DO PEOPLE HAVE A BIAS FOR LOW-DEDUCTIBLE INSURANCE?

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ABSTRACT

Do consumers show a strong bias toward low deductible insurance plans, as many field studies imply? This paper reports on a controlled experiment intended to see whether subjects have a predisposition toward such plans and whether that preference is consistent when their default plan and premiums are changed. Subjects were presented with a scenario where they had to make a decision on whether to purchase a plan with a low deductible (LD) or high deductible (HD) when faced with an illness having a specified probability and cost. Participants had to choose between these plans in two rounds with the identical risk of an illness and specified premiums. If their default option was an LD plan in Round 1, then it was an HD plan in Round 2. The experiment did not show a strong bias toward low deductible health plans. Only slightly more than half of the respondents chose an LD plan even when it was optimal for them to do so. When faced with a default option that was switched in Round 2, 58% of the respondents chose the same plan as they did in Round 1, implying that some but not all subjects resisted the default option in their decision process. Subject choices were correlated with their responses to questions about risk aversion and a desire for peace of mind.

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A data appendix is available at http://www.nber.org/data-appendix/w26994

1. Introduction

Recent debates about health insurance reform have been concerned with whether consumers should be required to have coverage providing them full protection without deductibles, or whether they should be permitted to make their own decisions on the type of insurance they would like to purchase (Stein, 2017). A key question is what choices some or all of them would make on their own. Indeed, a perennial topic in the economics of risk and insurance is whether, in practice, insurance buyers have a bias for low deductible coverage when they should have chosen a policy with a higher deductible if they were maximizing their expected utility. If there is a bias toward low deductible plans, it would mean that there would be little resistance to mandating this provision in a health insurance reform bill.

This paper describes the results of an experiment that examines the influence of default options with respect to the choice between a high deductible (HD) health insurance plan and a low deductible (LD) health insurance plan and to understand what factors may lead individuals to opt-out of the prescribed default. Our interest is in answering two questions posed in the literature:

> (1) Do insurance buyers display a bias toward low deductible plans?

> (2) Do default options have the same effect on plan choice when it is less or more advantageous for an individual to choose the option that is not a default?

Over fifty years ago, Pashigian et al. (1966) showed that risk averse individuals should prefer a high rather than a low deductible based on the relative costs of the two policies. More recently, a number of empirical studies have indicated that individuals are more likely to favor products with low rather than high deductibles even when the administrative loading costs associated with the low deductible ought to have discouraged this preference.

In a study of 8,000 individuals with private health insurance, van de Ven and van Praag (1981) determined that about 60% wanted full coverage, that is, a policy with no deductible. In a study of deductible choices by 50,000 homeowners using a data set provided by an insurance company, Sydnor (2010) found that 83% chose a deductible lower than the maximum one available, even though the increased premium for the additional coverage would be hard to justify by comparing the expected benefits with the extra cost. Data from one million flood insurance policies in force in Florida revealed that almost 80% chose the lowest deductible ($500) when there were five higher deductible options ranging from $1000 to $5,000 (Michel-Kerjan and Kousky, 2010). In a study of 23,894 employees in a large U.S. firm, the majority chose health insurance plans with a low deductible when they would have been better off financially if they had chosen a plan with the same coverage except for a higher deductible, because the high deductible premium was less than the maximum additional deductible. By making this change, the average employee could have saved $373 per year, which is equivalent to 2% of mean annual income and 42% of the average employee-paid premium (Bhargava, Loewenstein and Sydnor, 2017).

In behavioral economics, choice architecture recommends changing the framing of decisions, such as using default options, to promote socially and individually beneficial decisions (Johnson and Goldstein, 2003; Cohen et al., 2015; Ungemach et al., 2017). Field and controlled

experiments reveal that consumers are generally more likely to stick with the default option rather than going to the trouble of opting out in favor of some other alternative. To date, this framing technique has normally been applied to situations where the outcome is either known with certainty, or when the chosen option (such as a recommended 401(k) plan), has a higher expected return than the other options and is the best choice for all or almost all employees in firms (Madrian and Shea, 2001; Thaler and Benartzi, 2004).

