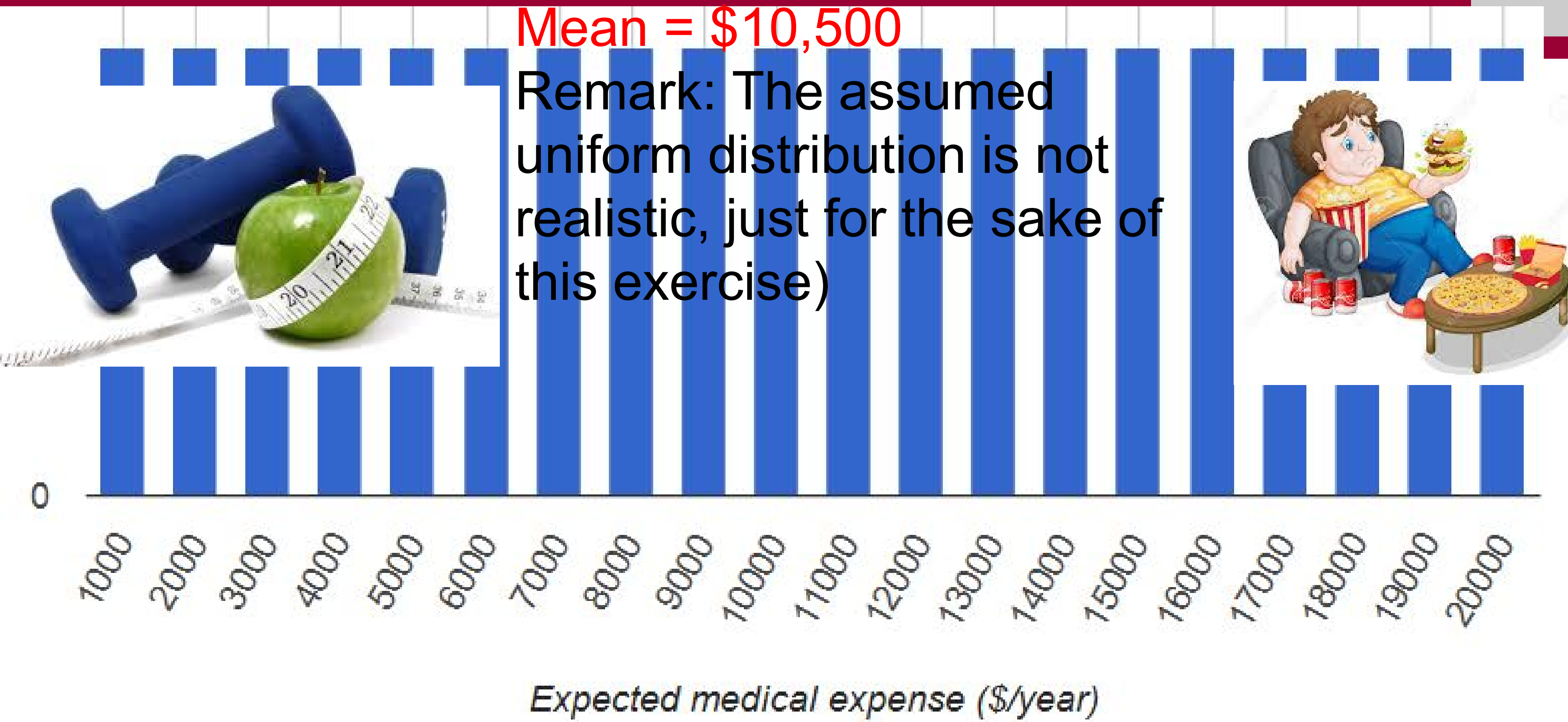
Lecture 21
Summary applications: Adverse selection

15.011/0111 Economic Analysis for Business Decisions

Oz Shy

In-class experiment: Would you buy a health insurance policy at the quoted premium?



Mean = $10,500

Remark: The assumed uniform distribution is not realistic, just for the sake of this exercise)

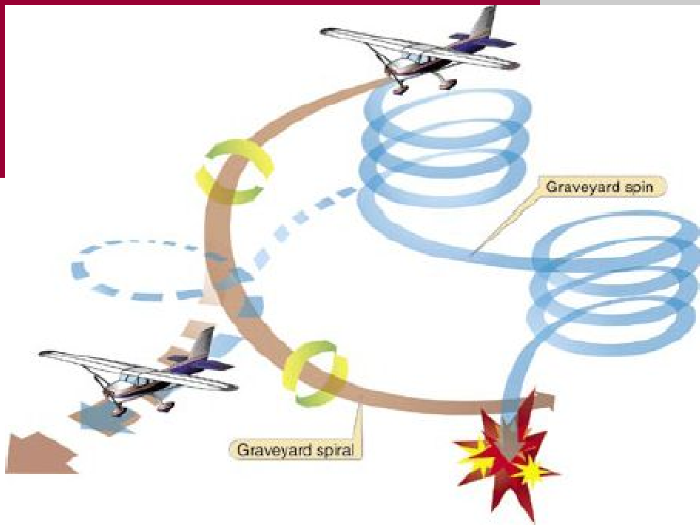
Stage I: Insurance company quotes yearly premium to all consumers (w/o being able to identify the consumer type)

