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Diagnostic Uncertainty and Insurance
in Credence-Goods-Markets

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Extended Abstract

Credence-goods-markets are characterized by asymmetric information between sellers and consumers that may give rise to inefficiencies, such as under- and overtreatment, overcharging, or even market breakdown. Credence-goods-markets are of huge importance, e.g., healthcare expenditures accounted in 2016 on average for 9% of GDP across OECD-countries. Hence, investigating them is important for consumers, politicians, regulators and the society in general. While certain aspects of the institutional environment in credence-goods-markets such as liability, verifiability, reputation, and competition between sellers have been studied in the literature, there exists limited evidence on the role of insurance protection. Moreover, very little is known about the role of diagnostic uncertainty, and how altruistic preferences shape behavior in credence-goods-markets.

Therefore, we offer a theoretical model, which considers a typical credence-goods-market with several major extensions: (I) We incorporate situations where sellers are able to perfectly diagnose the quality that consumers needs and situations where the diagnosis entails some uncertainty. Additionally, in some situations, sellers are able to make a costly investment to receive more precise information about the quality the consumer needs. (II) We add an insurance coverage for the consumers, which varies between no-insurance and full-insurance (meaning that all treatment costs are covered by the insurance). (III) We consider sellers’ altruistic preferences. The theoretical predictions are tested in a lab experiment, where the main outcomes of interest are the consumers’ choice on whether or not to enter the market, fraudulent behavior by sellers (undertreatment and overtreatment), and total realized welfare.

Preliminary experimental results (264 observations) are in line with the theoretical predictions: (i) Consumers enter the markets at very high rates, which are significantly higher in case of insurance. (ii) Experts are significantly more likely to overtreat consumers in the presence of insurance. (iii) Overtreatment rates are higher, the less precise the signal about
the consumer’s problem. Interestingly, when analyzing the interaction between uncertainty and insurance, we find that higher uncertainty together with insurance increase overtreatment. (iv) When sellers are given the possibility to invest in a more precise signal, they invest less if the consumer is insured. The reason is that insurance leads to more frequent overtreatment, in which case investments only decrease a seller’s payoff. This is especially true for less altruistic sellers. Hence, altruism moderates the effect of insurance on costly investments in diagnostic precision. (v) Undertreatment rates are low, and independent of the signal precision and insurance regime.

Thus, we confirm previous results on behavior with insurance in credence-goods-markets. Moreover, we provide first evidence that uncertainty about the consumers problem and its interaction with insurance play an important role, especially in determining the extent of overtreatment. The results of this study can help to inform policy on how various factors shape outcomes in credence-goods-markets. For instance, in the context of healthcare services, our research offers novel insights into the role and significance of diagnostic precision in shaping physician behavior and the resulting health-expenditure, and thereby into the economic and social benefits to be achieved from improving this precision.