

**In this chapter,
look for the answers to these questions**

- How does asymmetric information affect market outcomes? How can market participants reduce the resulting problems?
- Why might democratic voting systems fail to represent the preferences of society?
- Why do people not always behave as rational maximizers?

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Introduction

- Microeconomics continues to evolve.
- This chapter introduces three active areas of research:
 - Asymmetric information
 - Political economy
 - Economics and Psychology (aka “Behavioral economics”)

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Asymmetric Information

- **Information asymmetry:** a difference in two or more parties’ access to relevant knowledge
- Two types:
 - **Hidden actions** – one person knows more than another about an action he or she is taking.
 - **Hidden characteristics** – one person knows more than another about the attributes of a good he or she is selling.

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Hidden Actions and Moral Hazard

- **Moral hazard:** the tendency of a person who is imperfectly monitored to engage in dishonest or otherwise undesirable behavior
 - Workers sometimes shirk their responsibilities because their employer cannot continually monitor their effort and performance.
 - Someone whose property is insured may not try as hard to protect it from theft/damage.
 - While the parents are out, the babysitter may spend more time watching videos than watching the children.

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The Principal-Agent Problem

- **Agent:** a person who is performing a task on someone else’s behalf (e.g., a worker)
- **Principal:** the person for whom this action is being performed (e.g., an employer)
- When the principal cannot perfectly monitor the agent’s behavior, there is a risk (“hazard”) that the agent may do something undesirable (“immoral”).
 - Example: Worker may play video games or surf the web while on the clock.

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How Principals May Respond

- **Better monitoring**
Parents plant hidden cameras in the home to increase the chance of detecting undesirable behavior.
- **Higher wages**
Employers pay workers **efficiency wages** (wages above the equilibrium level) to increase the penalty for being caught shirking.
- **Delayed payment**
Firms delay payment (e.g., year-end bonuses) to increase the penalty for being caught shirking.

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Corporate Management

- The separation of ownership and control of corporations creates a principal-agent problem:
 - Principals: the shareholders, pay managers to maximize the firm's profits
 - Agents: the managers, may pursue their own objectives
- Shareholders hire a board of directors to oversee management, create incentives for management to pursue the firm's goals instead of their own.
- Corporate managers sometimes sent to jail for taking advantage of shareholders.

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Hidden Characteristics and Adverse Selection

Adverse selection arises when the seller knows more than the buyer about the good being sold.

Example 1: The market for used cars

- The seller knows more than the buyer about the quality of the car being sold.
- Owners of "lemons" are more likely to put their vehicles up for sale.
- So buyers are more likely to avoid used cars.
- Owners of good used cars are less likely to get a fair price, so may not bother trying to sell.

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Hidden Characteristics and Adverse Selection

Example 2: Insurance

- Buyers of health insurance know more about their health than health insurance companies.
- People with hidden health problems have more incentive to buy insurance policies.
- So, prices of policies reflect the costs of a sicker-than-average person.
- These prices discourage healthy people from buying insurance.

In both examples, the information asymmetry prevents some mutually beneficial trades.

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Market Responses to Asymmetric Information

The Market Itself is a **response** to asymmetric information (hidden characteristics of buyers/sellers)

- Competition results in a market price
- Buyers with values above this price would buy
- Sellers with costs below this price would sell
- "As if" there is full information
- Asymmetric information per se is NOT a problem
 - if we have a good mechanism to solve it
- Question: Do you think markets are the result of "natural selection" or "intelligence design"?

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Market Responses to Asymmetric Information

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

- Individual selling a good used car provides all receipts for work done on car.
- Dealership provides warranties on used cars.
- Firms spend huge sums on advertising to signal product quality to buyers.
- Highly competent workers get college degree to signal their quality to employers.

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Market Responses to Asymmetric Information

Screening: action taken by an uninformed party to induce informed party to reveal private information

- Health insurance company requires physical exam before selling policy.
- Buyer of a used car requires inspection by a mechanic.
- Auto insurance company charges lower premiums to drivers willing to accept a larger deductible—they are most likely the safer drivers.

Asymmetric Information and Public Policy

- Asymmetric information may prevent market from allocating resources efficiently.
- Yet, public policy may not be able to improve on the market outcome:
 - Private markets can sometimes deal with the problem using signaling or screening.
 - The govt rarely has more information than private parties.
 - The govt itself is an imperfect institution.

ACTIVE LEARNING 1 Asymmetric information

For each situation below,

- identify whether the problem is moral hazard or adverse selection.
- explain how the problem has been reduced.

- A.** iDaiwan Audio sells home theater sound systems over the Internet and offers to refund the purchase price and pay shipping both ways if the buyer is not satisfied.
- B.** Landlords require tenants to pay security deposits.