A few studies have examined the use of defaults in the context of insurance decisions in situations where the best choice under full information is not necessarily the same for all individuals. Johnson et al. (1993) examined changes in legislation in two states that introduced an automobile policy with either a full right to sue or a limited right to sue at a lower premium. In New Jersey, the policy was the limited right to sue; 80% of the drivers maintained this feature rather than opting out of the default by choosing the full right to sue. In Pennsylvania, the policy was the full right to sue; 75% of the drivers in this state retained this option. Whether choices on average led to better outcomes with the New Jersey default compared to the Pennsylvania default is unknown. Krieger and Felder (2013) showed that default assignment to a health insurance policy where the individual pays no medical treatment costs led to more frequent choice of that option compared to a setting in which subjects had to choose a plan.

Do those who favor low deductibles behave as if they maximized their expected utility? One influence on consumers buying a more expensive policy with the low deductible is that these individuals overestimate their loss probability. They would then perceive the premium with a low deductible to be attractive because they believe they are likely to have more claims than the average person. Individuals with budget constraints may prefer paying a small additional premium to avoid cash flow difficulties if they suffer a loss (Bhargava, Loewenstein and Sydnor, 2017) or they may anticipate other uninsured losses that are correlated with their medical expenses, such as payment to caregivers (Doherty and Schlesinger, 1983). The incremental premium associated with a low deductible is usually above the actuarially fair level to cover administrative costs and profits (Phelps and Parente, 2017), but it can fall below that level when health insurance premiums for employment based insurance are excluded from worker income subject to income and payroll taxes.

This paper describes the results of an experiment designed to minimize the role of the above factors so we can explore the following questions which, to our knowledge, have not been addressed in previous research:

> (1) Do individuals choose the same insurance plan when the default option is altered but the likelihood of an illness and cost of insurance are kept the same for HD and LD insurance plans?
> (2) Do subjects utilize different strategies when making choices between these two insurance plans (i.e., always choosing the LD plan, always choosing the HD plan; always choosing the default option or never choosing the default option)?

In our study, a sample of consumers are told that they face the same probability and losses from an illness and insurance premiums, and must choose between an HD and LD health insurance

plan. This setting is highly relevant, as some legislators favor high deductible plans while others feel these policies are a form of underinsurance (Stein, 2017).

We explore potential influences that defaults have on respondents' choice of plans and the strength of their feelings about their deductible. We are particularly interested in the roles that regret, risk aversion and peace of mind play in decisions on whether to stick with the default option (either HD or LD) or switch to the other deductible plan. Behavioral factors such as regret, which are normally not considered as part of standard expected utility models, have been highlighted as a rationale for purchasing insurance (Bell, 1982; Loomes and Sugden, 1982; Krantz and Kunreuther, 2007).

In our experiment, 811 subjects were randomly assigned to scenarios in which the low or high deductible option was the default. When the low deductible (LD) plan was the default option, many of the subjects chose the high deductible (HD) rather than the low deductible (LD) plan even though they would have benefitted from a favorable (i.e., subsidized) incremental premium to maintain LD coverage. When HD was the default and/or the incremental premium was unfavorable (i.e., a loading cost), most chose the HD plan. We find no evidence for an appreciable bias toward LD plans in a controlled experiment with well-specified probabilities and losses. Changes in the LD and HD premiums also have a modest impact on plan choice, default options held constant. These findings imply that there is no single archetype of an insurance buyer: some consistently prefer LD plans, but many others choose HD plans even when an LD plan was the optimal choice if one was risk averse and maximized expected utility. Others are inconsistent in their choices, though in different ways.

2. Nature of the Experiment

We used Qualtrics to undertake a web-based experiment consisting of two rounds. In Round 1, each participant was assigned to a health insurance plan with either an HD or LD and was given the option to switch to the other deductible plan. Participants were given the specified premiums for each plan, a probability of contracting an illness and the cost to treat the illness. In Round 2, participants were assigned to the other health insurance policy (LD or HD) and told that the specified premiums for each plan and the probability of an illness and cost to treat it were identical to those in Round 1. We could thus determine whether the deductible plan selected in Round 1 had an impact on the choice of the deductible plan in Round 2, by seeing how frequently the choices matched. More specifically, we were interested in how many individuals chose the plan with the same deductible in Rounds 1 and 2—in which case they would be considered consistent in their behavior—or whether they differed between the two rounds.

