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The Role of Emotions

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Behavioral Economics of Multiperiod Insurance Purchasing Behavior

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ABSTRACT

Consumers face many risky situations that can severely impact their wealth or health from one year to the next. People sometimes behave in inconsistent ways in such settings; many individuals faced with these risks do not consider purchasing insurance until after suffering a loss, but then they may cancel their policy a few years later if they have not had a claim (Kunreuther, Pauly, and McMorro 2013). Our interest is in why a consumer, having decided whether or not to purchase insurance for a particular year, might change that decision over time – even if the person’s risk and insurance premium remain exactly the same every year in the future. In some circumstances (fire insurance, life insurance), many people renew their policies year after year in ways consistent with relevant tradeoffs that consider the likelihood and consequences of a particular risk in relation to the cost of the insurance. If these individuals make decisions systematically, they should not change their insurance decision over time if the probability, the premiums, and the consequences from the risk remain the same from year to year. However, we find that a significant number of people are swayed by their emotions and past experiences when making their future insurance decisions. This behavior is particularly common for

risks that are classified as low-probability, high-consequence (LP-HC) events. Because consumers' knowledge is incomplete, ambiguous, and biased by recent experience, they may rely on their intuition to decide whether to buy, keep, drop, or change the extent of their insurance coverage. Potential buyers may not face an identical set of circumstances year after year. Loss probabilities may change over time (for example, due to global warming, build-up of earthquake stresses, or onset of a chronic health condition). Buyers may be confused about whether experiencing a major loss tells them something about future probabilities, even if they are explicitly informed as to the potential damage from a future low probability event. Having suffered a personal loss may affect how the person feels about next year's coverage. The interplay between changing expectations about next period's risk and willingness to buy insurance can, in theory and in practice, affect buyer behavior in many different ways.

1

Introduction

Consumers face many risky situations that can severely impact their wealth or health from one year to the next. For example, if one owns a house, there is a risk that it may be flooded or burn down in the coming year. That risk persists into future time periods if one continues to own the property, including instances where the house is damaged and is restored to its former condition, but then could be damaged again. Another example of risk is that of chronic illness that may require hospitalization or other costly treatment over periods of time. People sometimes behave in inconsistent ways in such settings; many individuals faced with these risks do not consider purchasing insurance until after suffering a loss, but then they may cancel their policy a few years later if they have not had a claim (Kunreuther, Pauly, and McMorrow, 2013).

Our interest is in why a consumer, having decided whether or not to purchase insurance for a particular year, might change that decision over time—even if the person’s risk and insurance premium remain exactly the same every year in the future. We will be addressing the following questions:

- Will individuals maintain their current insured or uninsured status from one year to the next regardless of what happens to them?

- Will they change by modifying their coverage over time if they are insured?
- Will those individuals who decided not to buy insurance against this risk remain uninsured or purchase insurance in the future?
- Will individuals who currently buy limited coverage choose to buy more comprehensive but more costly insurance in the future?
- Will individuals' decisions on whether to purchase insurance in the next period depend on whether or not they had a loss this time period?

In some circumstances (fire insurance, life insurance), many people renew their policies year after year in ways consistent with relevant tradeoffs that consider the likelihood and consequences of a particular risk in relation to the cost of the insurance. If these individuals make decisions systematically, they should not change their insurance decision over time if the probability, the premiums, and the consequences from the risk remain the same from year to year.

However, we find that a significant number of people are swayed by their emotions and past experiences when making their future insurance decisions. This behavior is particularly common for risks that have a very small annual chance of occurring but carry large impacts. These are risks that are classified as low-probability, high-consequence (LP-HC) events. Because consumers' knowledge is incomplete, ambiguous, and biased by recent experience, they may rely on their intuition to decide whether to buy, keep, drop, or change the extent of their insurance coverage.

Potential buyers may not face an identical set of circumstances year after year. Loss probabilities may change over time (for example, due to global warming, build-up of earthquake stresses, or onset of a chronic health condition). Buyers may be confused about whether experiencing a major loss tells them something about future probabilities, even if they are explicitly informed as to the potential damage from a future low probability event. Having suffered a personal loss may affect how the person feels about next year's coverage. The interplay between

changing expectations about next period's risk and willingness to buy insurance can, in theory and in practice, affect buyer behavior in many different ways.

1.1 Purpose of this monograph

This monograph addresses the question of how potential insurance buyers make decisions like these by considering the conceptual and empirical evidence that address the following theoretical and behavioral issues:

- (1) The extent that consumers tend to follow the multiperiod decision rules based on expected utility $[E(U)]$ maximization
- (2) The factors that influence their choices when they do not behave as if they are maximizing $E(U)$

Prior studies reveal that insurance purchasing and risk mitigation behavior varies by the type of risk, market structure and individual preferences and thought processes (Kunreuther, Pauly, and McMorro, 2013). Our principal contribution in this monograph is to demonstrate that emotions play a role in predicting departures from $E(U)$ maximization for making insurance purchasing decisions over time. We highlight the conceptual issues and alternative theories of behavior about repeat insurance purchasing over time and the empirical literature on the proportion of consumers that buy coverage after loss-producing events only to cancel their insurance as those events become more distant in time.

