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Demand for Multi-Year Insurance: Experimental Evidence

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Do individuals prefer a fixed-price multi-year insurance (MYI) policy to current annual contracts with fluctuating prices? This question is addressed through a web-based experiment with 445 adults to determine demand for such a multi-year contract with significant real money at stake. In a repeated 2-period game, individuals have an opportunity to purchase one-period insurance contracts, two-period contracts or no insurance against the risk of a hurricane causing damage to their property. When premiums for both insurance options are actuarially fair, we find that more than five times as many people favor the 2-period contract over the 1-period one. The demand for a 2-period contract remains high even when it has a loading cost of 5 percent and 10 percent and the 1-period premium is actuarially fair. Given the lack of insurance purchase for catastrophe risks observed in empirically studies, these findings support the development of new and more attractive contracts.

Key words: individual decision-making; choice under uncertainty; multi-year insurance; disaster

I. Introduction

Insurance premiums on annual property insurance policies often increase significantly following natural disasters such as major hurricanes, floods and earthquakes. Consider what happened in the aftermath of the seven major hurricanes that hit the U.S. coast in 2004 and 2005: the average homeowner's premium in the state of Florida increased from $723 in 2002 to $1,465 in 2007. In coastal areas, some insurers were permitted by regulators to triple or even quadruple their premiums for some homeowners after 2005 (Kunreuther and Michel-Kerjan, 2011). [2]

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[2] This was partly due to higher reinsurance prices covering catastrophe losses and the upward revision of risk by catastrophe modelers to reflect changes in their estimates of the likelihood and consequences of future disasters. For example, following Hurricane Katrina in 2005 the price of catastrophe risk reinsurance for Florida-based

Residents in hazard prone areas often question why insurance companies, which are viewed as experts in risk assessment, increase their rates so dramatically following a disaster. They believe pre-disaster premiums already reflected the likelihood of claims arising from such an untoward event, so it should not change after the event occurs. Many residents are also concerned as to whether they will still have access to insurance coverage against these risks from their insurer in the future, and for good reason. Following Hurricane Andrew in Florida in 1992 insurers threatened to discontinue homeowners' policies in that state but then were required by state legislation not to cancel coverage for more than ten percent of their pre-disaster policyholders (Lecomte and Gahagan, 1998). Following the Northridge earthquake of 1994, insurers indicated that they would not continue to market earthquake coverage in California, which led to the formation of a state-operated insurer, the California Earthquake Authority (Roth, 1998). Insurers also stopped providing commercial coverage against losses from terrorist attacks in 45 states in the United States after September 11, 2001. As a result, President George W. Bush signed the Terrorism Risk Insurance Act of 2002, which required insurers to offer this coverage to all their commercial clients and provide free up-front reinsurance to those insurers to make terrorism coverage less expensive and more widely available (Kunreuther and Michel-Kerjan, 2004).

Similarly, after the 2004 and 2005 hurricane seasons many residential insurers did not renew coverage for many of their policyholders in coastal regions (Klein, 2007). While most of those residents were able to find coverage with other insurers, the new contract typically was more expensive and had a higher deductible (Vitelo, 2007). Others could not obtain coverage at a reasonable price from the private market and had to purchase coverage from state insurance pools which play the role of insurers of last resort and which grew significantly after the 2004 and 2005 hurricane seasons (Grace and Klein, 2009).

Even after the spate of recent catastrophes many homeowners do not have adequate coverage against natural disasters. The U.S. Department of Housing and Urban Development revealed that 41 percent of homes damaged by the 2005 Hurricanes, Katrina, Rita and Wilma, were uninsured or underinsured. Of the 60,196 owner-occupied homes with severe wind damage from these hurricanes, 23,000 did not have insurance against wind loss (U.S. Government Accountability Office, 2007). Kriesel and Landry (2004) and Dixon et al. (2006) found that only about half of the homes in high-risk areas had flood insurance. In California,

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insurers more than doubled. Moreover, there was an upward revision in the likelihood and consequences of damage from hurricanes by the three leading modeling companies—AIR Worldwide, EQECAT and Risk Management Solutions (Kunreuther and Michel-Kerjan, 2011).

despite the well-recognized risk of earthquake, only 12 percent of homeowners had coverage against earthquake damage at the end of 2010 (California Department of Insurance, 2011). Evidence shows that only after suffering losses did uninsured homeowners say they should have purchased coverage (Kunreuther, Meyer and Michel-Kerjan, in press).

A principal reason for this lack of coverage is that many residents who once purchased catastrophe insurance let their annual policy lapse. Flood insurance in the United States provides a vivid illustration. This coverage has been provided by the federally-run National Flood Insurance Program (NFIP) since its creation in 1968. A recent analysis of all new policies issued by the NFIP from January 1, 2001 to December 31, 2009 revealed that the median length of time before these new policies lapsed is only 3 to 4 years. On average, only 74 percent of new policies were still in force 1 year after they were purchased; after 5 years, only 36 percent were still in place. The lapse rate is high even after correcting for migration and does not vary much across flood zones (Michel-Kerjan and Kunreuther, 2011; Michel-Kerjan, Lemoyne de Forges and Kunreuther, 2012).

To address the above concerns both on the supply and demand sides, private and public insurers may wish to consider adding a fixed-price multi-year insurance (MYI) option to the annual contracts they offer to their clients. It is somewhat surprising that MYI contracts to cover property damage have not yet been proposed in the United States or in Europe, the world largest insurance markets.[3] Insurers do offer multi-year life insurance contracts: term-life policies are typically offered with premiums "locked in" for five to ten years; buyers can choose whether they want to pay extra for such guarantees over annual contracts knowing that they may drop coverage at any time. Policyholders are then certain what their life insurance premiums will be over the next five or ten years, regardless of what happens to their health or the overall mortality rate of their insurer's portfolio.

Hendel and Lizzeri (2003) examine 150 term-life insurance contracts, some of which have fixed premiums for 5, 10 or 20 years while others are 1-year renewable policies. They show that on average, the extra prepayment of premiums to protect consumers against being reclassified into a higher risk category for a fixed period of time is more costly over the total period of coverage than a series of annual term policies that can be renewed but where premiums may fluctuate from year to year. Still, people buy these multi-year fixed-price life

[3] Mooney (2001) reports that in several Asian countries, homeowners' policies are written for longer terms than one year. In some cases, the policy is written for the life of the mortgage. The premium for the full life of the mortgage is discounted and paid up front as an incremental cost to the mortgage.

insurance policies, indicating that they view the stability of premiums as an important attribute in their utility function and are willing to pay more for it.

This paper addresses the question as to the nature of the demand for multi-year property insurance when individuals are offered a choice between 1-period and 2-period contracts with premiums reflecting risk. We are also interested in whether loss experience, risk attitudes, and socio-economic characteristics such as age, gender and income, impact on the insurance purchase decision.

The paper is organized as follows. **Section 2** provides an example of a multi-year contract with a 2-period insurance model for determining premiums that an insurer would charge if it were offering 1- or 2-period contracts. **Section 3** describes a web-based experiment we undertook in the United States to determine the demand for insurance under different periods of contractual arrangements. Participants had the opportunity to earn a significant amount of money. Winners were selected using several games of the Pennsylvania Lottery. **Section 4** introduces testable hypotheses building on existing literature that are then examined in **Section 5** using choice data from 445 adult individuals who participated in the experiment. **Section 6** discusses the market and policy implications of these findings.

