

Parametric Representation of Preferences^{*†}

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Abstract

A preference is invariant with respect to a transformation τ if its ranking of acts is unaffected by a reshuffling of the states under τ . We show that any invariant preference must be parametric: there is a unique sufficient set of parameters such that the preference ranks acts according to their expected utility given the parameters. This property holds for all non-trivial preferences, provided only that they are reflexive, transitive, monotone, continuous and mixture linear.

**The present paper subsumes DeCastro and Al-Najjar (2009), available on the authors' webpages. Many of the ideas presented here, including subjective sufficient statistic theorem, parametric representations, and parameter-based acts appeared there, as did the major technical results on ergodic theory.*

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