Equity and Efficiency in a Measure Space with
Nonadditive Preferences: The Problem of
Cake Division¤

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May 16, 2005

Abstract

This paper considers a classical problem of cake division in a nonatomic finite measure space among finitely many individuals. We investigate a nonadditive continuous preference relation in a Borel ¾-field and prove the existence of Pareto optimal envy-free partitions, Pareto optimal ®-equitable partitions, and ®-Rawls optimal partitions. We also show that Pareto optimal ®-equitability is equivalent to ®-Rawls optimality, but Pareto optimality does not imply Rawls optimality.