Optimal Insurance Coverage of a Durable Consumption Good with a Premium Loading in a Continuous Time Economy

Masaaki Kijima* and Teruyoshi Suzuki†

Abstract

This article analyzes the optimal deductible level of insurance on durable consumption goods with a positive premium loading in a continuous-time economy. Assuming financial assets and durable consumption goods can be traded without transaction costs, we provide an explicit solution for the optimal insurance coverage of durable consumption goods together with optimal trading strategies for the amount of the durable consumption goods and financial assets. Using the solution, we show that an increase in premium loading decreases both demand for insured assets and their insurance coverage. We also show that an increase in premium loadings can affect optimal investment strategies through the effects on the optimal amount of durable consumption goods held. Moreover we show that there exist unique parameter values of the loss process such as when no insurance is optimal. Numerical examples help us understand how the risk of financial investment and the risk aversion measure affects an agent's optimal insurance coverage.

Keywords: Insurance, deductible, durable consumption goods, optimal consumption and investment

*Tokyo Metropolitan University, Daiwa Securities Group Chair: Kyoto University

†Corresponding author: Graduate School of Economics Hokkaido University, NISHI 7, KITA 9, KITA-KU SAPPORO 060-0809, JAPAN, e-mail:suzuki@econ.hokudai.ac.jp