

Classic argument

- Consumers vary in their probabilities of various states of the world occurring, which motivates those with worse risks to buy more insurance (Rothschild and Stiglitz)
- Less common to emphasize, people facing higher costs for the same risk buy more insurance (people living in New York City (high prices) versus south (low prices))
- Preferences held fixed when doing analysis.

But empirical evidence of this adverse selection is scarce

- In many cases it is the low risk people who buy more health or other types of insurance.
 - Medicaid insurance (Medicare supplementary policies)
 - High income workers buy more insurance than low income workers
 - Elderly on Medicare are less well insured than many privately insured consumers
 - Families with two workers buy more insurance than individuals buy single coverage
 - Owners of luxury cars buy more insurance than owners of low cost cars.

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Preference Heterogeneity and Insurance Markets: Explaining a Puzzle of Insurance

Cutler, Finkelstein and McGarry

- Develop model where probabilities are the same, but people differ in their preferences. Specifically in their risk aversion.
- Some people are risk takers while others are risk averse.
- Risk taking behavior shows up in all aspects of life, not just health insurance.
- This paper examines how risk taking behaviors are correlated across diverse risky choices.

Not the first to make this observation

- Theory models
- Chiappori, Pierre-Andre, Bruno Jullien, Bernard Salanie, and Francois Salanie. 2006. "Asymmetric Information in Insurance: General Testable Implications." *Rand Journal of Economics*, 37(4): 783–98
- de Meza, David, and David C. Webb. 2001. Advantageous Selection in Insurance Markets." *Rand Journal of Economics*, 32(2): 249–62.
- Automobile insurance (Alma Cohen and Liran Einav 2007),
- Long-term care insurance (Finkelstein and McGarry 2006),
- Medigap (Fang, Keane, and Silverman 2006),
- Annuities (Einav, Finkelstein, and Paul Schrimpf 2007).

Data

- Use individual-level data from the original cohort of the Health and Retirement Study (HRS) to examine the holding of **term life insurance** and **private acute health insurance** among people age 51 to 61 in 1992.
- Use a second HRS cohort, the Asset and Health Dynamics (AHEAD) sample, to examine **Medigap insurance**, **long-term care insurance**, and **annuities** among people age 65 to 90 in 1995.
- Examine contemporaneous reports of **medical care use**, and also use the panel nature of these data to track **mortality** and **nursing home outcomes** for individuals in both cohorts through 2002.

Key insight to paper:

Heterogeneity in preferences may be as, or more, important than heterogeneity in risk in explaining insurance demand.

Use empirical evidence from diverse risks to quantify the correlations and direction but not magnitudes

Use clever choices of risky behaviors and relate to both insurance coverage and outcomes

Empirical Framework

Our estimating equations are of the form:

(1)

$$\mathbb{1}(\text{insurance})_i = \beta_0 + \beta_1 \text{Behavior}_i + X_i \Gamma + \varepsilon_i;$$

(2)

$$\text{Riskoccurrence}_i = \alpha_0 + \alpha_1 \text{Behavior}_i + X_i \Pi + \eta_i;$$

where $\mathbb{1}(\text{insurance})_i$ is an indicator variable for whether the individual has a particular type of insurance, Riskoccurrence_i is a measure of the occurrence of the risk the insurance in question would cover, Behavior_i is one of our measures of risk tolerance, and X represents covariates.