We find a significant demand for MYI. The ratio of individuals choosing the fixed-price 2-period insurance policy over a 1-period contract was greater than 5 to 1. Notably, the demand for MYI remains higher than for 1-period contracts even when the premium for a 2-period contract is priced 5 percent and 10 percent above the actuarially fair price and the 1-period premium is actuarially fair. Our findings also show that the overall demand for insurance (i.e., the combined demand for 1-period and 2-period contracts) increases when insurers offer both types of contracts at the same time rather than just 1-period policies. Finally, those who are more risk averse are more likely to purchase 2-period rather than 1-period policies.

2. A Two-Period Insurance Model

Jaffee, Kunreuther and Michel-Kerjan (2010) developed a 2-period insurance contract model with premiums reflecting risk in a competitive market where insurers are homogenous and risk neutral. In their model, each insurer offers 1- and 2-period policies where premiums reflect the expected loss in each period. Identical homeowners have the option of not purchasing insurance, buying 1-period contracts in either period 1 and/or period 2, or purchasing a fixed-price 2-period contract for full coverage against the potential loss (i.e., no deductible). Their specification is such that the homeowner can cancel a 2-period contract at the end of period 1 at a pre-specified cost so that the insurer breaks even. There is also a given probability that the insurer will cancel a 1-period policy at the end of the first period if a disaster occurs (in which case the homeowner would incur a search cost to find another insurer in period 2). Insurers also incur extra marketing costs for two 1-period contracts than if they offered a 2-period contract.

Our experiment is based on a simplified version of the Jaffee et al. model. First, we assume no marketing costs incurred by insurers. Second, if an individual purchases a 2-period insurance contract at the beginning of period 1, s/he cannot cancel it and thus remains covered for both periods. At the beginning of period 1, experts provide a single estimate of the probability of a disaster occurring in period 1 but are uncertain as to whether there is a high (H) or low (L) probability of a disaster in period 2. At the end of period 1, insurers and consumers both learn whether the probability of a disaster in period 2 is high (H) or low (L) (noted p_{2H} and p_{2L}, respectively). We assume that insurers revise their risk estimates upwards for period 2 only if they have suffered a major loss in period 1.

Notation

Z_1 = insurance premium in period 1 for a 1-period policy, determined at the beginning of period 1

Z_2 = insurance premium in period 2 for a 1-period policy, determined at the beginning of period 2

Z(MYI) = fixed insurance premium per period for MYI coverage determined at the beginning of period 1

D = insured damage if a disaster occurs

p_1 = probability of D in period 1

p_{2H} = high probability of D in period 2

p_{2L} = low probability of D in period 2

a = weight placed by experts in period 1 on the likelihood of p_{2L} in period 2. We therefore assume that $p_2 = a\, p_{2L} + (1-a)\, p_{2H}$

Premiums Charged by Insurer

Based on the above notation we can determine the premiums charged by insurers for 1-period and 2-period insurance policies. For 1-period contracts, we have:

$$Z_1 = p_1 D \quad (1a)$$

$$Z_{2L} = p_{2L} D \text{ with likelihood } a \quad (1b)$$

$$Z_{2H} = p_{2H} D \text{ with likelihood } (1-a) \quad (1c)$$

For fixed price 2-period contracts the premium charged by the insurer for each period is:

$$Z(\text{2-period}) = ½(1+\lambda)\{ [p_1 D + a\, p_{2L} D + (1-a)\, p_{2H} D]\} \quad (2)$$

where λ is a loading factor to reflect the marketing and administrative costs an insurer incurs in selling a policy and the cost of holding liquid capital to cover catastrophic losses should a disaster occur in both periods 1 and 2. This loading can also compensate the insurer for the uncertainty about the possible change in the probability of suffering a loss in period 2.

3. Experimental Design

Stimulus

The experiment consists of 30 consecutive games, each game comprised of two periods. The occurrence of a disaster in period 1 increases the estimated probability of a similar disaster in period 2. At the end of period 1, insurers use this information to update their probability estimates and recalculate the premiums they will charge in period 2.

Participants in the experiment were asked to imagine that they owned a house for two periods and wanted to sell it at the end of period 2. At the beginning of period 1 the house is worth 100,000 talers (a fictitious currency). A subject's total initial assets are the value of the house plus 5,000 talers in cash that s/he receives at the beginning of period 1 so s/he can purchase insurance.

There is a chance that a major hurricane will occur in one or both periods. If a hurricane occurs, the house will suffer a loss in value of 50,000 talers unless the subject has purchased insurance for that period, in which case s/he will be fully reimbursed by the insurer for the loss. The subject's house will then be immediately rebuilt so it has a value of 100,000 talers. If s/he had not purchased insurance and a hurricane occurred during the period, the value of the house will decrease by 50,000 talers. The amount of the participant's virtual bank account at the end of period 2 will be the value of the house at the end of period 2 plus 5,000 talers received at the beginning of the game, minus any insurance premiums paid in any of the two periods.

Subjects are told that experts estimate the likelihood of a hurricane occurring in period 1 to be 1 in 25 (i.e. p_1=4%). If no hurricane occurs in period 1, subjects know that experts still estimate the chances of a hurricane striking in period 2 at 1 in 25 (i.e. $p_2=p_{2L}=p_1$=4%). Subjects also know that if a hurricane occurs in period 1, experts will revise their estimate of the likelihood of a hurricane in period 2 to be 1 in 20 (that is, $p_2=p_{2H}$=5%) and the insurance cost will increase adequately. In other words, the occurrence of a hurricane in period 1 is interpreted as a signal that the likelihood of a future hurricane has increased.

If a decision was made to purchase 2-period insurance at the beginning of period 1, then the participants do not make another decision at the beginning of period 2. If no insurance or a 1-period contract has been purchased at the beginning of period 1, the subject will have to make another decision as to whether s/he wants to buy a 1-period insurance policy at the beginning of period 2. After making their decision for period 1, subjects are shown on their computer screen whether a hurricane occurred in period 1 and the amount in their virtual bank account. At the end of period 2 they are shown whether a hurricane occurred in period 2 and the amount in their virtual bank account at the end of period 2.

After the initial 2-period game is played, a new 2-period game begins with exactly the same rules. Subjects play 30 independent 2-period games in a row. There is thus no accumulation of wealth across games, which avoids income effects. Repeating the same game also allows us to determine how demand for 1-period and 2-period insurance contracts evolves over time and whether it changes, if at all, following the occurrence of a hurricane. A graphical representation of this timeline is provided in Figure 1.

