MANAGERIAL ECONOMICS CHAPTER 11

Competitive Markets Under Asymmetric Information

Chapter 11

Ankara University, Faculty of Political Science, Department of Economics, Onur Özsoy

Competitive Markets Under Asymmetric Information

Chapter 11

An assumption of pure competition was complete knowledge of all market information. But knowledge can be unevenly distributed among firms and consumers.

The concept of a "lemon" in the car market and adverse selection problem are only two of the interesting market phenomena when information is unevenly distributed (asymmetric) among the market participants

Asymmetric Information

- Used car: who knows what about it?

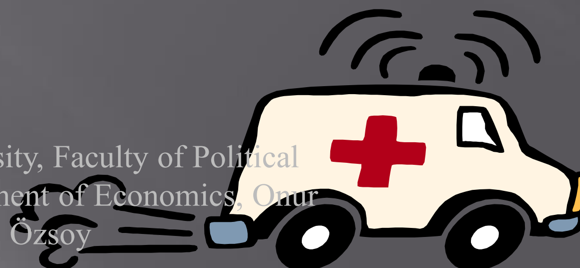
- **Incomplete Information** -- uncertain knowledge of payoffs, choices, or types of opponents a market player faces.
- **Asymmetric Information** -- unequal or dissimilar knowledge among market participants.

Incomplete Contracting and Incomplete Markets

- Insurance works when we can pool a group of possible events (like injuries at work) to reduce the risk of loss to any one party.
- **But some risks are catastrophic**, like a nuclear accident. It is difficult to assess the likelihood or the damage; hence, insurance in this case is often unavailable.
- Contracts can specify duties under several states of the world, but sometimes the outcomes are too numerous or unknowable for years. This creates **incomplete contracts**.

Types

- **Full contingent claims contract** -- specifies all possible future events.
- **Incomplete contingent claims contract** -- not all possible future events are specified.
- Due to incomplete contracts, some people may take advantage of spirit of the contract.
  - Accident insurance may permit people to succumb to a **moral hazard** by acting recklessly.



Asymmetric Information in a Lemon's Market

- **Search goods** are products or services whose quality is best detected through a market search.
- **Experience goods** are products and services whose quality is undetected when purchased.
- To protect consumers, warranties and firm reputations are used to assure quality.
- But if someone is selling his or her car, isn't it likely that the car is no good: *a lemon?*
- If one firm defrauds customers, **how do the reputable firms signal that they are NOT like the fraudulent firm?**

Adverse Selection and the Notorious Firm

- Game: A firm may decide to produce a **High Quality** or **Low Quality** product, and the buyer may decide to offer a High Price or a Low Price.
- Since the firm fears that if it offers a High Quality product but that buyers only offer a Low Price, they only produce Low Quality products and receive Low Prices.
- This is the problem of adverse selection

Notorious Firm Game Analysis

- Simultaneous decisions
- A risk averse decision by the firm is to make a **Low Quality** product
- Best for the buyer is a low price, but a high quality good. Worst is a High price but a Low quality good.

BUYER

SELLER	Hi Price	Low Price
High Quality	130	70
Low Quality	150	90

Payoffs are for the Seller only

Solutions to the Problem of Adverse Selection

- Regulation (Disclosure Laws, Truth in Lending)
- Long term relationships, or reliance relationships
- Brand names (a form of a "hostage" to quality)
- Nonredeployable assets are assets that have little value in another other use
  - *Example*: Dixie Cups made with paper-cup machinery which cannot be used for other purposes – if Dixie Cups leak, the company is in trouble

Cost Revelation in Joint Ventures and Partnerships

- Potential partners have different information when beginning a venture together
- The Clarke tax mechanism
  - The mechanism is to assign probabilities to the revelation of costs of the partner.
  - After the other partner's expected costs are covered, they receive the residual or net profit.
  - Then each has an incentive to reveal their true cost.

Optimal Incentives Contract

- is an agreement about the payoffs and penalties that creates appropriate incentives
- If the contract creates a stream of profits, then a breach is a costly penalty

example: an employee who steals is fired! If the employee felt the employment at that firm was rewarding, the penalty of firing is severe.

