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Title of the research paper:

Non-Allais Paradox and Context Dependent Risk Attitudes: An Experimental Study

Keywords:

Decision under Risk; Expected Utility Theory; Rank dependence;; Allais paradox;

Experiment;

JEL codes:

**C91** Design of Experiments: Laboratory, Individual

**D81** Criteria for Decision-Making under Risk and Uncertainty

Topic 1: Decision Theory: Risk

Topic 2: Decision Theory: Preferences

### **Abstract**

Since Allais (1953) documented violations of the Independence axiom in decision makers, many experimental studies have produced the same type of behavior. As they are not consistent with standard Expected Utility theory, many models that account for such violations have been developed. The most well-known are the Rank-Dependent Utility of Quiggin (1982) and the Cumulative Prospect Theory of Tversky and Kahneman (1992). In this paper, we propose a theoretical model and a laboratory experiment that generate an alternative type of violations that cannot be consistent with these models and are distinct from the Allais Paradox.

We provide and axiomatize a representation in which a decision maker can exhibit different risk attitudes, which we refer to as a Dual Expected Utility representation. In this representation, there will be two different utility functions over the prizes, and the decision maker will use one of them when disappointment probabilities are low and shift to the other once the disappointment probability exceeds a threshold. It contains the standard EU representations as special cases. Unlike the representations that distort weights using a fixed utility function, the DEU allows the concavity/convexity of the utility functions to change.

This observation leads to our experiment design, which consists of a series of binary comparison tasks of two lotteries. Specifically, we change the amount of the most disappointing prize while fixing the other prizes in both lotteries. The main implication shares the core idea of Allais as we expect a riskier lottery may be more preferred to a less risky lottery when the probability of a disappointing prize is high and vice versa. However, the design is distinct because we keep the ranks of the prizes constant while varying only the relative size of the disappointment. A potential choice reversal in this series of comparison tasks will be a simple yet direct test against the Expected Utility, the Rank-Dependent Utility, and the Cumulative Prospect Theory. We expect to extend the results further to narrow down possible thresholds for our DEU representation and use the thresholds to predict the presence of Allais behavior in different scenarios of Common Consequence and Common Ratio examples.