

Health Insurance

Uninsured

Insured

Two Comments

First of two comments:

From Princeton Economist Uwe Reinhardt:

“Why does a country that spends close to 70 percent more on health care per capita than the next most expensive health system in the world [Germany] still leave close to 18 percent of its population without the economic, emotional and physiological benefits of health insurance coverage?”

Two Comments

Second comment: Most of us are not aware of the financial burden we bear for health care provided to ourselves and others.

- Self pay for a visit to a hospital ER, say for a broken leg.
- Employers pay on average 11% of salary for health benefits. Roughly equals \$2/hr.
- FICA-M
- A TV in most states, a pay check in Delaware,...

Number of Americans Who Lack Health-Care Coverage Is Rising:

Census Bureau Counts 43.6 Million, WSJ 9/30/03

“The figures, released early Tuesday by the U.S. Census Bureau, show that 15.2% of Americans didn't have coverage for all of last year, an increase of 2.4 million people from 2001, when 14.6% were uninsured.

The 5.8% rise in the uninsured resulted from a decline in the percentage of people covered by employer-based insurance -- 61.3% last year, down from 62.6% the year before. That deterioration, economists say, reflected increases in unemployment and the rise in health-care costs, which prompted some employers to drop coverage.”

“Young adults were less likely than any other age group to have health insurance. Last year, 29.6% went without, up from 28.1% the year before. Health analysts attribute the increase to decisions by young, healthy workers to opt out of employer-sponsored health plans as employee contributions rise. In addition, they say, some younger workers couldn't find jobs because of economic conditions.”

Who Are the Uninsured?

- Mostly adults, not children — half are childless adults.
- What age group?
- Poor and near-poor — 60% have incomes above federal poverty level
- Workers and family members — 80% in families with at least 1 worker
- Unskilled laborers, service workers.

Uwe Reinhardt, “working stiffs”

Do the uninsured receive necessary
health care?



Often No... Compared to the Insured Population, the Uninsured...

- Have higher rates of preventable and/or untreated illness
- Are less likely to receive care that they feel they need
- Have more preventable hospitalizations
- Have shorter hospital stays for the same conditions
- Are hospitalized sicker and have poorer health outcomes (including death)...

The Uninsured...

- Are not known to be a sicker or higher-cost population.
- Pay higher medical fees. (NYT, 4/2/01) “A New York gynecologist says he gets \$25 for a routine exam for a woman insured by group health insurance and charges \$175 for the same exam for a woman without insurance.”...

“The care of the poor once was supported by the wealthy and the insured, but now the opposite is happening.”

Health Insurance and the Consumer Role

- Consumers demand health insurance and often purchase it in markets
- Two key issues that can lead to market failure:
 - Moral hazard
 - Adverse selection

Key Definitions

- **Moral hazard** Health insurance affects consumer demand for health care – higher utilization of covered services
- **Adverse selection** When given a choice, people who choose to purchase insurance are likely to be a group with higher than average losses. (Also applies to a choice between low-option and high-option plans.)

The Demand for Health Insurance

- Why do consumers value health insurance?
 - Illness, injury and disability are to a large extent random events
 - Hospitalizations, serious injury, and rehabilitation and other advanced modern treatments can be very expensive
 - Most households are averse to risk
- What is risk aversion

What is Risk Aversion?

- A simple test to see if you are “risk adverse.”
- Which would you select?
 - * Your pay check, OR
 - * Double your pay check for correctly picking one coin flip.
 - * Equal expected values; most of us are risk adverse and select the “certain” \$500 option.
- Risk aversion - the degree to which a *certain* income is preferred to a *risky* alternative with the same expected income.

Private Market Insurance: A Simple Example

- Start with 100 middle-aged executives sent by XXumma Corp. to Eastern Europe for a year.
- Suppose we can predict that one was going to have a heart attack, requiring a \$50k CABG procedure.
- But, we don't know who will be the unlucky one.
- Form a club with each exec putting in \$500.
 “Actuarial fair premium” = $1/100 \times \$50,000$
- Would executives be willing to pay a 10% mark-up (loading fee) just to get their premium money back (collectively) as a benefit payment?