We used a fictitious currency (talers) where 1,000 talers=$1 and constructed a scenario where individuals with an annual income of 100,000 talers were enrolled in a health insurance plan for the coming year that covered all expenses above a specified deductible for a specified premium. To incentivize individuals to take the experiment seriously, each participant was given a number between 100 and 199 with the knowledge that 1 out of every 100 of them would be selected to play the experiment for real money if the last two digits of their number matched the winning number (between 00-99) of the Florida Pick 2 on a specific date. Participants were told that a random device determined whether the participant playing for real money had contracted an

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illness. Potential earnings for this individual could range from $40-$50 depending on the participant's deductible choice, the premium, and whether or not they had suffered an illness.

Participants were told that they had a 20% chance of contracting a certain illness next year that would cost them 20,000 talers to treat. The options were a low deductible (LD) plan with a deductible of 500 talers or a high deductible (HD) plan with a deductible of 2500 talers. One subject group was given a favorable incremental premium to switch from the HD to LD plan so that it was always economically attractive to choose the LD if a person were risk neutral or risk averse. Another group was given an unfavorable incremental premium with a loading cost of 20% so that the extra cost of choosing an LD over an HD plan was greater than the expected benefits. This group should choose an HD plan if they maximized their expected utility unless they were extremely risk averse.

Our experiment was designed to pose minimal challenges for individuals with respect to their understanding of insurance by posing only one risk (an illness) with the probability of its occurrence and the cost to treated it stated explicitly to all participants so as to avoid the challenges employees faced with in the field experiment undertaken by Bhargava, Loewenstein, and Sydnor (2017). Participants were told that the annual likelihood of contracting the illness was 20% (.20) and that they had an opportunity to change their deductible with either a decrease in premium if they switched from an LD to HD plan or an increase in their premium if they switched from an HD to an LD plan. The actuarially fair *incremental* premium for LD is 0.2(2000), or 400 talers. Table 1 shows the premium-coverage combinations faced by different participants.

Table 1

FAVORABLE AND UNFAVORABLE PREMIUMS FOR LOW AND HIGH DEDUCTIBLE PLANS

	Favorable Premium	Unfavorable Premium
High Deductible (HD)	30	30
Low Deductible (LD)	350	530

To determine the role that risk perception played in the HD or LD decision, we asked each person to characterize themselves as a person who is not willing or willing to take risks on a scale ranging from 1 (not at all willing to take risks) to 10 (very willing to take risks) and how much they value peace of mind. We also asked questions about attitudes, feelings toward insurance markets, and life experiences. The survey concluded with a set of standard socio-economic questions such as age, gender, education and income.

3. Experimental Findings: Low Deductible Bias

RESULT 1: *When the low deductible (LD) plan was the default option, only 55% of the participants chose it in Round 1, even when the insurance premium was favorabl*e. *Any individual who was risk neutral or risk averse should have opted for the LD plan if they were expected utility maximizers or undertook an expected benefit-cost comparison between the two plans. Many subjects opted out of the default options and chose the HD plan.*

Nature of the Finding: To determine whether individuals preferred a low deductible (LD) plan in Round 1, we first examined participant behavior when the LD insurance premium was favorable: the difference between the extra cost for choosing an LD rather than an HD plan was less than the increase in expected claims if one suffered a loss, as shown in Table 2. More specifically, as shown in Table 1, if a person chose an LD rather than an HD plan, they would pay 320 talers more (350 - 30); however, they would receive an extra 2000 talers (2500 - 500) if they suffered an illness implied that their extra expected return would be 400 [.20 (2000)].

Table 2
EVIDENCE ON LOW-DEDUCTIBLE (LD) CHOICE
(% CHOOSING LD PLAN IN ROUND 1)

Row #	Default	Premium	% choosing LD Plan	Number choosing LD Plan/Total Sample
1	LD	Favorable	55	101/184
2	LD	Unfavorable	50	106/213
3	HD	Favorable	41	77/188
4	HD	Unfavorable	40	91/229

RESULT 2: *Default options had a greater impact on choice of plan than did premium differentials.*

Nature of the Finding: Table 2 indicates that changing the default option from LD to HD while holding premiums the same increases the proportion choosing HD by 14% for favorable premiums (row 1 and row 3) and by 10% for unfavorable premiums (row 2 and row 4). Increasing the incremental premium to an unfavorable level produced a slight increase in the proportion choosing HD: 5% when LD was the default option (row 1 and row 2) and only 1% when HD was the default option (row 3 and row 4). These data suggest that in Round 1 of the experiment, there was limited interest in low deductible plans when LD was the default, with only a little more than half choosing them when the premiums were favorable. When the choice environment was made less supportive of the LD choice by having HD as the default, the proportion choosing LD was approximately 40% as shown in Table 2. Hence, our controlled experiments produced results very different from previous empirical studies that individuals preferred low deductibles, and sometimes in ways that did not conform to maximizing their expected utility.

