When is there state independence?"

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Abstract

It has been noticed that whether a preference relation can be represented by state-independent utilities as opposed to state-dependent utilities may depend on which acts count as constant acts [Schervish et al., 1990]. Indeed, this remark underlies an extension of Savage's expected utility theory to the state-dependent case that was proposed by Edi Kami [Kami, 1993]. This paper contains a characterisation of the preference relations that permit a choice of acts which can play the role of constant acts, and relative to which there is a representation involving a state-independent utility function. This result applies both in the Savage and in the Anscombe & Aumann frameworks. It has as an immediate corollary an extension of Kami's representation theorem. Finally, it is of methodological interest, insofar that it harnesses techniques from mathematical logic to prove a theorem of interest to decision theorists and economists.

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