Demand for Health Insurance Keys

- Presence of aversion makes consumers willing to pay to spread risk with others.
- Insurance companies specialize in pricing risks, not in taking risks.
- Lesson from the theory of insurance: the losses that are insured are: large, infrequent, random, and not associated with a large moral hazard.

Health Insurance

- Main Types
 - Fee-for-service (indemnity)
 - Managed care (pre-paid)
- Key Terms
 - Deductible
 - Copay/Coinsurance
 - Stop Loss
 - Limit

Insurance: Declining Block Pricing (Out-of-Pocket Spending)



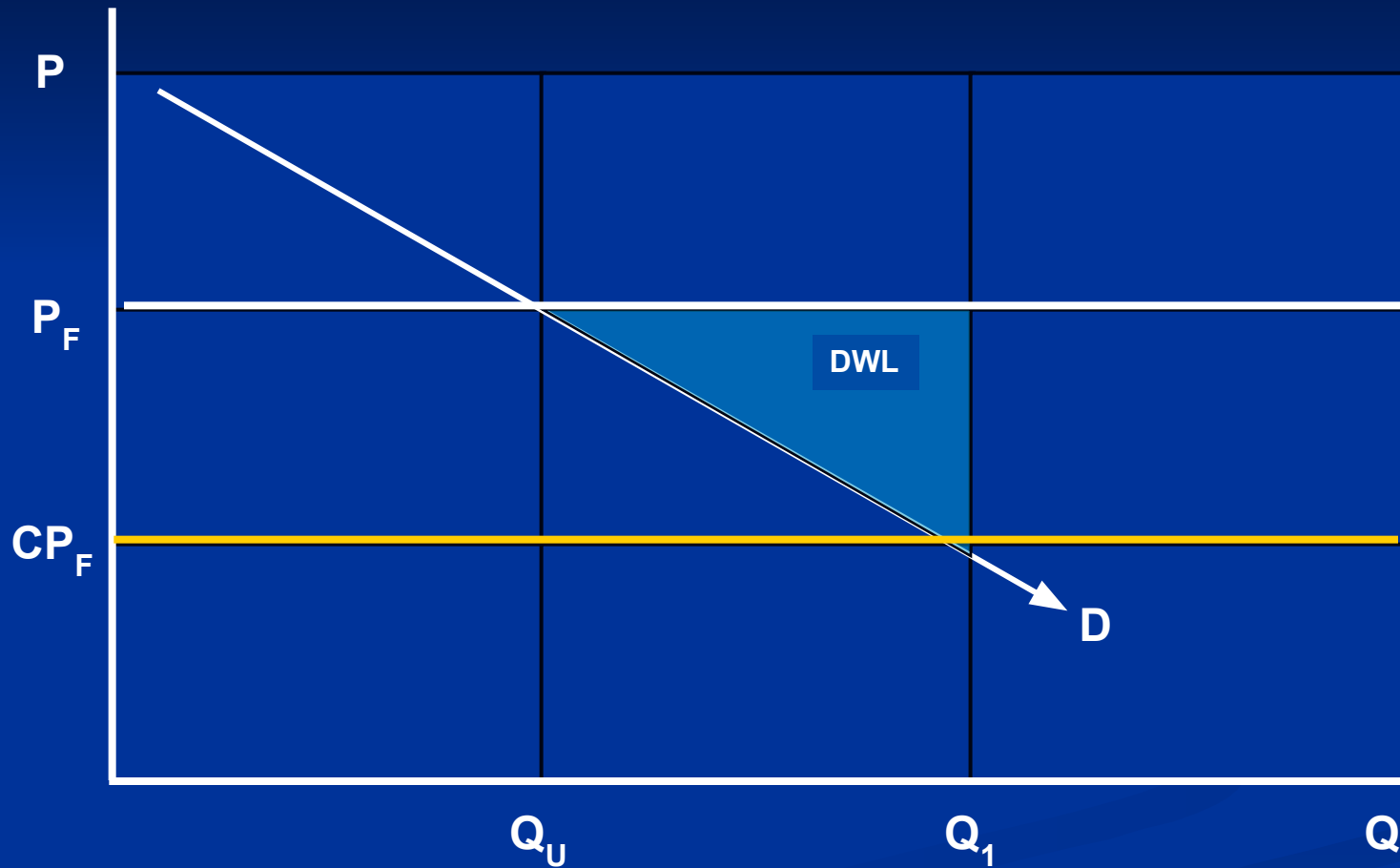
Pricing Blocks: Deductibles, Copays and Limits