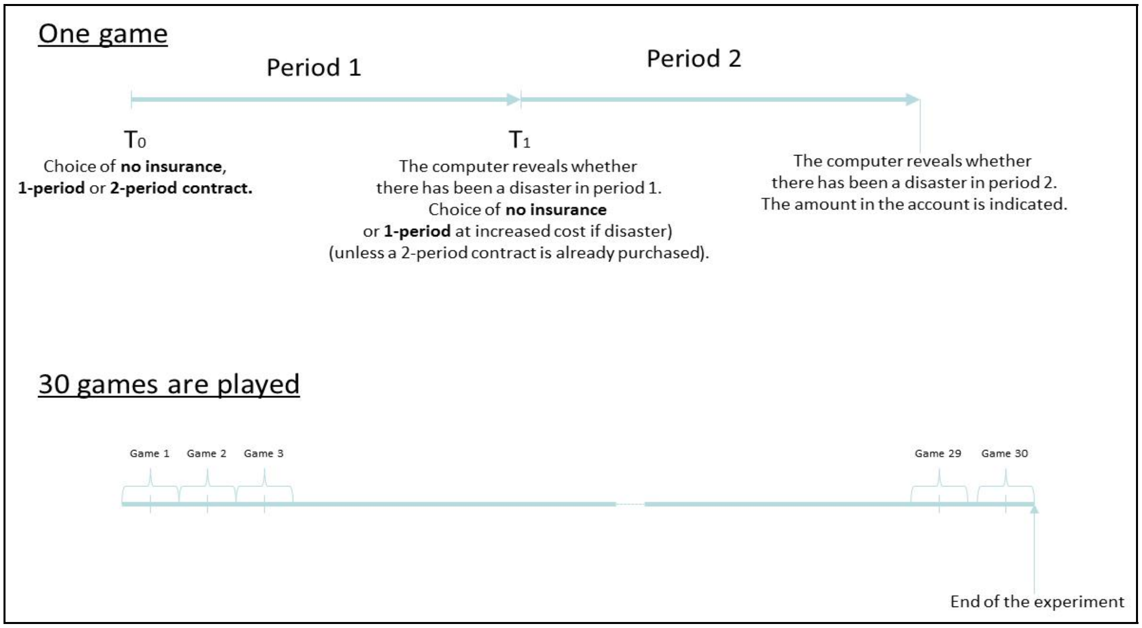

Figure 1. Graphical Representation of the Experiment

We investigate four different treatments, each treatment having two distinct scenarios as to when hurricanes occurred over the 30-game experiment. There were thus eight conditions with each participant randomly assigned to one of them.

- In **treatment 1**, subjects are offered only 1-period contracts at actuarially fair prices given by equations (1a), (1b) and (1c). The participant needs only to decide whether or not to buy 1-period insurance.
- In **treatment 2**, subjects are offered 1- and 2-period insurance contracts at actuarially fair prices.
- **Treatments 3 and 4** are similar in design to treatment 2 in that subjects are still offered 1-period insurance contracts at actuarially fair prices, but the price of the 2-period insurance contract is increased by 5 percent (treatment 3) and 10 percent (treatment 4). So in treatments 2, 3 and 4, subjects must decide whether to purchase 1-period insurance, 2-period insurance or decline to buy insurance.
- **Treatments 1*, 2*, 3*, and 4*** are similar to treatments 1, 2, 3 and 4, respectively, but with a different hurricane sequence. In the hurricane sequence used for treatments 1-4 two hurricanes occur early (game 5, period 1; game 10, period 2) with a third hurricane occurring in game 21, period 1. In treatments 1* to 4*, the first hurricane occurs late in the sequence (game 19, period 1) with a second hurricane occurring in game 28, period 1.

Undertaking the experiment with a different hurricane sequence allows us to determine whether our findings are influenced by a given sequence. These two hurricane sequences were randomly generated before subjects started playing the game, rather than during the experiment itself, so that the order in which catastrophes occurred was the same for all participants of one treatment.

The experiment was conducted on a web-based platform with 500 adult subjects in the United States whose demographics are representative of the US population. There were 99, 55, 46, and 50 subjects who participated in treatments 1, 2, 3, and 4, respectively (total of 250) and 102, 46, 44, and 58 subjects who took part in treatments 1*, 2*, 3*, and 4*, respectively (total of 250). Before a subject started the 30 games, s/he was asked a series of four questions to make sure that s/he understood the nature of the experiment and the impact of a specific insurance decision on the asset level at the end of periods 1 and 2. Subjects who did not answer a question correctly were directed to read the instructions again. Several subjects gave wrong answer to three or four of these test questions and were excluded from our sample when we analyzed the responses. Our analysis for treatments 1, 2, 3, and 4 had 91, 51, 42 and 45 valid responses, respectively. Treatments 1*, 2*, 3*, and 4*, had 93, 38, 36 and 49 valid responses, respectively. Our experiment is thus based on responses from these 445 individuals.

We were also interested in the role that attitudes toward risk played on the decision as to whether to purchase insurance coverage and the preference for 1-period or 2-period contracts for those who decided to buy a policy. To measure their degree of risk aversion, we asked participants at the end of the experiment to make choices between ten paired lotteries following the methodology developed by Holt and Laury (2002). We also asked a series of demographic questions (e.g., age, gender, education, income) (see Appendix 1 for a summary of the demographics).

Pricing of insurance contracts

Treatment 1

The 1-period contract premiums in period 1 and period 2 were determined by the expected loss, as defined in equations (1a), (1b) and (1c) in Section 2. A premium of 2,000 talers (1/25* 50,000) was charged for insurance in period 1, and 2,500 talers (1/20 * 50,000) or 2,000 talers (1/25 *50,000) in period 2 depending on whether a hurricane did or did not occur in period 1.

Treatment 2

Based on the above information for the one-period policy, we calculate the 2-period contract premium in **treatment 2** as the weighted average of these numbers [i.e., Z(MYI) as defined by equation (2), with λ=0].

$$Z(\text{2-period}) = \tfrac{1}{2}\{ p_1 D + a\, p_{2L} D + (1-a)\, p_{2H} D\}$$

$$Z(\text{2-period}) = 0.5.\{2{,}000+0.96.2{,}000 + 0.04.2{,}500\} = 2{,}010$$

Treatments 3 and 4

In reality, insurers might charge a higher loading for a 2-period contract than for a 1-period contract because they have to reserve more capital to protect themselves against the risk of not being able to increase premiums in period 2 if a hurricane occurs. We therefore added a 5 percent loading factor (λ=0.05) to the 2-period contract in **treatment 3,** and 10 percent loading factor (λ=0.10) in **treatment 4.** As discussed above, doing so also allows us to test the price sensitivity for the demand for multi-year insurance. Table 1 summarizes the insurance premiums for the eight conditions of the experiment.

Table 1. Period 1 and Period 2 Insurance Premiums for Different Treatments (1-Period and 2-Period Contracts) (in talers)

		Period 1	Period 2 (with no hurricane in period 1)	Period 2 (with a hurricane in period 1)
Treatments 1 and 1* Menu: actuarially-fair-priced 1-period contracts only	*1-period*	2,000	2,000	2,500
Treatments 2 and 2* Menu: actuarially-fair-priced 1-period and 2-period contracts	*1-period*	2,000	2,000	2,500
	2-period	2,010	Not-available	Not-available
Treatments 3 and 3* Menu: actuarially-fair-priced 1-period contracts and 5%-loaded 2-period contracts	*1-period*	2,000	2,000	2,500
	2o-period	2,110	Not-available	Not-available
Treatments 4 and 4* Menu: actuarially-fair-priced 1-period contracts and 10%-loaded 2-period contracts	*1-period*	2,000	2,000	2,500
	2-period	2,210	Not-available	Not-available

Selection of the Winners and Payment of Subjects

All subjects received a participation fee of $5 for taking part in the experiment. (The experiment took on average about one-half an hour to complete) In addition, subjects knew that after the experiment was completed, 1 of every 100 participants would be randomly selected for a payoff based on one of the 30 games. This random problem-selection mechanism provides incentives for respondents to play each game seriously.[4]

To select the winners, each of the participants was assigned a unique number from 00 to 99 and a letter (A, B, C, D, E). For example, subject number 234 would be assigned the letter C (third series of 100 participants) and the number 34. For each series A, B, C, D, E of 100 participants, we utilized the result of a pre-defined game of the Pennsylvania Lottery: the "Daily Number" game. We would consider the first two digits of the winning number of the evening drawing: this would give us a number from 00 to 99.

