

Adverse Selection and Moral Hazard in the Dynamic Model of Auto Insurance

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Abstract

We develop a structural dynamic model to estimate consumer preferences for risk and the risk production function. We apply this framework to analyze panel data of contract choices and claims by customers of a major Portuguese car insurance company. We follow consumers over the multiple time periods (years) as they choose the level of coverage (contract) and the level of effort that is used to stochastically control the risk of an accident. Consumers' decisions reflect non-linearity in contract prices as well as dynamic incentives associated with risk classification. The effort is unobserved (i.e. cannot be contracted on) by insurance company which introduces classical moral hazard considerations in our framework. We additionally allow for unobserved heterogeneity in (and thus selection on) cost of reducing risk, driving ability and risk aversion. We use our estimates to evaluate the relative impact of driving ability, risk aversion and cost of effort on the probability of accident and contract choice.

Keywords: dynamic demand, adverse selection, moral hazard, insurance

JEL Classification:

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