4. Experimental Findings: Choice Consistency

We next looked at whether each participant would consistently select the same health plan when the default was changed from one round to the next with the specific premiums and likelihood and loss from contracting an illness held constant between the two rounds.

RESULT 3: *A majority (58%) of respondents chose the same deductible plan when given a different default option, but a sizeable minority was not consistent in their choices. Of the latter group, 23% of the respondents always chose the default, and 19% never chose the default.*

Nature of the Finding: Table 3A shows that between 60% and 70% of individuals chose the LD insurance plan with either a favorable or unfavorable premium when the default option was switched from Round 1 to Round 2. The highest percentage of individuals who were consistent in their LD choice were those who were given LD as the default option in Round 1 and HD as the default option in Round 2 with a favorable premium. A somewhat smaller proportion of individuals were always consistent in choosing an HD with the percentage ranging from 46% to 59%. The lowest percentage (46%) were those given LD as the default option in Round 1 with a favorable premium; the highest percentage (59%) were given HD as the default option in Round 1 with an unfavorable premium. This result is not surprising if one believes that the initial choice of plan is influenced by the default option and the premium. A person should be most likely to choose an HD plan if it is the default in Round 1 with an unfavorable premium. The overall number of respondents who were choice consistent across all scenarios is 474 out of the total sample of 811, meaning that 58% were choice consistent.

Table 3A
EVIDENCE ON CHOICE CONSISTENCY
% OF ROUND 1 SAMPLE CHOOSING SAME HEALTH INSURANCE PLAN IN ROUNDS 1 AND 2

Row #	Round 1 Default	Round 2 Default	Premium	Round 1 Choice	Round 2 Choice	% of Sample Repeating Round 1 Choice.
1	LD	HD	Favorable	LD	LD	62
2	LD	HD	Unfavorable	LD	LD	60
3	LD	HD	Favorable	HD	HD	46
4	LD	HD	Unfavorable	HD	HD	54
5	HD	LD	Favorable	LD	LD	70
6	HD	LD	Unfavorable	LD	LD	60
7	HD	LD	Favorable	HD	HD	56
8	HD	LD	Unfavorable	HD	HD	59

Note: Consistent choices for LD, rows 1-2 and 5-6
    Consistent choices for HD, rows 3-4 and 7-8

Table 3B provides additional evidence on the role the default option played in influencing people's insurance purchase decisions. A sizeable fraction of respondents chose the default

option in Rounds 1 and 2. Slightly less than 40% of the individuals who chose the LD plan in Round 1 when LD was the default chose the HD plan in Round 2 when HD was the default (the first two rows of Table 3B). This implies that only about 60% of these individuals preferred LD whether or not it was the default, as shown in Table 3A (rows 1-2 and 9-10). When HD was the default in Round 1 and respondents chose it, either 59% or 49% choose the LD default in Round 2 depending on whether the premium was favorable or unfavorable (rows 3-4 of Table 3B). Smaller but still substantial fractions of respondents never chose the default in either round (rows 5-8 of Table 3B).

In summary, the total number of respondents who were choice inconsistent was 340, or 41.8% of all respondents. Of these respondents, 187 (55%) always chose the default; the other 153 respondents (45%) never chose the default. Out of the total sample, 23% always chose the default, and 19% never chose the default.

Table 3B

EVIDENCE ON CHOICE INCONSISTENCY:
% OF SUBJECTS ALWAYS CHOOSING OR NEVER CHOOSING THE DEFAULT

ALWAYS CHOOSE DEFAULT						
Row #	Round 1 Default	Round 2 Default	Premium	Round 1 Choice	Round 2 Choice	% of Round 1 Choices
1	LD	HD	Favorable	LD	LD	38
2	LD	HD	Unfavorable	LD	HD	40
3	HD	LD	Favorable	HD	LD	59
4	HD	LD	Unfavorable	HD	LD	49
NEVER CHOOSE DEFAULT						
Row #	Round 1 Default	Round 2 Default	Premium	Round 1 Choice	Round 2 Choice	% of Round 1 Choices
5	LD	HD	Favorable	HD	LD	32
6	LD	HD	Unfavorable	HD	LD	31
7	HD	LD	Favorable	LD	HD	28
8	HD	LD	Unfavorable	LD	HD	32

5. Experimental Findings: Correlates of Choice

We now explore whether participants who chose LD in each scenario differed in their survey responses from those who chose HD by undertaking logit regressions.