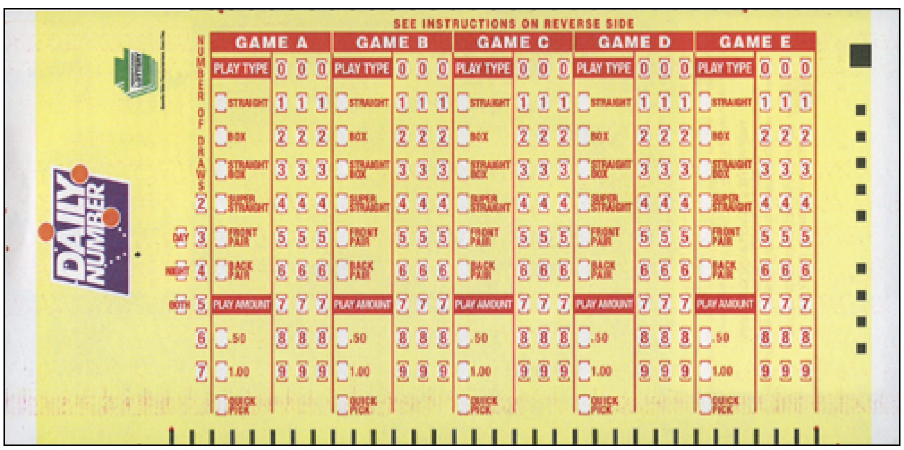

Figure 2. Selection of the winner for each one of the 100 participant series through the Pennsylvania Lottery's *Daily Number* mid-day game.

We used the website of the Pennsylvania Lottery to select the winning game. "Treasure Hunt" has five games from A to E and, for each, draws a number from the range [1,30] (equal to the number of games played in our experiments).

4 We recognize that it is difficult to completely overcome incentive effect in experiments when a single game and one subject is selected for an actual payoff resulting from his or her choices. For more discussion on these challenges see Holt (1986) and Camerer and Hogarth (1999).

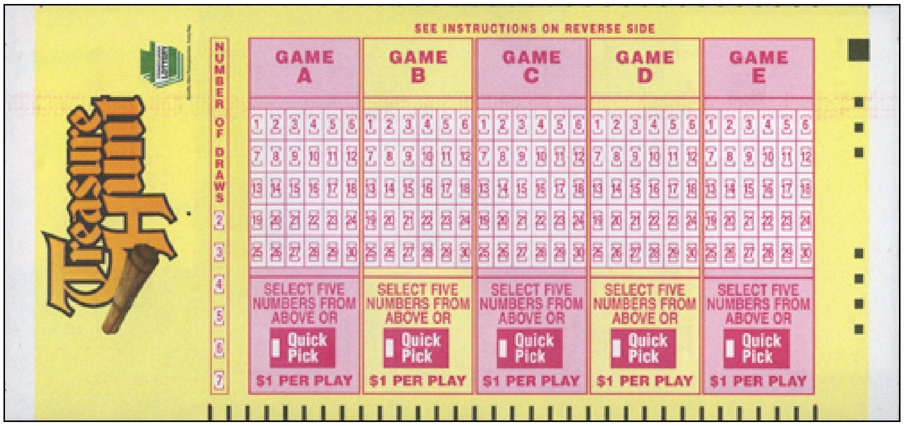

Figure 3. Selection of the winning game through the Pennsylvania Lottery's *Treasury Hunt* mid-day game.

The date of the lottery drawing was known of all participants and coincided with the 2-week anniversary of the end of the experiment. An Internet link to these results was made available to all participants so the selection of the winners and games was transparent and out of our control. The five winners were paid the value of their virtual bank account at the end of period 2 for the selected game in addition to their $5 participation fee. The conversion rate between talers and dollars was 1,000 talers = $5. A person who decided not to purchase any insurance in the selected game and who had not suffered a loss from a hurricane would have a bank account of 100,000 talers (the value of the house), plus 5,000 talers in cash so they have the option to purchase insurance. In this case, a participant could end up with $525, plus the participation fee.

4. Predictions and Related Literature

In this section we specify a set of hypotheses (H) and provide support for each of them by reviewing the relevant literature.

Hypothesis 1. (H1) There will be a significant number of subjects who will not purchase insurance in any of the treatments.

There is empirical evidence that people tend to ignore risks whose subjective odds fall below their threshold level of concern. In controlled laboratory experiments on purchasing insurance against low-probability events, many individuals bid zero for coverage, apparently viewing the probability of a loss as sufficiently small that they were not interested in protecting themselves against it (Slovic et al., 1977; McClelland et al., 1993; Schade et al., 2011).[5] Similarly, many homeowners residing in communities that are potential sites for nuclear waste facilities have a tendency to dismiss the risk as negligible (Oberholzer-Gee, 1998). One reason for this behavior is that individuals assume that "It won't happen to me" – a form of *probability neglect* (Tversky and Shafir, 1992; Kunreuther**,** Novemsky and Kahneman, 2001; Sunstein, 2002). Since the the probability of damage from a hurricane in our experiment is 4 or 5 percent, this heuristic may be utilized by some of the responders.

Hypothesis 2. (H2) Introducing a 2-period contract in the menu of insurance contracts increases the overall demand for insurance.

Some people may feel that the 2-period policy is a bargain if these individuals focus on the higher price they will have to pay to purchase single-period insurance coverage in period 2 of a game in the case there is a hurricane in period 1; they now decide that they will purchase insurance where they might not have if only a 1-period policy were offered. When two types of policies are on the market, some may also feel that an insurer has targeted different groups of consumers. Some will classify themselves as those who like stable premiums over time and purchase a 2-period policy but not single-period insurance.

As a number of empirical studies have demonstrated, people's preferences between two options can depend on the presence, or absence, of a third alternative (Huber, Payne and Puto, 1982; Simonson and Tversky, 1992; Heath and Chatterjee, 1995). The introduction of a 2-period insurance policy into our menu of options may suggest to some individuals that insurance is a more desirable alternative to consider (versus no insurance) than if only a 1-period policy were available. In other words, there may be unobserved heterogeneity in people's preferences in treatment 1 which emerge when both 1- and 2-period policies are offered to participants, as noted by Hutchinson, Kamakura and Lynch (2000).

There is also a literature on how the period of commitment can impact risk-taking decisions. For instance, Langer and Weber (2005) show that a longer commitment period tends to *decrease* risk taking in the context of investment in risky assets where there is a low probability of relatively high losses. Papon (2008) demonstrates specifically that insurance behavior in the context of low-probability high-impact events may depend on the length of the commitment period of insurance policies; i.e., the period during which individuals commit themselves to maintain the identical insurance policy. He finds that individuals are more likely

[5] McClelland, Schulze and Coursey (1993) also found that some subjects were willing to pay a very large premium for insurance coverage against a low-probability, high-consequence event.

to purchase insurance if they commit for a longer period of time and cannot change their decision until the end of the contract.

