

Determinants of Probability Weighting and Probability Neglect: An Experimental Study of the Role of Emotions, Risk Perception, and Personality in Flood Insurance Demand

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Abstract : Individuals often over-weight low probabilities and under-weight moderate to high probabilities, however very low probabilities are either significantly over-weighted or neglected. Little is known about factors affecting probability weighting in Prospect Theory related to emotions specific to risk (anticipatory and anticipated emotions), the threshold of concern, as well as personality traits like locus of control. This study provides these insights by examining factors that influence probability weighting in the context of flood insurance demand in an economic experiment. In particular, we focus on determinants of flood probability neglect to provide recommendations for improved risk management. In addition, results obtained using real incentives and no performance-based payments are compared in the experiment with high experimental outcomes. Based on data collected from 1'041 Dutch homeowners, we find that: flood probability neglect is related to anticipated regret, worry and the threshold of concern. Moreover, locus of control and regret affect probabilistic pessimism. Nevertheless, we do not observe strong evidence that incentives influence flood probability neglect nor probability weighting. The results show that low, moderate and high flood probabilities are under-weighted, which is related to framing in the flooding context and the degree of realism respondents attach to high probability property damages. We suggest several policies to overcome psychological factors related to under-weighting flood probabilities to improve flood preparations. These include policies that promote better risk communication to enhance insurance decisions for individuals with a high threshold of concern, and education and information provision to change the behaviour of internal locus of control types as well as people who see insurance as an investment. Multi-year flood insurance may also prevent short-sighted behaviour of people who have a tendency to regret paying for insurance. Moreover, bundling low-probability/high-impact risks with more immediate risks may achieve an overall covered risk which is less likely to be judged as falling below thresholds of concern. These measures could aid the development of a flood insurance market in the Netherlands for which we find to be demand.

Keywords : flood insurance demand, prospect theory, risk perceptions, risk preferences

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