RESULT 4: *Respondents who chose an LD insurance plan were more risk averse and valued peace of mind more highly than those selecting an HD insurance plan.*

Nature of the Finding:

The only two variables that were statistically significant in predicting a preference for an LD were risk aversion and desire for peace of mind. This held whether the premium is favorable or unfavorable and whether or not the low deductible was the default. Regret did not play a significant role in the decisions on what to select for any of the four conditions to which the participants were assigned. The full regression results are shown in the Appendix. Table 4A shows the odds ratios and significance levels of these two variables in Round 1. In settings with favorable premiums, these individuals were more risk averse (than those choosing HD) when LD was the default (row 1) but had a higher value of peace of mind when HD was the default (row 3). When the premium was unfavorable and LD was the default, those who chose it in Round 1 were both more risk averse and attached a higher value to peace of mind, but neither influence was significant when HD was the default (row 4).

Table 4B reveals differences across respondents with respect to risk aversion and peace of mind when choices were made for Rounds 1 and 2. Those individuals who chose LD in both Rounds 1 and 2 when the premium was favorable were more risk averse than individuals who chose HD in both these rounds. This finding is not surprising if those who chose HD in both rounds were risk takers. Respondents who chose HD in Rounds 1 and 2 when the premium was unfavorable had less concern with peace of mind than those who chose the LD in both Rounds 1 and 2 perhaps because the latter group was concerned with peace of mind. The only other group that had a statistically significant variable were individuals who rebelled against the default option by being inconsistent with their choices between the two rounds.

None of the socio-economic variables from the survey (i.e., age, gender, education, income) impacted respondents' choice or whether they had experienced a past illness and made a claim on their health insurance policy. Several individuals who had prior illness or were young or male chose an LD plan, but these variables were not statistically significant across the entire sample.

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Table 4

BINARY LOGIT ANALYSIS OF CORRELATES OF PLAN CHOICE, GIVEN PREMIUM,
ROUND 1 DEFAULT, AND PARTICIPANT CHOICES

LOG ODDS AND SIGNIFICANCE LEVELS (p-Values)

Panel A: Round 1 Choices

Row #	Round 1 Default	Premium	Round 1 Choice	Risk Aversion	Peace of Mind
1	LD	Favorable	HD	1.664*	0.891
2	LD	Unfavorable	HD	1.823**	0.394**
3	HD	Favorable	LD	0.796	3.738*
4	HD	Unfavorable	LD	0.245	0.953

* .10 < p-value <.05   ** .01< p-value <.05

Panel B: Round 2 Choices, Conditioned on Round 1 Choice

Row #	Premium	Round 1 Default	Round 1 Choice	Round 2 Subjects	Round 2 Default	Round 2 Choice	Risk Aversion	Peace of Mind
1	Fav	LD	LD	101	HD	LD	2.18*	2.22
2	Fav	LD	HD	83	HD	LD	0.743	0.896
3	Unfav	HD	HD	107	LD	HD	1.02	6.63*
4	Unfav	HD	LD	106	LD	HD	0.766	0.261
5	Unfav	LD	LD	106	HD	LD	0.563	1.007
6	Unfav	LD	HD	107	HD	LD	0.963	1.728
7	Fav	HD	HD	111	LD	HD	1.216	1.684
8	Fav	HD	LD	77	LD	HD	4.024*	0.929

* .10 < p-value <.05

6. Discussion

There are several key takeaways from this experiment that challenge the empirical findings from previous studies on the preference for low deductible and the role of defaults when making insurance purchasing decisions:

1. Individuals do not consistently choose low deductibles even when they are presented with favorable premiums that would make it optimal for them to do so if they are maximizing their expected utility and are risk neutral or risk averse. Only 55% chose LD plans with a favorable premium when LD was the default option.