This finding has particular relevance to our experiment since some individuals might be inclined to think of a game as a 2-period commitment. Introducing a 2-period contract in the menu of options might make this view more salient to them. Those individuals might purchase insurance for both periods while they would not have necessarily done so if they had been more myopic (focusing on each period of the game in turn).

Hypothesis 3. (H3) Subjects are more likely to buy 2-period contracts than 1-period contracts if they are both actuarially priced. Demand for 2-period contracts decreases when the premium increases and the 1-period contract is still actuarially priced, but some individuals will still prefer 2-period contracts over 1-period contracts.

Based on expected utility theory, an individual who is risk-averse prefers a known and certain amount of wealth to a risky situation that yields the same expected wealth. Jaffee et al. (2010) show theoretically that a risk-averse subject who maximizes expected utility always prefers a fixed price 2-period insurance over a variable price 1-period contract when the policies are actuarially fair. Those who are highly risk averse will also prefer a fixed price 2-period contract over a 1-period policy where the premiums can increase significantly in period 2 (Kleindorfer et al., in press). Empirical findings by Hendel and Lizzeri (2003) in the context of demand for term life insurance also indicate a preference for multi-year period contracts, even when priced at a higher cost.

Benartzi and Thaler (1999) show experimentally that individuals decline multiple plays of a given gamble due to myopic loss aversion. However, when they are provided with the resulting distribution of outcomes they will tend to play the gamble multiple times. In the context of this experiment, individuals are provided with information on the likelihood of a hurricane occurring in periods 1 and 2 and the impact the disaster in period 1 will have on the price of insurance in the following period. Given that they are presented with information on the distribution of premiums we would then expect most individuals to purchase a 2-period policy where the premiums are stable over time.

The goal-based model of choice proposed by Krantz and Kunreuther (2007) may provide additional insights as to why individuals may prefer a 2-period insurance policy even when it is priced at 5 percent or 10 percent above the actuarially fair premium. In the context of this experiment, suppose some individuals might have a goal of spending only a limited amount on insurance against hurricane damage to their house over the two periods. The introduction of a 2-period policy with constant premiums may lead them to purchase insurance that fits into their *insurance budget goal* where they would not buy the 1-period policies, because they know that in the next period, the price may increase to an amount that would exceed their budget constraint.

A mental accounting argument would lead to a similar prediction should individuals divide their spending into budget categories. As Thaler (1999) points out, the budgeting process can facilitate making tradeoffs between competing uses of funds and acts as a self-control device. Heath and Soll (1996) divide the process by which such budgeting takes place into two stages: expenses must first be noticed and then assigned to their proper accounts. In this experiment, participants know that the insurance premium can increase significantly in period 2 if there was a hurricane in period 1. If they assume they will want to keep insurance in period 2 if they purchase coverage in period 1, they may prefer a 2-period policy over a 1-period policy because it meets their insurance budget constraint.

Hypothesis 4 (H4). The demand for insurance increases in the game following a disaster and the demand for 2-period insurance increases more than the demand for 1-period insurance.

The literature on learning from past experience is ambivalent in this regard. On the one hand, one has to consider the following *availability heuristic*: people predict the frequency of an event based on how easily an example can be brought to mind (Tversky and Kahneman, 1974). Suffering from a disaster thus makes the risk of similar event occurring in the near future much more salient for the decision maker than it was before it occurred. This implies that there should be increased interest in purchasing insurance after suffering a loss.

On the other hand, empirical research in the laboratory and in casinos indicates some individuals' behaviors are consistent with the *gambler's fallacy* (Croson and Sundali, 2005). One views the likelihood of an event occurring again as a function of its previous occurrence. For the case of those who suffered a hurricane in the last period, the gambler's fallacy implies that they will view the likelihood of it occurring in the next period to be much lower than the stated probability for this experiment of 1 in 20 (a form of "it already happened" bias). Those who exhibit this bias will be unlikely to purchase insurance next period.

While it is not clear *a priori* which of the two effects will be more important, findings from the disaster literature indicate that the demand for insurance often increases immediately after a catastrophe occurs. Michel-Kerjan (2010) shows that the national demand for flood insurance increased by more than 15 percent in 2006, the year following Hurricane Katrina. A similar reaction to catastrophes has been shown earlier on in California in the aftermath of the 1971 San Fernando earthquake (Sullivan, Mustart, and Galehouse, 1977) and quakes that occurred in the early 1980s (Palm, Hodgson, Blanchard, and Lyons, 1990). Based on U.S. state-level data for the period 1994 through 2004, Fier and Carson (2010) also provide evidence of a significant relationship between the occurrence of catastrophes and increased demand for life insurance.

We also hypothesize that the increase in demand for 2-period contracts will be greater than for 1-period contracts in the aftermath of a catastrophe for two reasons. First, while our disaster sequence was randomly defined, it happened that four of the five hurricanes across the eight treatments occurred in period 1 of a game. Those who purchased 2-period insurance when the catastrophe occurs in period 1 reaped the benefits directly since their premium remained the same in the second period rather than increasing to 2,500 talers. Those individuals might thus continue purchasing 2-period insurance after a catastrophe because they see the advantage of having a stable premium across both periods. Those who previously purchased 1-period contracts and witnessed a significant price increase from 2,000 talers to 2,500 talers in period 2 following a hurricane might want to purchase 2-period insurance policies to avoid such premium increases in future games.

Table 2 summarizes the four hypotheses.

Table 2. Summary of Hypotheses

H1	There will be a significant number of subjects who will not purchase insurance in any of the treatments.
H2	Introducing a 2-period contract in the menu of insurance contracts consumers can choose from increases the overall demand for insurance.
H3	Subjects are more likely to buy 2-period contracts than 1-period contracts if both are actuarially priced. Demand for 2-period contracts decreases when the premium increases and the 1-period contract is actuarially priced, but some individuals will still prefer 2-period contracts over 1-period policies.
H4	The demand for insurance increases in the game following a disaster and the demand for 2-period insurance increases more than the demand for 1-period insurance.

5. Results and Discussion

Descriptive Analyses

In the experiment, subjects had the following five alternatives to choose from in each game (except for treatments 1 and 1* where a 2-period insurance contract was not offered):

Alternative 1: No insurance in both periods, which we note (0,0)

Alternative 2: No insurance in period 1 but 1-period insurance in period 2, noted (0,1)

Alternative 3: 1-period insurance in both periods 1 and 2, noted (1,1)

Alternative 4: 1-period insurance in period 1 and no insurance in period 2, noted (1,0)

Alternative 5: 2-period insurance policy (2,2)

Table 3 below specifies the percentage of individuals who chose each of the five alternatives in each of the treatments (total across the 30 games). For each treatment we combine the two scenarios that are identical except for the sequence of hurricanes (that is 1 and 1*; 2 and 2*; 3 and 3*; 4 and 4*).