The monograph then details the findings from novel web-based experiments that seek to determine whether people change their insurance decisions after experiencing a loss when offered a relatively high, medium or low premium relative to the expected loss. Some subjects in our experiments are asked to choose between buying and not buying insurance against hurricane damage. Others have the choice of purchasing a high- or low-deductible health insurance policy. These experiments provide data that enable us to explore the role that past experience and emotions play in future decisions when an uninsured individual

suffers a large loss or when an insured individual does not suffer any loss over time and hence does not file any claims. We use a Likert scale to measure how unhappy or glad they feel about their insurance decision after learning whether or not they incurred a loss or suffered an illness.

The E(U) maximization model implies that for any specified insurance premium and the risk associated with experiencing a loss, consumers should purchase insurance if their expected utility of having some coverage exceeds their expected utility of being uninsured. If consumers have a clear idea of the size of the financial loss should an adverse event occur, the key parameter influencing their decision is their perceived likelihood that a loss will occur in a given period. The lower the consumer's subjective estimate of the probability of a loss, the less likely he or she will want to purchase insurance at a given premium.

However, a relevant question is how consumers determine their perceived probability of a loss next-period from an adverse event. In some instances there is sufficient historical and/or scientific data for a person to estimate this probability with some confidence. But for low probability events, data at hand or stored in recent memory is rare; the consumer is likely to rely in some way on personal experience and their perceptions of events or non-events to estimate the likelihood of damage or adversity in the future. Moreover, the emotions generated by a negative outcome in one period (either experiencing an uninsured loss or paying a premium and not having a loss) may color future probability estimates of an adverse event.

For example, if a person experiences a damaging flood that is estimated to have an annual probability of 1-in-100, will that individual believe that it will not occur again for another 100 years? Or will the person think that it is more likely for the flood to occur next year than he or she perceived at the beginning of the previous year? And will this estimate depend on whether the individual suffered a loss and was insured or uninsured for damages? It is this process of potentially updating probabilities of future losses based on recent events that can lead to errors in decision-making, especially if events are relatively uncommon and external data or information to temper emotions and guesses is hard to obtain.

1.2 Outline of sections

In what follows, we explore ways in which consumers' decisions on whether to purchase insurance is not consistent with $E(U)$ maximization. Section 2 reviews the empirical evidence on deviations from rational thinking, especially as they relate to choices about repeated purchase over time. We also discuss the interplay between cognitive biases generated by intuitive thinking and emotions in changing insurance purchase decisions over time. Section 3 details an experiment in the context of hypothetical hurricane damage where individuals are told that loss probabilities and premiums remain the same from period to period. They are asked whether they want to purchase insurance to cover their entire loss or remain uninsured. We find that uninsured individuals who suffer a hurricane loss and feel very badly about this outcome are more likely to purchase insurance coverage in the next period than uninsured individuals who suffered a loss but do not feel badly about the outcome.

Section 4 details an experiment where participants must choose between high-deductible health insurance at a given premium and low-deductible health insurance at a higher premium, and explores whether they will switch from one policy to the other over time. While most people do not change their decisions, a sizeable minority do. The most common trigger for change is a loss not covered at all or only partially covered by insurance, coupled with a strong negative emotional response to that loss. Section 5 draws together our findings, provides guiding principles of insurance and provides recommendations for public-private partnerships to address the cognitive biases noted in Section 2 via a behavioral risk audit that encourages more deliberative thinking with respect to insurance-related choices.

The implications of these findings—that some consumers behave in ways that are consistent with expected utility theory but many are not, with emotions providing part of the explanation—are potentially important for insurers and other key stakeholders, such as financial institutions, real estate agents and developers concerned with reducing future losses. Of course, an important rationale for undertaking these experiments is that there is considerable interest in understanding the

factors influencing behavior with respect to protecting oneself against low-probability, high-consequence events.

The most obvious policy implication of our finding that feelings matter when making choices is that there may be a role for the public sector to play in influencing or even over-riding choices people make in response to emotions. However, as economists trained to respect the value of consumer choices even when we and many others would want them to be different, we realize that we must be modest in making recommendations. Insurance firms also want to know more about their customers, but they too are somewhat conflicted—from a statesmanlike industry viewpoint they want buyers to make informed and deliberative decisions, but as individual firms they will benefit when consumers choose their product for whatever reason.

Ultimately we leave it up to readers to make their own subjective judgments about which choices they are willing to leave to the insurance market and its customers, and which ones they think might be subject to public review. But, whatever decisions are made about the acceptability of emotion-influenced preferences, knowing how common various behaviors are in practice—our goal in this work—should help those decisions to be made more carefully and systematically.

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