



## Is default risk acceptable when purchasing insurance? Experimental evidence for different probability representations, reasons for default, and framings

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### ABSTRACT

We experimentally analyze consumers' reactions to insurance default risk. Consistent with earlier studies, we find that insurance with default risk is extremely unattractive to most individuals. A considerable fraction of consumers completely refuse to accept any default risk; others ask for large reductions in insurance premiums. These findings are robust against several variations of the setup: probability representations (verbal and numeric), reasons for default (insolvency and claim settlement practices), framing (positively and negatively expressed probability of default), and comparisons between the policy's level of default and that of an alternative (default free and small default risk). The major driver of willingness to pay is level of security concern and decisions are sensitive to the default probability. All other effects on willingness to pay are unsystematic.

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### 1. Introduction

People buy insurance to protect themselves against different kinds of potential losses. However, when deciding to purchase insurance, consumers must keep in mind (or should) that the insurance contract itself might be exposed to the risk of default, i.e., the insurance policy might involve a small probability that the policyholder will not be reimbursed partially or totally by the insurer in case of a loss. Experimental research by Wakker et al. (1997) and Albrecht and Maurer (2000) shows that the awareness of default risk has an influence on consumers' insurance purchase behavior. People dislike insurance contracts that might default when indemnity payments are needed. In their study, Wakker et al. (1997) demonstrate that people demand a greater than 20% premium reduction when facing a 1% default probability. Similar results are reported

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by Albrecht and Maurer (2000), who, in addition, find that the greater the insurer's default risk, the more people will refuse to pay anything at all for such an insurance policy.

This paper tests the robustness of these findings. We analyze consumers' reactions to default risk dependent on the way an insurer's default situation is communicated. Specifically, we examine whether the way the default risk is represented influences reactions to it. Furthermore, we vary the level of default probability and the reasons for default. Finally, we check for framing effects and reference dependence. Most of these factors have not been analyzed previously with respect to their impact on reactions to default risk. We also investigate what actually drives these behaviors.

The factors we analyze are of relevance for managerial decisions and might have policy implications as well. First, we incorporate the realistic feature that policyholders do not have numeric information on the probability of default. Rating agencies usually provide only a verbal explanation of an insurer's financial situation. In principle, the insured can obtain numeric information, but doing so involves the considerable effort of working through empirical studies, e.g., annual default reports provided by financial institutions and rating agencies (see, e.g., Standard and Poor's, A.M. Best, and Moody's). A few studies suggest that being given verbal probabilities will have a very different impact on behavior than being provided with numeric probabilities. For example, Wallsten, Budescu, and Zwick (1993) show that individuals exhibit greater overconfidence when provided with verbally expressed probabilities. In Budescu, Weinberg, and Wallsten (1988) study of bidding behavior, bids made under the influence of verbal probabilities turned out to be less optimal than those based on numeric ones. Subjects would have earned about 24% less under the verbal than under the numeric condition.<sup>1</sup> We therefore analyze the effects of *verbal* and *numeric* probabilities on the willingness to pay for insurance with default risk.

Second, we examine the effect of *positive* and *negative framing* of default risk, i.e., whether default described in terms of *nonpayment* of claims has a different effect on purchase decisions than default described in terms of *payment* of claims. The way default risk is framed might direct consumers' attention toward the potential occurrence or nonoccurrence of default and thus might affect their decision making (see, e.g., Teigen and Brun (1999) for the effects of positive and negative phrases on decision making). Furthermore, there is wide evidence that individuals put different weights on small and high probabilities (see, e.g., Kahneman & Tversky, 1979). Thus, the choice of high positive and low negative probabilities for the description of default risk might affect policyholders' reaction to the risk.

Third, Tversky and Kahneman (1981) show that a change in reference point can lead to a reversal of individual preferences. Similarly, the choice of a reference alternative (or the status quo) can have a major impact on individuals' decisions (see Burmeister & Schade, 2007; McKenzie, Liersch, & Finkelstein, 2006; Samuelson & Zeckhauser, 1988). We analyze whether the willingness to pay for a specific insurance contract is influenced by information provided about the default risk and price of another, concurrently available contract.

Fourth, there are reasons other than the insurer's insolvency that may result in a total or partial default in paying claims (see Doherty and Schlesinger (1990, pp. 243–244), Kahneman and Tversky (1979, p. 270) and Wakker et al. (1997, pp. 7–8)). One prominent example is the recent "wind-water controversy" in respect to hurricane losses. Victims of Hurricane Katrina have been very disappointed about the unexpectedly low indemnity payments they received for repairing or rebuilding their damaged houses. They were not aware of the fact that a standard homeowner policy in the US covers losses caused by fire, hail, winter storms, tornadoes and wind damage but not from rising water due to floods and hurricanes (see Kunreuther (2006, p. 3)). Another highly relevant source of default risk is nonpayment due to the insurer's claim settlement practices, something that has not been investigated in the literature to date. Specifically, claim settlement practices<sup>2</sup> have to do with the insurer's *willingness* to meet its financial obligation rather than its *ability* to do so. It is unclear whether consumers will react in the same way to different reasons for default because each type of default may evoke different emotions (see Kunreuther et al. (2002)).<sup>3</sup> For example, individuals are likely to be more *angry* about a default based on claim settlement practices, than they are about one due to insolvency as they may believe that insolvency is something beyond the insurer's control. Affect regarding the insured object have been shown to have an impact on insurance decisions – affect regarding the reason for default might have an effect, too (Hsee & Kunreuther, 2000; Slovic, Finucane, Peters, & MacGregor, 2001).

To analyze consumer reactions to insurance default risk we conduct three experiments. The main aim of Experiment 1 is to examine the impact of probability representation and reasons for default on the willingness to pay for household insurance involving different levels of default risk. In this first experiment, the reference insurance is default free. Experiment 2 is designed to test whether the results of Experiment 1 hold when the reference insurance contains a small probability of default. Finally, Experiment 3 examines the effect of positive and negative framing of default risk on willingness to pay.

We find that in the presence of default risk, individuals either refuse to purchase insurance or they demand a considerable reduction in insurance premiums and are willing to pay a substantial loading on the expected claims to avoid such risk. These behaviors are observed over a variety of situations and, except for the level of default risk, the factors analyzed in

<sup>1</sup> See also González-Vallejo, Erev, and Wallsten (1994), Olsen and Budescu (1997), and Teigen (2001) for the different impact of verbal and numeric probabilities on individuals' behavior.

<sup>2</sup> Several market research studies on insurance company reputation reveal that individuals do consider claim settlement practices in their insurance purchase decisions (e.g., Eccles & Vollbracht, 2006; Schlesinger & Schulenburg, 1994). Further, rating agencies explicitly include the willingness of the "obligor to meet its financial commitments as they come due" (Standard, 2008) in some of their rating definitions.

<sup>3</sup> A simpler way to look at this potential effect can be derived from several experiments on decision making. Many authors have shown that "context" matters, e.g., Brun and Teigen (1988), Budescu and Wallsten (1985), Hershey and Shoemaker (1980), Johnson, Hershey, Meszaros, and Kunreuther (1993), Kahn and Sarin (1988), Kahneman and Tversky (1979), Wallsten, Fillenbaum, and Cox (1986), and Weber and Hilton (1990).

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