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## **SIGN-DEPENDENT RANGE UTILITY THEORY**

### **Abstract:**

We introduce frame dependent utility, an integrative behavioral model for uncertain cash flows. For gambles played today, the model can be seen as an extension of original prospect theory based on range, rather than rank. For gambles played in the future, the model generalizes the probability and time trade-off model. The model comes with a framing rule to set the range and the reference point, and three functions: a loss averse value function, a s-shaped range distortion function, and a subjective survival function for time. Frame depended utility jointly explains the classical Allais paradoxes, the Samuelson paradox for risk and time, the preference reversal phenomenon, and hyperbolic discounting; and produces many novel testable predictions. The theory presented generalizes two models published in Management Science: Probability and Time Trade-off model (PTT) (Baucells and Heukamp, 2012) and Range Dependent Utility (Kontek and Lewandowski, 2018).

### **Keywords:**

Decision making under risk and uncertainty, Intertemporal choice, Framing, Range effects, Prospect Theory.

**JEL Classification:** D81, D90