes can be a second-best contract even though the principal cannot observe the agent's effort. If the agent is not an expected utility maximizer but a maximin expected utility maximizer whose preference is represented by maximin expected utility with the set of multiple probability measures called ε-contamination, which is axiomatized by Nishimura and Ozaki (2006), the agent would concern the spread between the worst outcome and the expected mean outcome, rather than the spread between the best and the worst outcomes. Such an agent requires "uncertainty" premium as well as "risk" premium to make the spread between the worst and the mean as small as possible. For the principal that is to engage such an agent, it is optimal to give an incentive to the agent by offering wage contract such that the remuneration is fixed for almost all the outcomes other than a few of the best outcomes. The size of the set of the outcomes for which the payment is fixed is determined by the trade-off between uncertainty premium minimization and the risk premium minimization.

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