We find that the vast majority of the subjects decide to buy either no insurance (Alternative 1), two 1-period policies (Alternative 3) or a 2-period policy (Alternative 5) across the different treatments. The data reveal that a significant percentage of the subjects did not purchase insurance in both periods for all of the treatments thus providing confirming evidence for **H1**.[6]

As shown in Table 3 the introduction of another option (a 2-period contract) in the menu of alternatives increases the overall demand for insurance (**H2**) for the three different pricing arrangements for 2-period insurance. The proportion purchasing either two 1-period contracts (Alternative 3) or a MYI contract (Alternative 5) increases from 54 percent in treatments 1/1* to more than 64 percent in treatments 2/2* and 63 and 67 percent in treatments 4/4* and 3/3*, respectively.

[6] Furthermore, about 8 percent (treatments 2/2*) to 14 percent (treatments 1/1*) of the subjects purchased insurance for one period of the games but not the other. Those subjects were thus uninsured for half of the game.

Table 3. Percentage of Individuals Choosing Different Alternatives across the Four Treatments

Treatments	Alternative 1 (0,0)	Alternative 2 (0,1)	Alternative 3 (1,1)	Alternative 4 (1,0)	Alternative 5 (2,2)
1 and 1* *Menu: no insurance;1-period contract*	32.07%	6.27%	54.09%	7.57%	NA
2 and 2* *Menu: no insurance;1-period contract; actuarially-fair 2-period contract*	27.38%	3.86%	6.52%	4.42%	57.82%
3 and 3* *Menu: no insurance;1-period contract; 5%-load 2-period contract*	23.42%	3.68%	22.98%	5.43%	44.49%
4 and 4* *Menu: no insurance;1-period contract; 10%-load 2-period contract*	25.78%	5.00%	23.62%	5.92%	39.68%

NA= not available

Figure 4 compares the demand for both types of insurance contracts under different pricing arrangements across the three treatments where a 2-period contract is included in the menu offered to the subjects. The demand for one-period contracts is defined as: (1,1) + ((1,0)+(0,1)/2). That is the sum of subjects selecting two 1-period contracts in the same game and half of the subjects selecting (1,0) and (0,1) (since half of the time during the game they are not insured). We find that more than five times as many individuals purchased 2-period insurance than 1-period contracts when both types of contracts are actuarially fair (treatments 2 and 2*). Even when the 2-period contract is priced at 5 percent and 10 percent above the actuarially fair rate, a large proportion of the subject pool still prefers 2-period to 1-period policies (44.5 percent versus 26.9 percent and 39.7 percent versus 29.1 percent, respectively). These data provide support for **H3**: individuals like 2-period policies either because they are risk averse, like stability and/or they have other goals influencing their choices such as meeting budget constraints. In fact, more individuals still prefer the 2-period contract to 1-year contracts when it is 10 percent more expensive than the actuarially fair price.

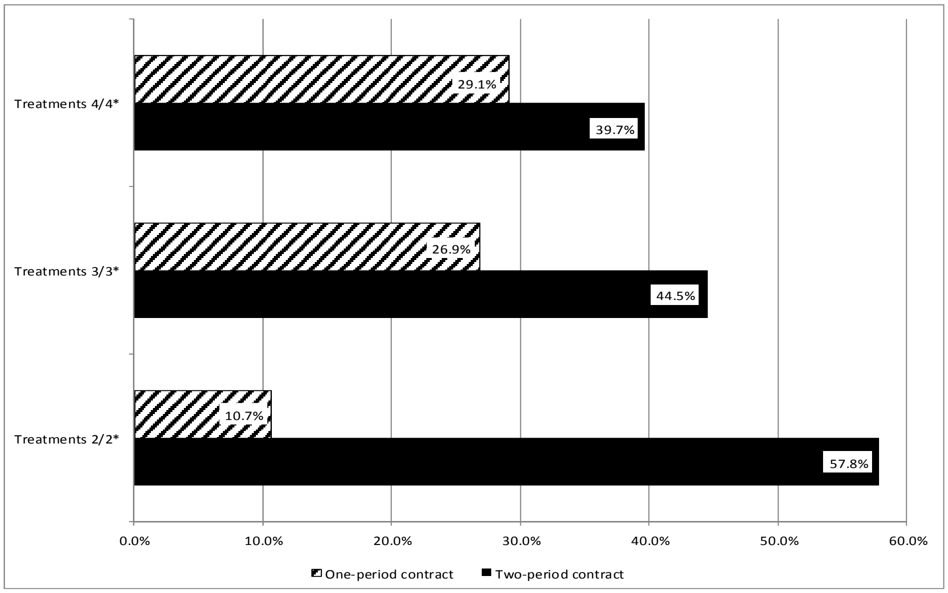

Figure 4. Demand for 1- and 2-period insurance contracts under different pricing arrangements

Multinomial Logit Regression Analysis

To examine the impact of specific variables on the demand for insurance and the preference between 1- and 2-period contracts we undertook a series of multinomial logit regression analyses. The dependent variables were characterized by the decision alternatives facing a subject in each game with Alternative 1 (Not Purchasing Insurance) as the baseline condition. Given the small number of individuals who chose to purchase insurance for only one of the two periods, we exclude Alternatives 2 and 4 in the analysis presented below.

The Holt-Laury (2002) paired lotteries, depicted in Table 4, enable us to determine the impact of risk aversion on the insurance purchase decision. The range of payoffs for Option A ($1.60; $2) is smaller than in Option B ($0.1; $3.85). As shown in Table 4, (last column), the expected payoff of Option A decreases relative to Option B as one moves down in the table to higher numbered paired lotteries. The more risk averse a person is, the more Option A lotteries would be preferred before switching to Option B. A risk neutral person would choose Option A four times before switching to Option B. The risk attitude (RA) of an individual is determined by the number of times s/he chose Option A in the 10 paired lotteries.[7]

[7] We used these hypothetical lotteries to determine the degree of risk aversion. Had there been real payoffs for these lotteries and/or the amounts at stake been somewhat higher than those in Table 4, the degree of risk aversion would likely be greater than those we obtained in this experiment as shown by experiments conducted by Harrison et al. (2005) and Holt and Laury (2005). See Harrison and Rutstrom (2008) for a detailed survey on the experimental evidence of risk aversion in controlled laboratory settings.

Table 4. The Holt-Laury Ten Paired Lottery-Choice Decisions

Option A	Option B	Expected payoff difference
1/10 of \$2.00, 9/10 of \$1.60	1/10 of \$3.85, 9/10 of \$0.10	\$1.17
2/10 of \$2.00, 8/10 of \$1.60	2/10 of \$3.85, 8/10 of \$0.10	\$0.83
3/10 of \$2.00, 7/10 of \$1.60	3/10 of \$3.85, 7/10 of \$0.10	\$0.50
4/10 of \$2.00, 6/10 of \$1.60	4/10 of \$3.85, 6/10 of \$0.10	\$0.16
5/10 of \$2.00, 5/10 of \$1.60	5/10 of \$3.85, 5/10 of \$0.10	−\$0.18
6/10 of \$2.00, 4/10 of \$1.60	6/10 of \$3.85, 4/10 of \$0.10	−\$0.51
7/10 of \$2.00, 3/10 of \$1.60	7/10 of \$3.85, 3/10 of \$0.10	−\$0.85
8/10 of \$2.00, 2/10 of \$1.60	8/10 of \$3.85, 2/10 of \$0.10	−\$1.18
9/10 of \$2.00, 1/10 of \$1.60	9/10 of \$3.85, 1/10 of \$0.10	−\$1.52
10/10 of \$2.00, 0/10 of \$1.60	10/10 of \$3.85, 0/10 of \$0.10	−\$1.85

We examined the relative importance of RA, several other demographic variables (e.g., *Age, Gender, Education, Income*) and the impact of additional premiums of 5 percent (*PriceAddon5*) and 10 percent (*PriceAddon10*) specified by treatments 4 and 5 in predicting the likelihood of 1-period and 2-period insurance policies. We were also interested in whether the treatments with disasters starting in earlier games (5, 10, and 21) (*Early Disaster*; noted EarlyD) had a different impact on the demand for insurance than when the hurricanes occurred later in the experiment (i.e. during games 19 and 28). The results of these multinomial logit regressions are presented in Table 5. We recognize that even though the games were independent there might be some intra-dependence within games played by each individual. To the extent this is the case, we calculated the intra-class correlation coefficient and used the coefficient to alter the standard errors of the variables. The significance levels for most of the variables discussed above were fairly similar.