Question

- Why do we observe deductibles, co-pays, limits, and exclusions?

Moral Hazard and Demand



Practice Exercise

- What is the relationship between price elasticity of demand and size of the moral hazard (deadweight loss)?

Question: If you designed a health care plan...

- Hospital Care
- Surgical & in-hosp medical
- Outpatient doctor
- Dental exams/cleaning
- Mental health
- Over the counter drugs
- Flu shots

Patterns of Insurance Coverage

Type of Health Care	Variance of Financial Risk	Demand Elasticity (RHIE)	% of People Under 65 Insured
Hospital Care	Highest	-0.15	80
Surgical & in-hosp	High	-0.15	78
medical outpatient doctor	Medium	-0.3	40-50
Dental	Low	-0.4	40

The losses that are insured are: large, infrequent, random, and not associated with a large moral hazard.

Question

- You're an insurance broker.
- Suppose the average health expenditure for an adult equals \$6000.
- To make a quick \$4000, would you accept \$10,000 to provide health insurance coverage for one adult?
- If not, what's the minimum premium you'd accept?

You be the benefit consultant

Harvard University

Budget Problem

- 1994, Harvard University was facing a substantial deficit in the employee benefits budget.
- Offered both HMO plans and a more expensive PPO health insurance plan.
- Harvard generously subsidized the more expensive, “high-option” PPO plans for employees.
- Needed to reduce employee benefit costs...

Harvard's Strategy

- 1995, Harvard decide to contribute the same amount to employee plans regardless of which type they chose.
- Employee contributions increased for both the HMO and PPO plans, but more severely in the more expensive PPO plans.

Changes in Employee Premiums

		Employee Pays:	
	Premium	Old	New
Individual PPO Flex	\$2,733	\$555	\$1,152
Individual HMO	\$1,980	\$277	\$421
Family PPO Flex	\$6,238	\$1,248	\$2,208
Family HMO	\$5,395	\$776	\$1,191

Employees' Response:

- Enrollment in the more generous, more expensive PPO plans decreased.
- What would you predict about the characteristics of those employees who switched?

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- Enrollment in the more generous, more expensive PPO plans decreased.
- What would you predict about the characteristics of those employees who switched?
 - Those employees who switched tended to be younger and had spent less on medical care the previous year.

Final Results:

- Due to decreased enrollment, premiums for the high option PPO plans increased, making the PPO option even more expensive =>
- More employees were (voluntarily) “pushed out” of the expensive PPO plans =>
- By 1997, the PPO plan was discontinued, completing the adverse selection “death spiral” in just three years.

Plan Enrollment

	1994	1995	1996	1997
Individual PPO Flex	16%	13%	8%	discontinued
Individual HMO	84%	87%	92%	100 %
Family PPO Flex	22%	18%	11%	discontinued
Family HMO	78%	82%	89%	100 %