Principal–Agent Problem in Managerial Labor Markets

- Stockholders (principals) hire managers (agents) with different incentives.
- Alternative labor contracts
  - Pay based on profits
  - Paying a bonus on top of a salary when goals are exceeded
  - Have manager own stock
- Benchmarking involves a comparison of similar firms, plants, or divisions

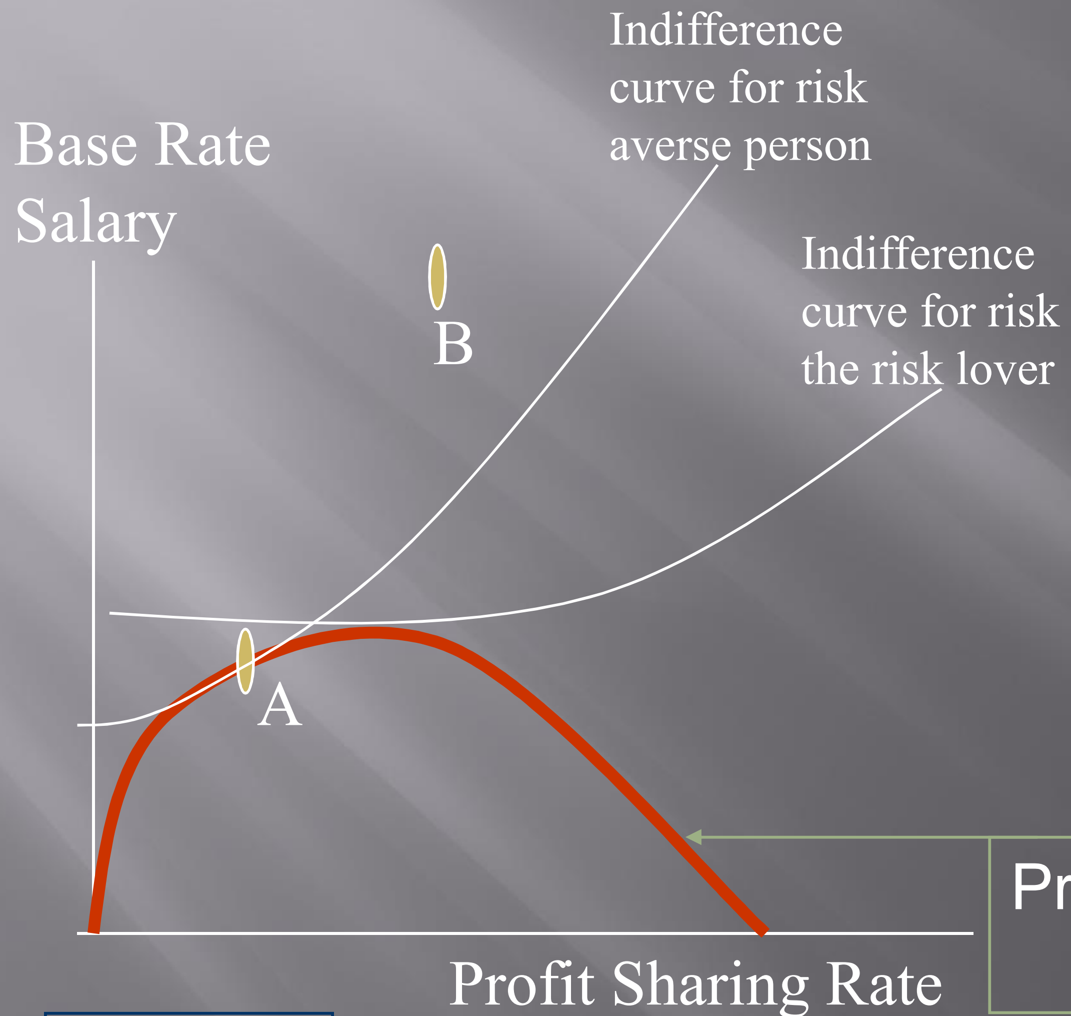
Signaling and Sorting of Managerial Talent

- Applicants to positions know more about themselves than they reveal, which is the problem of asymmetric information.
- For example, is the applicant highly risk averse or a risk taker?
- How can we sort between risk-takers and risk averse candidates?

One Sorting Method

- A **Linear Incentive Contract** provides a combination of salary and (plus or minus!) a profit sharing rate.
- An offer that dominates all other offers will not help distinguish among applicants. This is a **pooling equilibrium.**
- Offers that distinguishes between behaviors is a **separating equilibrium**.
- For example, a **risk averse** person would tend to select an offer which primarily paid a base salary
- Whereas the **risk-loving** individual would tend to select an offer with more profit sharing.