2. Default options have some impact on the choice of insurance plans. In Round 1, making an LD or HD health insurance plan the default option increased the percentage choosing that plan by 10-15%. Switching the default option in Round 2 also leads an even larger minority of subjects to choose the new default, rather than remaining with their initial choice. A large number of respondents opt out of the default option even when it is cost-

effective for them **not** to do so, such as staying with the LD default option when premiums are favorable.

3. Increasing the LD premium so it was unfavorable to the purchase of a low deductible health insurance has only a small impact on the choice of plans. When the premium was changed from a favorable premium to one with a 20% loading factor, there was only a small increase in the proportion who purchased an HD plan when it was more desirable to have this coverage.

4. About 60% of respondents were consistent in their choice of LD or HD insurance plans when defaults were subsequently changed.

With respect to an analysis of the consistency of choice with maximizing expected utility, we found that some respondents who chose LD in Round 1 when it was the default option switched away from that choice when they were presented with HD as the default option in Round 2. Given that loss probabilities and premium differences did not change, these respondents were not expected utility maximizers. The 45% who chose an HD plan when the premiums were favorable and LD was the default option were either risk loving or they were not maximizing expected utility. These results mirror our earlier experimental findings on insurance choice for hurricane losses, which revealed that subjects vary in their adherence to the standard economic choice model of maximizing expected utility theory—some do, but many do not (Kunreuther and Pauly, 2018).

To analyze the factors influencing the decision on which health insurance deductible plan to purchase, we undertook logit regressions. We found that the more risk averse respondents purchased an LD plan when the premium was favorable, and that those having a greater concern with peace of mind did so when the premium was unfavorable. This provides some internal validity for the choices observed in the study; those who chose LD were more likely to have characteristics consistent with that choice. It also showed, however, that in a head-to-head comparison, risk aversion that motivates the EU maximization model was sometimes less predictive of choice than the emotion of peace of mind.

7. Conclusion and Future Research

Risk neutral or risk averse individuals who chose an HD plan when premiums are favorable do not conform to expected utility maximization. We do find many subjects who are consistent with this behavior, but we cannot determine whether their decision process in making their choice was guided by maximizing their expected utility. A strategy of providing individuals with a health insurance plan with a high deductible as the default may lead some individuals to stay with this insurance policy when they may have chosen an LD plan if they were not given a default.

Consumers who consider the benefits and costs of different health insurance plans may decide to choose an LD plan over an HD plan even if the loading costs are high should they perceive that they are at a higher risk than the average person suffering an illness and/or they cannot afford a large uninsured loss. We designed our experiment so that these factors could not be the basis for a person's choice of insurance plans. The probabilities, costs of illness and insurance premiums were stated explicitly and were identical for all respondents in each of the specific conditions in

the experimental design. Yet many of the individuals chose an LD plan even when the premiums were unfavorably priced, as they are in current health insurance plans.

Future research is thus needed to determine how to present information to individuals to make the costs and benefits of different health insurance plans more transparent to consumers. For example, explaining to individuals that there can be significant savings over time by taking a high deductible and that the purpose of insurance is to protect those at risk against large losses might prove to be a rationale for people to favor an HD plan. Another point in favor of an HD plan is that one can avoid the time and effort of filing an insurance claim for a relatively small payment that would be covered by an LD plan. In fact, empirical research has shown that individuals who have a low deductible often do not make a claim on their homeowners policy partly for that reason, so they would have been far better off with a higher deductible (Braun et al., 2006). On the other hand, warning people that they might avoid cost-effective medical care if they chose a HD plan might motivate them to prefer the more costly LD plan.

The results from this experiment are consistent with the hypothesis that, although framing through default options, and, to a lesser extent, premium differentials can affect individuals' choice of cost sharing in health insurance, a majority still make consistent choices, and many of these respondents chose HD rather than LD in Rounds 1 and 2 when LD was the default option. For this reason, efforts to reform health insurance by mandating LD on all policies will conflict with what a sizeable fraction of people appear to prefer.

The research presented here should thus be viewed as another step in highlighting the importance of understanding individuals' decision processes associated with the purchase of insurance. For example, if some consumers tend to view insurance as an investment rather than a form of protection, they may want to have a low deductible so they feel they can get something back from having paid premiums to their insurers (Kunreuther, Pauly and McMorrow, 2013). A major challenge for future research is to convince individuals that the "best return on an insurance policy is no return at all" and that they should celebrate having no claims and having saved money by having a high deductible rather than focusing on getting as large a claim as possible by taking a low deductible.