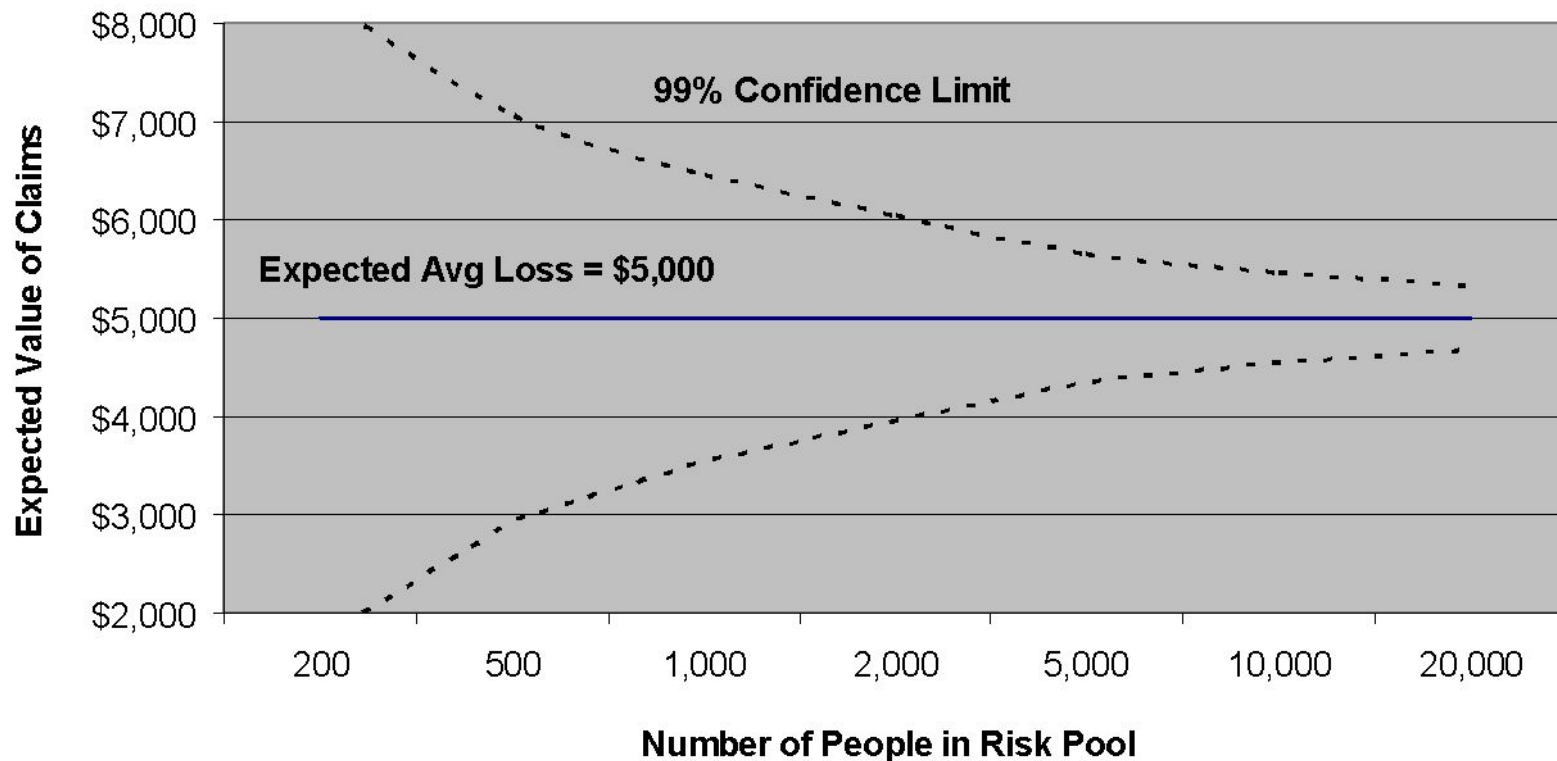
A Game: Pick One of the Following 3 Opportunities:

- C1: \$350 paid in cash
- C2: \$1000 for correctly picking one coin flip
- C3: Flip the coin 1000 times. Your take equals: %heads X \$1000.

To Better Understand These Choices, It Helps to Know Your Risks

- Group insurance reduces “secondary risk.”
- Two kinds of risk . . .
 - *Primary risk*: calculated odds that a bad event will occur (\$6000 expected value of health costs for an adult.)
 - *Secondary risk*: chance that the actual payout doesn't equal the calculated expected value. (The calculation proves to be wrong.) Larger numbers reduce secondary risk.