TABLE 1—RELATIONSHIP BETWEEN RISKY (OR RISK-REDUCING) BEHAVIOR AND INSURANCE COVERAGE

Independent variable	Insurance product			
	Term Life (1)	Annuity (2)	Long-term care (3)	Medigap (4)
Mean dep var	0.50	0.07	0.10	0.65
Smoking	−0.034*** (0.010) [11.453]	−0.027*** (0.009) [6.420]	0.007 (0.014) [6.401]	−0.083*** (0.022) [6.383]
Drinking	−0.017 (0.021) [11.453]	−0.013 (0.016) [6.393]	0.016 (0.023) [6.376]	−0.022 (0.035) [6.357]
Job risk	−0.002* (0.001) [10.556]	−0.003*** (0.001) [4.878]	−0.002*** (0.001) [4.845]	−0.016*** (0.002) [4.852]
Preventive care	0.115*** (0.016) [9.773]	0.053*** (0.010) [6.251]	0.082*** (0.011) [6.233]	0.187*** (0.020) [6.218]
Always wears seat belt	0.063*** (0.013) [9.805]	0.030*** (0.007) [6.408]	0.037*** (0.009) [6.390]	0.058*** (0.016) [6.373]

Notes: Table reports results from OLS estimation of equation (1). Binary dependent variable is given in column heading. Each cell reports the results from a separate regression; it reports the coefficient on right-hand-side variable listed in the first column. Insurance is measured in the 1992 HRS in columns 1 and 5, and in the 1995 AHEAD in columns 2, 3, and 4. Right-hand-side variables are measured in the year insurance is measured (1992 or 1995 as indicated) except for preventive health activity and seat belt use for 1992 insurance coverage where they are measured in 1996. Heteroskedasticity-robust standard errors are in parentheses. Sample size is in square brackets.

*** Significant at, or below, 1 percent.

** Significant at, or below, 5 percent.

* Significant at, or below, 10 percent.

Interpretation and Conclusions (Insurance choices and outcome)

Two main findings.

- Individuals who engage in risky behaviors (smoking, drinking, or prior employment in jobs with higher mortality rates) or who do not take measures to reduce risk (preventive health activities or wearing a seat belt) are systematically less likely to buy each of five insurance products.
- These same individuals tend to have
 - higher expected claims for life insurance and long-term-care insurance;
 - lower expected claims for annuities;
 - for Medigap and acute health insurance, there is no systematic relationship between the behavior measures and expected claims.

TABLE 2—RELATIONSHIP BETWEEN RISKY (OR RISK-REDUCING) BEHAVIOR AND RISKY OUTCOMES

Independent variable	Risky outcome				
	Mortality (1992–2002 HRS) (1)	Mortality (1995–2002 AHEAD) (2)	Used nursing home (1995–2002 AHEAD) (3)	Medical costs that Medigap could cover (1995 AHEAD) (4)	Entered a hospital in preceding two years? (1992 HRS) (5)
Mean dep var	0.13	0.38	0.24	\$911	0.09
Smoking	0.110*** (0.008) [11.191]	0.098*** (0.022) [6.455]	−0.011 (0.019) [6.217]	−103.1*** (40.2) [6.317]	−0.006 (0.006) [11.910]
Drinking	0.083*** (0.017) [11.191]	0.021 (0.035) [6.428]	−0.030 (0.029) [6.193]	−112.3** (54.5) [6.294]	0.010 (0.013) [11.910]
Job risk	0.004*** (0.001) [10.295]	0.007*** (0.002) [5.681]	−0.001 (0.001) [4.849]	9.3*** (3.6) [4.782]	0.002*** (0.001) [10.950]
Preventive care	−0.011 (0.010) [10.085]	−0.148*** (0.020) [6.285]	−0.127*** (0.018) [6.080]	305.1*** (36.6) [6.168]	0.060*** (0.009) [10.123]
Always wears seat belt	−0.048*** (0.008) [10.123]	−0.104*** (0.016) [6.432]	−0.053*** (0.015) [6.203]	−99.4* (59.9) [6.307]	−0.021*** (0.008) [10.156]

Note: Table reports results from OLS estimation of equation (2). Dependent variables are given in column headings. Each cell reports the results from a separate regression; it reports the coefficient on right-hand-side variable listed in the first column. All right-hand-side variables are measured in 1992 in columns 1 and 5, except for preventive health activity and seat belt use, which are measured in 1996; all right-hand-side variables are measured in 1995 in columns 2, 3, and 4. Heteroskedasticity-robust standard errors are in parentheses. Sample size is in square brackets.

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