Sorting Managers with Incentives



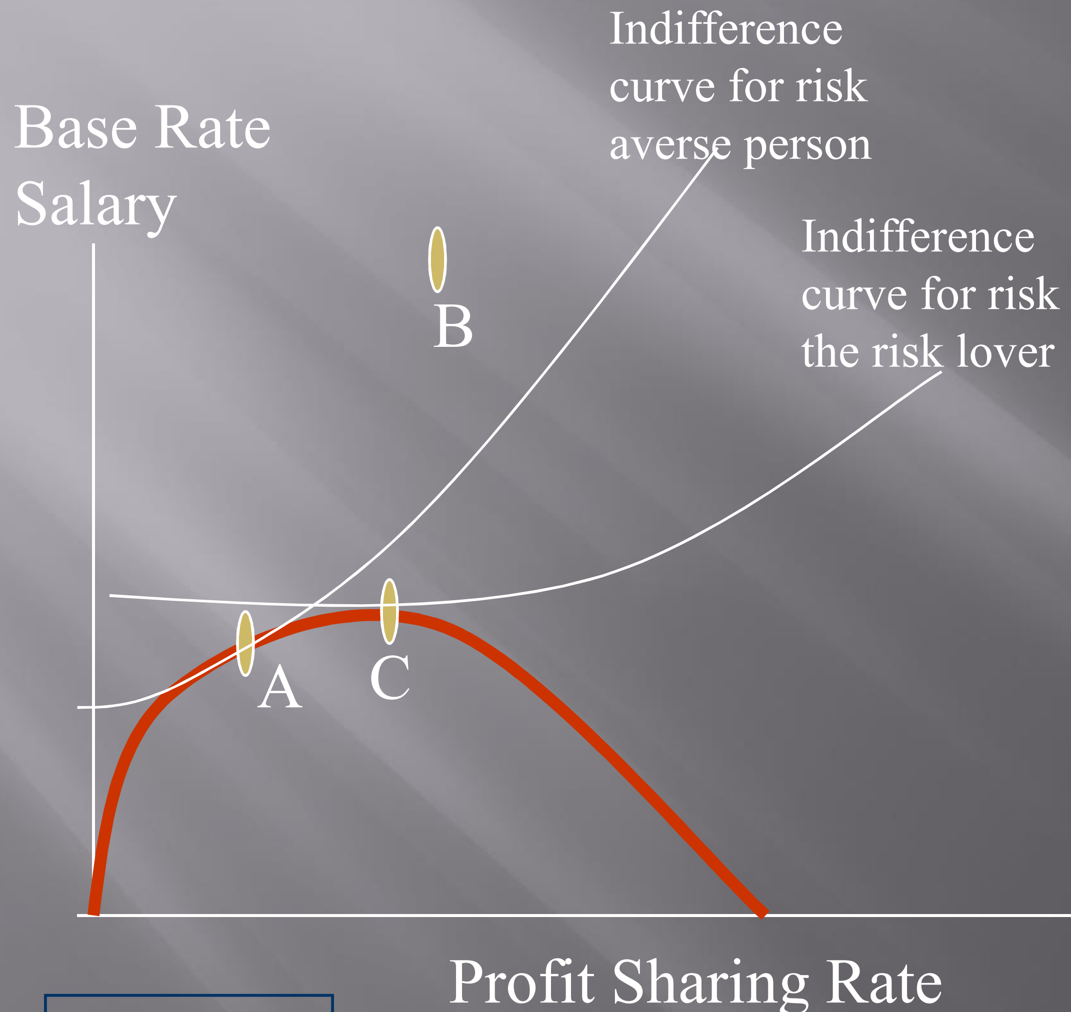
in ± percentages

Figure 11.4

- **Contract A** has lower profit sharing rate and lower base rate than **Contract B**
- Both the risk averse and the risk lover picks contract B over contract A
- A pooling equilibrium

Profit Sharing points of equal profit to the firm

Sorting Managers with Incentives



- **Contract A** has a lower profit sharing rate and a lower base rate than **Contract C**
- However, the risk lover prefers C to A
- The risk averse person prefers A to C
- A **separating equilibrium** is offering A or C.