Table 5. Multinomial Logit Regression for Determining Insurance Purchase Choices

Coefficient	Estimate	t-value	Pr(>|t|)	Marginal Effect
2:(intercept)	-1.20* (0.53)	-2.29	0.02	N/A
3:(intercept)	-1.39*** (0.35)	-3.96	0.00	N/A
4:(intercept)	0.20 (0.70)	0.28	0.78	N/A
5:(intercept)	0.83** (0.27)	3.14	0.00	N/A
2:PriceAddon5	0.15 (0.16)	0.93	0.35	0.00
3:PriceAddon5	1.51*** (0.11)	14.28	0.00	0.11
4:PriceAddon5	0.41** (0.14)	2.91	0.00	0.00
5:PriceAddon5	-0.03 (0.07)	-0.44	0.66	-0.10
2:PriceAddon10	0.47*** (0.14)	3.31	0.00	0.02
3:PriceAddon10	1.56*** (0.10)	15.22	0.00	0.13
4:PriceAddon10	0.50*** (0.14)	3.73	0.00	0.00
5:PriceAddon10	-0.15* (0.07)	-2.14	0.03	-0.14
2:RA	0.06** (0.02)	2.75	0.01	0.00
3:RA	0.08*** (0.01)	6.35	0.00	0.00
4:RA	0.00 (0.02)	0.06	0.95	0.00
5:RA	0.14*** (0.01)	12.80	0.00	0.02
2:Age	-0.01 (0.01)	-1.00	0.32	0.00
3:Age	0.01* (0.00)	2.52	0.01	0.00
4:Age	-0.03*** (0.01)	-5.88	0.00	0.00
5:Age	0.01*** (0.00)	5.51	0.00	0.00
2:Educ	-0.02 (0.07)	-0.32	0.75	0.00
3:Educ	0.01 (0.04)	0.15	0.88	0.00
4:Educ	-0.34*** (0.06)	-5.55	0.00	0.00
5:Educ	-0.02 (0.03)	-0.71	0.48	0.00
2:Income	-0.12** (0.04)	-3.16	0.00	0.00
3:Income	-0.31*** (0.03)	-12.34	0.00	-0.01
4:Income	-0.18*** (0.04)	-4.89	0.00	0.00
5:Income	-0.18*** (0.02)	-9.61	0.00	-0.02
2:EarlyD	0.57*** (0.12)	4.66	0.00	0.01
3:EarlyD	0.60*** (0.07)	8.18	0.00	0.01
4:EarlyD	0.19 (0.11)	1.68	0.09	0.00
5:EarlyD	0.35*** (0.06)	5.98	0.00	0.03

Note: Standard errors are in parentheses.
*Significance Levels: *** = .001 **= .01 * = .05*

As mentioned above, Alternative 1 (no insurance on either period of a game) is the baseline variable from which to judge the likelihood that an individual will want to purchase

1-period or 2-period policies. EarlyD is a dummy variable that is 1 if the disaster sequence is the one with hurricanes in earlier games and 0 if hurricanes occur later in the experiment.

The positive and statistically significant coefficients for RA for Alternatives 3 and 5 indicates that as an individual becomes more risk-averse s/he is more likely to purchase insurance. As the price of a 2-period policy becomes more expensive due to the 5 percent and 10 percent add-on to the actuarially fair premium, the likelihood of an individual purchasing this type of coverage decreases. These data provide additional evidence supporting H3. With respect to the socio-economic variables, those with higher incomes were less likely to buy coverage, presumably because they feel they are more financially able to afford a loss than their lower income counterparts in the experiment.

We are also interested in whether the overall demand for insurance significantly increases after a hurricane occurs as revealed by empirical evidence in the aftermath of major flooding or earthquakes (**H4**). We find no clear pattern in subject behavior to support an increase (or decrease) of post-catastrophe insurance demand for either 1-period or 2-period insurance contracts immediately after a disaster. This suggests that subjects understood the dynamics of the experiment well: they were told the probability of having a disaster in one game was independent of the probability of another one occurring in the next game. In the real world there are long stretches of time between disasters and we think individuals might be likely to be subject to more systematic biases such as *availability* or the *gambler's fallacy*.

On the other hand, having experienced a disaster appears to have a more long-lasting effect on the general insurance decision pattern in our controlled experiment than in the real world. More specifically, the variable *EarlyD* has a highly significant positive coefficient with respect to Alternative 3 and 5. This implies that when one experiences a disaster in early games one is more likely to purchase coverage for both periods of the following games, by purchasing either 1-period or 2-period insurance, than if the hurricanes occur later in the experiment.

To highlight the relative importance of the different coefficients in our logit regression one needs to determine the marginal effects (Table 5). We examine the impact of each of the different variables that were statistically significant for at least one of the alternatives on the probability of an individual purchasing a specific insurance policy under different treatments. To provide an economic interpretation of these marginal effects, we set age at its mean value across all participants. For interval variables (i.e., risk aversion, education, income) the mean was calculated simply by assigning a 1 to the first interval, 2 for the second and then taking the average. The resulting mean values were: risk aversion: 5.30 (chose Option A between 5 and 6 times); age: 46 years; education: 3.71 (some college or college graduate); and annual income: 3.30 (between $50,000 and $75,000).

We now focus on the impact that a set of variables has on the likelihood of choosing each of the five alternatives:

Effects of Changes in Premiums for 2-Period Insurance Policy

PriceAddon5 (noted as P5): As shown in Table 6a, the major effect of increasing the price of a 2-period policy by 5 percent above actuarial value (P5=1) while holding the 1-period policy at an actuarially fair premium is the decrease in probability of purchasing 2-period insurance from .74 to .64, and the increase in probability of purchasing two 1-period policies from .04 to .15 in the scenario where hurricanes come in later games (EarlyD=0). The probability of purchasing two 1-period policies increases to .20 when hurricanes occur in the earlier games.

Table 6a. Impact of 5 Percent Price Increase in 2-Period Policy on Purchase of Insurance

	Prob(Alt1)	Prob(Alt2)	Prob(Alt3)	Prob(Alt4)	Prob(Alt5)
P5 = 0, P10 = 0	0.18	0.04	0.04	0.007	0.74
Late Disaster Sequence					
P5=1, P10=0	0.16	0.04	0.15	0.009	0.64
Early Disaster Sequences					
P5 = 1, P10 = 0	0.11	0.05	0.20	0.007	0.64

Note: Results are rounded.