ACTIVE LEARNING 1 Answers, part A

iDaiwan Audio sells home theater sound systems over the Internet and offers to refund the purchase price and shipping both ways if the buyer is not satisfied.

- **Adverse selection:**
Buyers may fear that systems purchased on the Internet will not sound good, since the sellers know that buyers cannot hear them first.
So, firms with good systems are less likely to be successful selling them on the Internet.
- iDaiwan Audio reduces the problem by signaling high quality with its generous return policy.

ACTIVE LEARNING 1 Answers, part B

Landlords require tenants to pay security deposits.

- **Moral hazard:**
The landlord (principal) does not know how well the tenant (agent) treats the apartment.
Tenants may not be careful if they can get away without paying for damage they cause.
- The security deposit increases the likelihood the tenant will take care of the property in order to receive his deposit back when he moves out.

Political Economy

- **Political economy** applies the methods of economics to study how government works.
- First, we consider voting.
- **Condorcet paradox:** the failure of majority rule to produce transitive preferences for society.
- **Transitivity** is a property of preference rankings: If **A** is preferred to **B**, and if **B** is preferred to **C**, then **A** should be preferred to **C**.

Example of the Condorcet Paradox

A, **B**, and **C** are three candidates running for an open seat on the city council.

There are 3 types of voters, each with its own rankings of the candidates:

| | Voter Type | | |
|-----------------|------------|----------|----------|
| | Type 1 | Type 2 | Type 3 |
| % of all voters | 35% | 45% | 20% |
| 1st choice | A | B | C |
| 2nd choice | B | C | A |
| 3rd choice | C | A | B |

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Example of the Condorcet Paradox

Suppose pair-wise voting in the following order:

- First, **B** runs against **C**. **B** wins against **C**: **C** wins.
- Then, **A** runs against **B**. **A** wins against **B**: **B** wins.
- The overall winner: **A**.

| | Voter Type | | |
|-----------------|------------|----------|----------|
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| 3rd choice | C | A | B |

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Lessons from the Condorcet Paradox

- Democratic preferences are not always transitive.
- The order on which things are voted can affect the result.
- Majority voting does not always reveal what society really wants.

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Arrow's Four Desirable Properties of a Voting System

- Unanimity:**
If everyone prefers **A** to **B**, then **A** should beat **B**.
- Transitivity:**
If **A** beats **B**, and **B** beats **C**, then **A** should beat **C**.
- Independence of irrelevant alternatives:**
The ranking between any two outcomes should not depend on whether a third option is available.
- No dictators:**
There is no person who always gets his way, regardless of everyone else's preferences.

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Arrow's Impossibility Theorem

- Arrow proved that no voting system can satisfy all four properties.
- Arrow's impossibility theorem:** a mathematical result showing that, under certain assumed conditions, there is no scheme for aggregating individual preferences into a valid set of social preferences

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The Median Voter Theorem

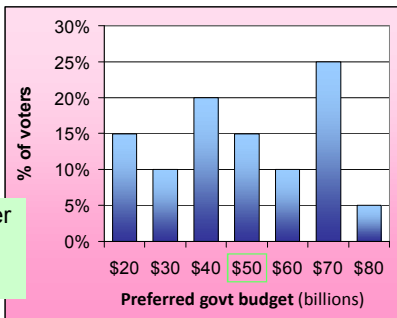
- Suppose society is deciding the level of the government budget.
- Each voter has her own preferences about the size of the budget.
- If you line up all voters in order of their budget preferences, the median voter is the one right in the middle.
- Median voter theorem:** a mathematical result showing that majority rule will always pick the outcome most preferred by the median voter

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Example of the Median Voter Theorem

The median voter prefers a budget of \$50 billion.



The choice closest to \$50 will win any two-way race.

Suppose the choices are \$40 and \$70.

\$40 will win, even though more voters prefer \$70!

Implications of the Median Voter Theorem

- In a two-party or two-candidate race, each party will move its position toward that of the median voter.
- Minority views are not given much weight.

Politicians are People Too

- Politicians motivated by self-interest, just like firms and consumers.
- Some politicians motivated by re-election, willing to sacrifice the national interest toward that goal.
- Others motivated by greed.
- The lesson:
Economic policy is not made by benevolent leaders, and sometimes fails to resemble the ideals derived in economics textbooks.

ACTIVE LEARNING 2

Application of the Median Voter Theorem

- Would you expect the DPP presidential nominee to be more pro-independence during the primaries or the general election, or to be consistent throughout both?
- Would you expect the KMT nominee to be more anti-independence during the primaries or the general election, or to be consistent throughout both?