REFERENCES

Bell, D. (1982). Regret in Decision Making Under Uncertainty. *Operations Research* 30: 961–981.

Bhargava, S., Loewenstein, G., and Sydnor, J. (2017). Choose to Lose: Health Plan Choices from a Menu with Dominated Option. *The Quarterly Journal of Economics* 132(3), August, pp. 1319-1372.

Braun, M., Fader, P. S., Bradlow, E. T., and Kunreuther, H. (2006). Modeling the 'Pseudodeductible' in insurance claims decisions. *Management Science.* 52: 1258-72.

Cohen, J. F., Richardson, S. A., Cluggish, S. A., Parker, E., Catalano, P. J., and Rimm, E. B. (2015). Effects of choice architecture and chef-enhanced meals on the selection and consumption of healthier school foods: A randomized clinical trial. *JAMA Pediatrics*, *169*(5): 431-437.

Doherty N., and Schlesinger, H. (1983). The Optimal deductible for an Insurance Policy When Initial Wealth Is Random. *Journal of Business,* 56: 555-565.

Johnson, E.J., and Goldstein, D.G. (2003). Do Defaults Save Lives? *Science*, 302: 1338-1339.

Johnson, E. J., Hershey, J., Meszaros, J., and Kunreuther, H. (1993). Framing, probability distortions, and insurance decisions. *Journal of Risk and Uncertainty*, *7*(1): 35-51.

Krantz, D. H., and Kunreuther, H. (2007). Goals and plans in decision making. *Judgment and Decision Making*, *2*(3): 137.

Krieger, M., and Felder, S. (2013). Can decision biases improve insurance outcomes? An experiment on status quo bias in health insurance choice. *International Journal of Environmental Research and Public Health*, *10*(6): 2560-2577.

Kunreuther, H., and Pauly, M. V. (2018). Dynamic insurance decision-making for rare events: The role of emotions. *The Geneva Papers on Risk and Insurance-Issues and Practice*, 43(2): 335-355.

Kunreuther, H., Pauly, M. V., and McMorrow, S. (2013). *Insurance and Behavioral Economics: Improving Decisions in the Most Misunderstood Industry*. New York: Cambridge University Press.

Loomes, G., and Sugden, R. (1982). Regret theory: An alternative theory of rational choice under uncertainty. *The Economic Journal*, 92(368): 805-824.

Madrian, B. C., and Shea, D. F. (2001). The Power of Suggestion: Inertia in 401(k) Participation and Savings Behavior. *The Quarterly Journal of Economics,* 16: 1149-1187.

Michel-Kerjan, E., and Kousky, C. (2010). Come Rain or Shine: Evidence on Flood Insurance Purchases in Florida. *Journal of Risk and Insurance,* 77: 369-397.

Pashigian, B. P. Schkade, L. L., and Menefee, G. H. (1966). The Selection of an Optimal Deductible for a Given Insurance Policy. *The Journal of Business,* 39(1), Part 1 (January), pp. 35-44.

Phelps, C. and Parente, S (2017). *The Economics of U.S. Health Care Policy.* New York: Routledge.

Stein, J. (2017). Bernie Sanders explains why he thinks everything short of Medicare-for-all is failure. *Vox*. https://www.vox.com/policy-and-politics/2017/9/13/16297228/bernie-sanders-medicare-single-payer. September 13.

Sydnor, J. (2010). (Over)insuring Modest Risks. *American Economic Journal: Applied Economics.*2(4) (October), pp. 177-199.

Thaler, R. H., and Benartzi, S. (2004). "Save more tomorrow™: Using behavioral economics to increase employee saving." *Journal of Political Economy 112*(S1): S164-S187.

Ungemach, C., Camilleri, A.R., Johnson, E.J., Larrick, R.P., and Weber, E.U. (2017). Translated attributes as choice architecture: Aligning objectives and choices through decision signposts. *Management Science*, *64*(5): 2445-2459.

van de Ven, W.P.M.M., and van Praag, B.M.S. (1981). The demand for deductibles in private health insurance: A probit model with sample selection. *Journal of Econometrics.* 17(1981): 229-252.