Secondary Risk (Variability) Declines as the Size of Risk Sharing Pool Increases





Adverse effects of adverse selection

Start with a *community-rated*, self-pay health plan

- Community of four with insurance premium = \$3000

Person “A” with $E(B) = \$600$

“B” $E(B) = \$2000$

“C” $E(B) = \$4000$

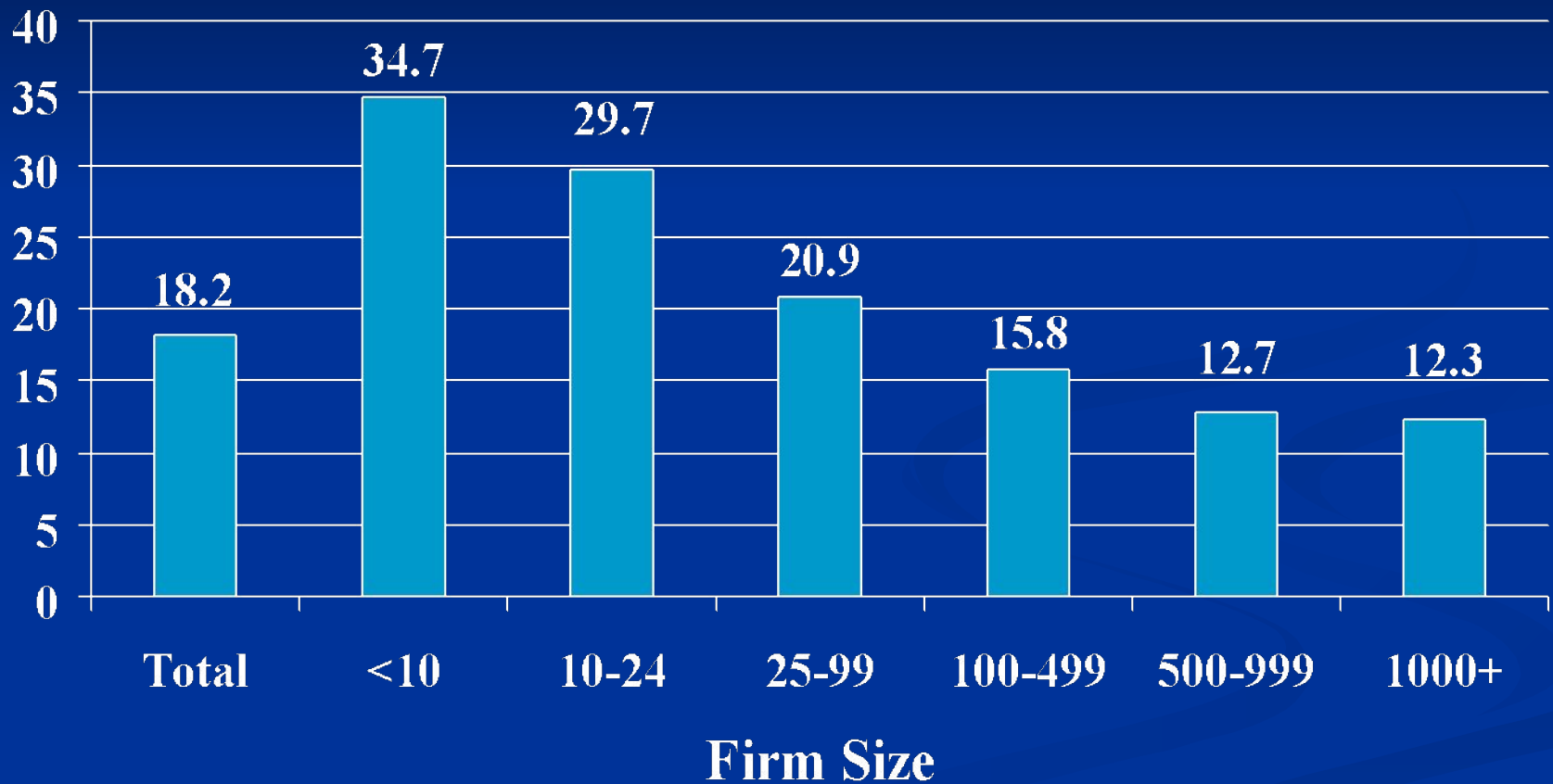
“D” $E(B) = \$6000$

- Marginal analysis: $E(B)$ vs $E(C)$

- Decision of healthier enrollees “A” and “B”?
- Avg. cost per enrollee increases.
- Premiums increase $\Rightarrow$ “C” drops out.
- ...and this can create a “*killer price spiral*”

Severe adverse selection can set in motion price spirals that theoretically can cripple or destroy insurance markets.

Percentage of Uninsured Workers Ages 18-64, by Firm Size (1997)



Rising health costs take bite out of small biz — USA Today 10/5/03

“Small-business profits are getting pinched because of price increases for employee health insurance. Among small companies that posted lower earnings in August vs. a year ago, 18% blamed higher insurance costs, says a survey of 544 firms by the National Federation of Independent Business trade group. In a similar survey a year ago, 11% blamed health insurance costs for their earnings dip.”

While the average health insurance premium for workers jumped 13.9% this year from 2002, the increase was bigger for small employers:

