An additively separable representation in the Savage framework*

Brian Hill HEC Paris*

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Abstract

This paper elicits an additively separable representation of preferences in the Savage framework (where the objects of choice are acts: measurable functions from an infinite set of states to a potentially finite set of consequences). A preference relation over acts is represented by the integral over the subset of the product of the state space and the consequence space which corresponds to the act, where this integral is calculated with respect to a "state-dependent utility" measure on this space. The result applies at the stage prior to the separation of probabilities and utilities, and requires neither Savage's P3 (monotonicity) nor his P4 (likelihood ordering). It may thus prove useful for the development of state-dependent utility representation theorems in the Savage framework.

Keywords: Expected utility; additive representation; state-dependent utility; monotonicity.

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