

An Ambiguity Measure under EUUP and Its Application to a Portfolio Problem.

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Abstract

This paper proposes a measure of ambiguity which quantifies the degree of ambiguity under *expected utility with uncertain probability* (EUUP) by Izhakian (2017a). Since EUUP can completely distinguish tastes from beliefs and risk from ambiguity, we can derive an ambiguity measure which is independent of risk and tastes. The measure is given by the volatility of the first-order probabilities just as the extent of risk can be measured by the volatility of outcomes. Although Izhakian (2017b) also derives an ambiguity measure based on the volatility of uncertain probabilities, ours is more flexible and it discriminates between ambiguity in favorable outcomes and it in unfavorable ones. Based on the measure, we also discuss effects of ambiguity on financial investments through comparative statics.

Keywords: Ambiguity measurement, Knightian uncertainty, EUUP, Portfolio selection.