ACTIVE LEARNING 2 Answers

- The median voter in DPP primaries is more pro-independence than the median voter in the general election. So, the DPP candidate's best strategy is to act more pro-independence during the primaries and more centrist during the general election.
- Similarly, the KMT candidate will want to appeal more to the median KMT voter during the primaries, and then appear less anti-independence during the general election.

Economics and Psychology

- **Aka "Behavioral economics"**: the subfield of economics that integrates the insights of psychology
- People aren't always as rational as traditional economic models assume.
- Herbert Simon viewed humans as **satisficers**, people who make choices that are merely "good enough" rather than optimal.
- Other economists have suggested that people are only "near rational" or exhibit "bounded rationality."

People Aren't Always Rational

Studies find that people make systematic mistakes:

- People are overconfident.
- People give too much weight to a small number of vivid observations.
- People are reluctant to change their minds.

Even though people are not always rational, the assumption that they are is usually a good approximation for economic modeling.

(The question is can we get a "better" approximation with behavioral economic theory...)

People Care About Fairness

People's choices are sometimes influenced more by their sense of fairness than self-interest.

Example: **The ultimatum game**

The rules

- Two players who do not know each other have a chance to share a prize of \$100.
- Player **A** decides what portion of the prize to give to player **B**.
- **B** must accept the split or both get nothing.

People Care About Fairness

Predicted outcome if both players rational

- **A** would propose a 99-1 split and **B** would accept, because \$1 is better than nothing.

Actual outcomes from experiments with real people

- **B** usually rejects lopsided splits like 99-1 as wildly unfair.
- Expecting this, **A** usually proposes giving \$30 or \$40 to **B**.
- **B** views this as unfair, but not so much as to abandon his self-interest, so **B** accepts.

People Care About Fairness

- The results of the ultimatum game apply in other situations.
- Example:
A firm may pay above-equilibrium wages during profitable years to be fair, or to avoid appearing unfair and risking retaliation from workers.

People Are Inconsistent Over Time

- People tend to prefer instant gratification, even when delaying would increase the gratification.
- Result: People fail to follow through on plans to do things that are dreary, take effort, or cause discomfort.
 - E.g., people often save less than they plan
- To help follow through, people look for ways to commit themselves to their plans.
 - E.g., worker has money taken out of paycheck before he ever sees it

CONCLUSION

Recall two of the Ten Principles from Chapter 1:

Markets are usually a good way to organize economic activity.

Governments can sometimes improve market outcomes.

Research at the frontiers of microeconomics illustrates some caveats that go with these principles:

- Consumers aren't always rational.
- Market outcomes may not be best when information is asymmetric.
- Government solutions are not always ideal.

Summary

- In many transactions, information is asymmetric. When there are hidden actions, principals may be concerned that agents suffer from the problem of moral hazard. When there are hidden characteristics, buyers may be concerned about the problem of adverse selection among the sellers.
- Private markets sometimes deal with asymmetric information with signaling and screening.

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Summary

- Governments are imperfect institutions. The Condorcet paradox shows that majority rule does not always produce transitive preferences for society. Arrow's impossibility theorem shows that no voting system will be perfect.
- In many situations, majority voting will produce the outcome desired by the median voter, regardless of the preferences of everyone else.
- Policymakers may be motivated by self-interest rather than the national interest.

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Summary

- In contrast to the behavior assumed in traditional economic models, insights from psychology suggest that decision making is more complex.
- People are not always rational. They care about the fairness of outcomes even to their detriment, and they can be inconsistent over time.

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Frontiers of Microeconomics

- Asymmetric Information
 - Experiment 12 is a "lemon" market!
- Political Economy
 - Political candidates act like "location" firms!
- Economics and Psychology (Behavioral Economics)
 - What theory says vs. What people actually do
 - **My own research agenda is on these topics!**
 - Please talk to me after class if you interested...
- Homework: Mankiw, Ch.22, Problems 2, 3, 4, 5, 6, 7, 9.

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Frontiers of Microeconomics

- **Behavioral Game Theory and Eyetracking**
- Eyetrack people when they are
 - Playing cheap talk (lying) games
 - Learning to play normal form games
 - Answering Trivia questions
 - Playing spatial beauty contest games
- **Asymmetric Information and Experiments**
 - Cheap talk (lying) games
 - Sequential auctions
 - Least Unique Positive Integer (LUPI) games

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Frontiers of Microeconomics

- **Recommendation for Further Studies**
- 1. Take good courses such as:
 - 古慧雯/黃貞穎's Intermediate Microeconomics
 - 陳旭昇+駱明慶's Statistics and Econometrics
 - My Experimental Economics or
 - (Graduate) Micro Theory (1 or 2)
- 2. Do independent research/write thesis (學士論文)!
- 3. **BESAP**: Visit UC-Berkeley's Dep. of Economics

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