Stage II: Consumers choose whether to enroll or not

Stage III: We compute expected profit and readjust the premium (if needed)

Our class experiment in the real life: Harvard's "death spiral" case

Harvard raises its BCBS premium causing the percentage of risky enrollees to increase



	Total Premium BC/BS	Total Premium HMO	Employee Premium BC/BS	% BC/BS Enrollees
1994	6,600	6,400	600	20
1995	6,400	5,500	1,050	15
1996	7,400	5,300	2,400	9
1997	Disbanded		Disbanded	

Asymmetric information: Definition

Occurs in a market where one party to a transaction has better information about the quality of the about-to-be-traded product than the other party

Examples:

1. Car market: Sellers of used cars know the quality of the car better than potential buyers

2. Health insurance: Buyers of health insurance have better information about their own health than the insurance company (seller)

3. Labor market: You know yourself better than a potential employer

Adverse selection: Definition

Adverse selection occurs in a market where sellers and buyers have asymmetric information about the product, thereby making the less-informed party reluctant to trade

Examples:

1. Seller of relatively-new used cars (1-2 years) must reduce the price by $2,000-$5,000 (relative to new cars) because buyers suspect that something is wrong with the car
   [otherwise, why anyone wants to sell relatively-new car?]
2. An insurance company refuses to insure an item fearing that only highly-risky consumers will purchase such insurance

Adverse selection versus moral hazard

Moral hazard refer to post-trade behavior (people with insurance take excessive risks knowing that the insurance company will pay)

Adverse selection refers to pre-trade behavior where the party with less information refuses to trade with a party that has better information

Remark: Asymmetric information is the essential ingredient in both cases

The market for 'lemons'

- Sellers of used cars would like to sell the bad cars (lemons) and keep the good cars for themselves
- Buyers may be reluctant to buy used cars
- Prices of used cars drop
- Sellers have even lower incentives to sell good cars
- The fraction of lemons offered for sale increases
- In extreme cases, good cars will not be offered for sale

<u>Some responses to the adverse selection problem</u>

1. Lemon law in some states (apply mainly to car dealers)
2. Liability laws (apply to sellers and manufacturing firms
3. eBay: Sellers are evaluated by buyers

The market for lemons: A simple model

Under symmetric information there are positive gains from trade, where:

$$\$7000 < p_G < \$9000$$
$$\$2000 < p_B < \$4000$$

Values	Seller	Buyer
Good Car (G)	\$7,000	\$9,000
Bad Car (B)	\$2,000	\$4,000

50% are G cars & 50% are B cars

Under asymmetric information, a risk-neutral buyer's maximum willingness to pay (WTP) = $\frac{1}{2}\$9000 + \frac{1}{2}\$4000 = \$6500$

Problem: An owner of a good-car will not sell at this price because:

$$p^{avg} = \$6500 < \$7000 = p_G$$

Hence, only bad cars will be sold for: $\$2000 < p_B < \$4000$

All-you-can-eat restaurants and adverse selection

St.Petersburg Times ONLINE TAMPA BAY

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All-you-can-eat was too much

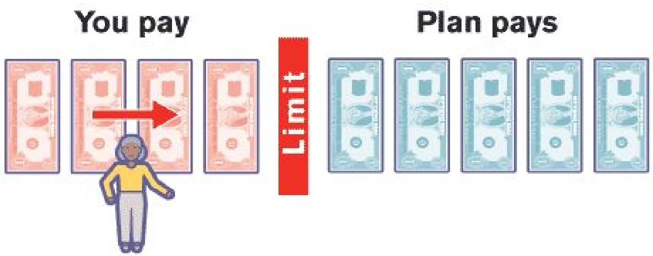
Red Lobster's chief is ousted after a crab promotion loses money. The parent company says that wasn't the reason.

By BENITA D. NEWTON, Times Staff Writer
Published September 26, 2003

Some partial solutions to the adverse selection problem

1. Don’t allow selection (e.g., government intervention)
   Example: The Affordable Care Act (Obamacare)
   European countries have national health insurance

2. Screening (a.k.a. consumer self-selection)
   Use menu pricing via deductibles



3. Signaling (engage in costly action to separate yourself from others, see next slide)

4. Reputation / standardization

Signaling

- Actions taken by individuals/firms to indicate quality
- For a signal to be effective it must be correct
- Individuals with a high quality signal must turn out to be the high quality individuals
- Usually the signal is costly to acquire; and less costly for high quality individuals/firms to acquire
  - Education
  - Advertising
  - Warrantees and guarantees