3-9 workers	16.6%
10-24	15.2%
25-49	14.3%
50-199	15.9%

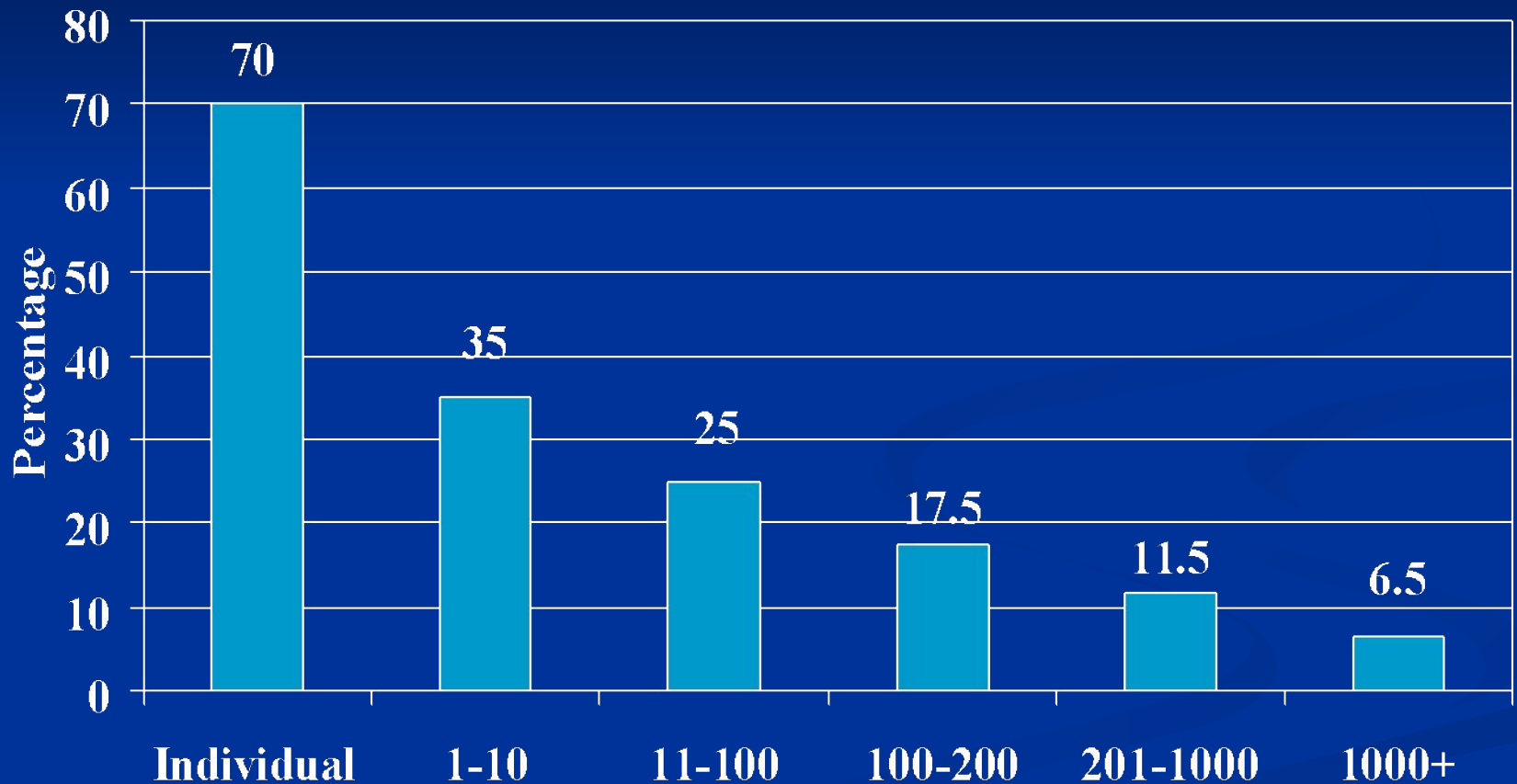
Source: Kaiser Family Foundation

How to Price Insurance Policies?

- $\text{Premium} = f(\text{Expected value of claims, loading costs})$.
- Loading cost: administrative and other costs associated with underwriting insurance policies.
- $\text{Loading costs} = (\text{risk premium} + \text{administrative costs} + \text{marketing costs} + \text{profits})$
- Loading costs = “price” of insurance

Typical Loading Fees by Group Size

As a Percent of Benefits (Phelps, p. 343)



Question: Why is Small Group Health Insurance So Expensive?

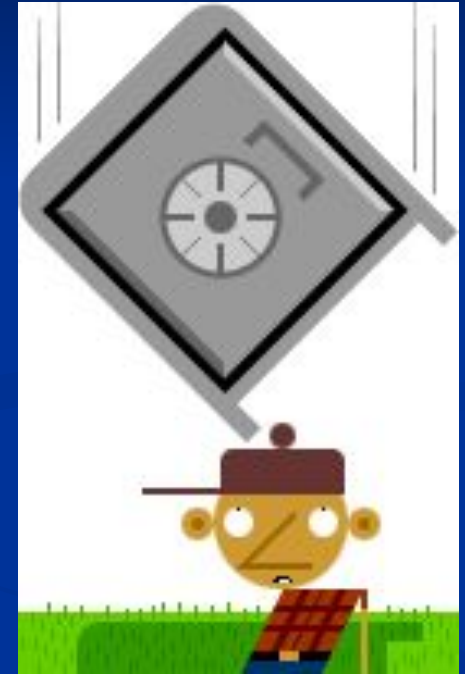
- Per capita loading costs decrease as firm group size increases.

Loading costs = (risk premium + administrative costs + marketing costs + profits)

- Small group purchasers have less bargaining power.
- Adverse selection.

Do People Choose to Die?

- Actuaries have found that statistically people who buy life insurance are more likely than average to die.
- Is this a “moral hazard” or an “adverse selection” problem?



Possible Solutions to the *Adverse Selection* Problem?

- Waiting periods
- Preexisting condition exclusions
- Risk rating (underwriting)
- Insurance that precludes individual selection according to subscribers' perceptions of their own risk (Universal health insurance, employment-based insurance)

Possible Solutions to the Moral Hazard Problem?

- (Higher) co-payments
- (Higher) deductibles
- Utilization review
- Since size of moral hazard problems (DWL) increases with price elasticity of demand, offer less generous insurance for specific services with more elastic demand (e.g., mental health coverage).