PriceAddon10 (noted as P10). As can be seen in Table 6b, the major effect of P10=1 is the same as P5=1 except that the effect is exacerbated. A 10 percent increase in premiums leads to a larger decrease in 2-period policies and a greater increase in 1-period insurance than when the price increases only by 5 percent for both types of hurricane scenarios. We also see that when hurricanes occur in earlier games (Early D=1) there is a higher probability that subjects will purchase two 1-period insurance contracts in a game (.21) than if the first hurricane occurs in the later games (.17).

Table 6b. Impact of 10 Percent Price Increase in 2-Period Policy on Purchase of Insurance

	P(alt1)	P(alt2)	P(alt3)	P(alt4)	P(alt5)
P5 = 0, P10 = 0,	0.19	0.04	0.04	0.007	0.74
EarlyD = 0					
P5=0, P10=1	0.17	0.05	0.17	0.010	0.60
EarlyD = 1					
P5 = 0, P10 = 1	0.12	0.07	0.21	0.009	0.60

Effects of Income:

As income increases, the average subject is more likely to be uninsured. As shown in Table 6c there is a 20 percent chance that a subject with an income between $75,000 and $100,000 will not purchase insurance in either period compared to a 15 percent chance when the person has an income between $25,000 and $50,000. We report in Table 6c the case when the 2-period insurance premium is actuarially fair and the person is subject to a hurricane scenario with an early disaster and all variables (i.e., age, education and risk aversion) are set at their average values. Other cases lead to similar results.

Table 6c. Impact of Income on Insurance Purchase

Income	P(alt1)	P(alt2)	P(alt3)	P(alt4)	P(alt5)
$75,000-$100,000	0.20	0.04	0.03	0.01	0.72
$50,000-$75,000	0.18	0.03	0.04	0.01	0.74
$25,000-$50,000	0.15	0.03	0.05	0.01	0.76

Impact of Risk Aversion

We now examine the impact of risk aversion (RA) on the probability of choosing each of the five alternatives for the two types of hurricane scenarios to which subjects are exposed. We have selected three values of RA for this analysis: RA=4 (risk neutral) and RA=6 (risk averse) and RA=8 (very risk averse). The data in Table 6d reveal that individuals who are risk neutral have a probability of purchasing insurance of .80; this likelihood increases to .83 when they are risk averse and to .87 when they are very risk averse and they face a scenario where hurricanes occur in the later games (EarlyD=0). The probability of purchasing a 2-

period insurance policy increases by 3 to 5 percent points when the hurricanes occur in the early games.

Table 6d. Impact of Risk Aversion on Insurance Purchase

	Prob(Alt1)	Prob(Alt2)	Prob(Alt3)	Prob(Alt4)	Prob(Alt5)
EarlyD = 0					
RA = 8	0.13	0.03	0.04	0.01	0.79
RA = 6	0.17	0.03	0.03	0.01	0.76
RA = 4	0.20	0.04	0.04	0.01	0.71
EarlyD = 1					
RA = 8	0.10	0.04	0.05	0.00	0.81
RA = 6	0.12	0.04	0.05	0.01	0.78
RA = 4	0.15	0.05	0.05	0.01	0.74

6. Conclusion and Implications

This paper proposed a change in the design of property insurance contracts by offering individuals an opportunity to purchase 1- or 2-period policies. We then tested the demand for such contracts in a repeated game experiment with a significant amount of real money at stake. The experiment revealed several important findings. First, a large portion of individuals do not want to purchase any type of insurance, confirming a well documented finding in the literature on decision making under risk and uncertainty. Second, there is a significant demand for multi-period contracts. More than 5 times as many individuals chose the fixed-price 2-period insurance policy over a 1-period contract with possible premium fluctuations. Third, the overall demand for insurance (i.e., the combined demand for 1-period and 2-period contracts) increases when insurers offer both types of contracts at the same time rather than just 1-period policies.

As hypothesized, the demand for 2-period policies was higher than for 1-period contracts even when the multi-period premium was priced 5 percent and 10 percent above the actuarially fair price and the 1-period premium was actuarially fair. We undertook a multinomial logit regression analysis to better quantify the effects of several parameters on the demand for both types of contracts. As income increases, the average subject is more likely to be uninsured. Those who are more risk averse, based on their responses to the Holt-Laury

(2002) paired lotteries, are more likely to purchase 2-period rather than 1-period policies. The demand for multi-period contract increased when the disasters occurred earlier in the experiment, because individuals were able to appreciate the value of a stable premium rather than having it increase significantly after a disaster had they purchased 1-period policies.

Future research should examine the demand for the proposed extended contracts when we increase the number of periods in a game and offer multi-year contracts for three or more periods in addition to the 1- and 2-period policies. One could also allow subjects to cancel their multi-period policy at a pre-specified cost before the contract ends in a manner similar to the refinancing of mortgages when interest rates decline. In addition one could vary the probability and loss to see how these factors influence decisions. The experiments could also be undertaken in other countries so we account for possible cultural differences.

One limitation of our setting is that individuals do not actually purchase real insurance with their own money. We tried to address this by increasing the amount of money at stake. Pilot field experiments could examine the actual demand for annual or multi-year policies on specific risks when policyholders have the option of purchasing actual insurance to cover their potential losses. These studies would be conducted in collaboration with insurers to measure the interest of their clients in purchasing the proposed multi-year contracts.

As our findings reveal there may be untapped opportunities to increase the demand for catastrophe coverage by offering multi-year contracts in addition to the traditional annual policies offered today. We believe this is relevant and timely because in recent years there have been significant increase in government post-disaster relief given to uninsured victims. For instance, the U.S. Congress provided $89 billion (2011 prices) in disaster relief after Hurricane Katrina in 2005. That was more than combined claims payments from public insurance programs and private insurers to insured victims. Despite recent empirical evidence suggesting that we have entered a new era of catastrophes, there have not been market-based innovations to ensure that residents in hazard prone areas have sufficient insurance and maintain their coverage over time so they are protected against losses from the next disaster. As our findings show, multi-year policies have the potential of playing an important role in this regard.

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Appendix 1: Demographics of Participants Selected for the Analysis

Gender	Age	Education	Income[i]	Employment
Female 299 (67%)	*21-29* 30 (7%)	*Primary School* 1	*[$0;$25,000]* 45 (10%)	*Employed* 301 (68%)
Male 146 (33%)	*30-39* 121 (27%)	*High School* 54 (12%)	*[$25,000; $50,000]* 105 (24%)	*Retired* 57 (12%)
	40-49 120 (27%)	*Two-year College* 107 (24%)	*[$50,000; $75,000]* 105 (24%)	*Student* 16 (4%)
	50-59 113 (25%)	*Undergraduate Degree* 198 (44%)	*[$75,000; $100,000]* 89 (20%)	*Unemployed* 71 (16%)
	60-69 52 (12%)	*Masters or PhD Degree* 85 (19%)	*[$100,000; $150,000]* 54 (12%)	
	70-78 9 (2%)		*>$150,000* 17 (4%)	

N= 445

[i] 30 responders (6%) answered not applicable.