

An Actuarial Model of Cross Subsidization in Price-Regulated Insurance Markets under Moral Hazard

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Abstract

In a market where consumers can observe their risk characteristics, price regulation may spur moral hazard on behalf of high-risk consumers. Such moral hazard could aggravate cross subsidization from low-risk to high-risk consumers. We construct an inter-temporal model of cross-subsidization from low-risk to high-risk consumers in a price-regulated insurance industry. We analyze the process by which low-risk individuals end up paying more than their actuarial fair premiums to make up for the excess losses generated by high-risk individuals. In a competitive insurance market, the most risky of the low-risk consumers are forced to enter the residual market as their adjusted premium becomes higher than the premium set by the regulator. As a result the size and excess losses of the residual market increase until a new, higher premium is set by the regulator. The model can be applied to similar price-regulated markets in order to make inferences about population movements between risk groups, expected increases in low-risk premiums and the time or level of the next action to be taken by the regulator.

Keywords: Price Regulation, Assigned Risk Pool, Insurance, Moral Hazard, Loss Models.