Presentation to accompany
Principles of Microconomics, Fourth Edition
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Lecture 12

Previously...

- Markets:
  - Demand and Supply
  - Elasticity
  - Welfare

- Firms:
  - Cost, Revenue, Profit
  - Perfect Competition (MC=P)
  - Monopoly (MC=MR)
  - Oligopoly (game theory)

Today...

- Frontiers of Microeconomics

  - Asymmetric Information
    - Adverse Selection
    - Moral Hazard

  - Behavioral Economics (Psychology)
    - Game Theory

Today…

- Rational & selfish (profit/utility maximizing) agents with full information and 'ideal' preferences

- Looking at the market – summing up the individuals

- Omitted – strategic interactions between agents

Micro these days – addresses these drawbacks

Asymmetric Information

- Relax the assumption of perfect information

- Strategic interaction between individuals, one of them has more information than the other

Asymmetric Information - a difference in access to relevant knowledge

Asymmetric Information

- Usual assumption: quality of good is perfectly observable

- Sometimes this information is not available or too costly to obtain

Examples?

Asymmetric Information

Examples:

- Labor market:
  - workers differ in their ability/productivity
  - next to impossible for the firm to find this out

- Used cars market:
  - seller knows the quality of the car
  - for buyer it is very costly to know

Asymmetric Information

Two types/classes of asymmetric information:
- Adverse selection
- Moral hazard

Adverse selection

The **unobservable (hidden) characteristic** is fixed; cannot be changed in response to incentives

Ex.: quality of goods (car) or services, employee's talent/ability

Moral hazard

The **unobservable (hidden) characteristic** is variable/**action;** the agent may change it in response to incentives

Principal-agent problem
Ex.: employee's effort

Adverse Selection

Adverse selection refers to the tendency for the mix of unobserved attributes to become undesirable from the standpoint of an uniformed party

Adverse Selection

Example of Adverse Selection:

Insurance: People with hidden health problems are more likely to want to buy health insurance than those with good health

In certain labor markets, if a firm reduces the wage it pays, high productivity workers tend to quit

Many times potential buyers may not even consider used cars because they assume that the sellers know something bad about the cars. This is also known as the lemons problem

Adverse Selection

Problem of lemons – market with used cars (Akerlof, Nobel Prize in 2001, with Stiglitz and Spence)

- The buyer cannot observe quality of the car he buys, the seller has more information
- Quality of the car is fixed (the seller cannot repair the car—we would speak of a different car then)

Adverse Selection

Problem of lemons - two types of used cars:
- half of cars are plums (high-quality car)
- half of cars are lemons (low-quality car)

Sellers:
- plum for $2000
- lemon for $1000

Buyers:
- plum for $2400
- lemon for $1200

Adverse Selection

If quality is observable, market price would be:
- plum: $2000 - $2400
- lemon: $1000 - $1200

=> All cars are traded

Problem: quality is unobservable:
- buyers are willing to pay "average price" = $1800
- only lemon owners are willing to sell for $1800

=> Only lemons are traded

Adverse Selection

Problem of lemons
Result – if there are too many lemons in the market, they drive down the price for good cars as well – ruin the market and push down quality of used cars

Solutions?

Adverse Selection

How do Markets respond to Asymmetric Information?

Signaling

Signaling refers to an action taken by an informed party to reveal private information to an uninformed party

Screening

Screening occurs when an action taken by an uniformed party induces an informed party to reveal information

Adverse Selection

Signaling

Seller is able to credibly <u>reveal</u> the private information—send a signal about the quality of the good/level of effort he put to work

To make it work—the signal has to be credible, it has to be costly (& cannot be copied by the low quality party)
Ex.: advertising, education (Spence), warranty

Screening

Buyer takes actions to induce the agent to reveal the information

Investment in monitoring; to observe the effort of employees, to evaluate quality of the goods to be bought, set up contracts in insurance (Stiglitz)

Moral Hazard

Moral hazard refers to the tendency of a person who is imperfectly monitored to engage in dishonest or otherwise undesirable behavior

An agent is a person who is performing an act for another person, called the principal

The principal is a person for whom another person, called the agent, is performing some act

We refer to this problem as principal-agent problem

Moral Hazard

- Employee chooses the level of effort he will put to work; has incentives to cheat, shirk his work, i.e. put in less effort that would be optimal for the principal

- Principal realizes this problem – to prevent such behavior, has to set up incentives for the employee to induce optimal level of effort

- Employers can respond to the moral-hazard problem in various ways:
    - Better monitoring
    - High wages (pay-for-performance)
    - Delayed payment

Behavioral Economics

Recently, a field called behavioral economics has emerged in which economists make use of basic psychological insights to examine economic problems

Behavioral Economics

People aren't always rational:

- People are overconfident

- People are reluctant to change their minds

- People care about fairness as demonstrated by the ultimatum game

- People are inconsistent over time

Behavioral Economics

People are overconfident

- about their own skills/abilities
- in comparison to others

Behavioral Economics

People care about fairness as demonstrated by the ultimatum game

- First person offers how to split 100 CZK.
- Second person accepts, or rejects (both gets zero)

- Theoretical prediction:
  - offer smallest possible share to the second player
  - accept everything larger than zero

- Evidence:
  - average offer: 40%
  - rejection rate: 17%

Behavioral Economics

People care about fairness as demonstrated by the ultimatum game

Evidence:
- high stakes (lower offer, fewer rejections)
- experience (lower offer)
- children (20-30% - reject; 40-50% - accept)
- chimps are more rational
- cultural differences
- role of social norms, cooperation, fairness

Behavioral Economics

People are inconsistent over time

Choose between:
- 100 CZK today – 120 CZK 1 week from now
  (usually 100 CZK is chosen)

- 100 CZK 1 year from now – 120 CZK 1 year and 1 week from now
  (usually 120 CZK is chosen)

Summary I

- In many economic transactions, information is asymmetric

- In case of hidden actions, principals may be concerned that agents suffer from the problem of moral hazard

- In case of hidden characteristics, buyers may be concerned about the problems of adverse selection among sellers

Summary II

- Solution
  - signaling (by seller, worker)
  - screening (by buyer, employer)

Summary III

- Behavioral Economics

  - replace Homo Economicus (fully rational, self-interested individual) with more realistic individual who:

    - is overconfident
    - is inconsistent in time
    - has sense of fairness