Necessary and Sufficient Conditions for Efficient Risk-Sharing Rules

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April 17, 2006

Abstract

We show that for every collection of strictly increasing risk-sharing rules and every strictly increasing and strictly concave expected utility function, there exists a collection of strictly increasing and strictly concave expected utility functions for which the given risk-sharing rules are efficient and the given utility function coincides with the corresponding representative consumer's utility function. This result shows that the efficiency property imposes no restriction on the risk-sharing rules beyond the comonotonicity, or on the state-pricing rule beyond the positivity and antimonotonicity. We also obtain contrasting results when the individual consumers are assumed to exhibit hyperbolic absolute risk aversion.

JEL Classification Codes: D51, D61, D81, G12, G13.

Keywords: Risk-sharing rule, representative consumer, expected utility, risk aversion, Inada condition, complete markets.

1 Introduction

We consider an exchange economy under uncertainty with a single good and a single consumption period, consisting of consumers who all have expected utility functions with respect to a homogeneous probabilistic belief but their expected utility functions may exhibit heterogenous risk attitudes. As usual, we assume that all individual consumers prefer more to less and are averse to risk, which means that their utility functions are strictly increasing and strictly

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