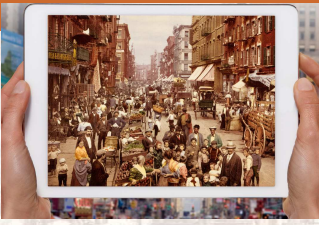


N. GREGORY MANKIWI

PRINCIPLES OF
ECONOMICS
Eight Edition



CHAPTER
22

**Frontiers of
Microeconomics**

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1

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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2




Introduction

- Microeconomics continues to evolve.
- This chapter introduces three active areas of research:
 - Asymmetric information
 - Political economy
 - Behavioral economics

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Asymmetric Information

- Information asymmetry:
 - A difference in two or more parties' access to relevant knowledge
- 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 is selling.

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Hidden Actions and Moral Hazard

- Moral hazard:
 - Tendency of a person who is imperfectly monitored to engage in dishonest or otherwise undesirable behavior
- Moral hazard problems:
 - Workers sometimes shirk their responsibilities because their employer cannot continually monitor their effort and performance.

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5




Hidden Actions and Moral Hazard

- Moral hazard problems:
 - 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)


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The Principal-Agent Problem

- **The principal – agent problem**
 - 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**
 - Hidden cameras to increase the chance of detecting undesirable behavior
- **Higher wages**
 - Efficiency wages 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 Principal-Agent Problem

- **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
- **Solution: need to align managers' interests with the firm's goals**


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Corporate Management Principal-Agent Problem

- **Solution:**
 - 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.


The information asymmetry prevents some mutually beneficial trades.

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Market Responses to Asymmetric Info.

- ▶ **The Market Itself** is a **response** to hidden characteristics of buyers/sellers (asym. info!)
 - ▶ **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 "intelligent design"?**


2017/12/13 Frontier of Microeconomics Joseph Tao-yi Wang



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 -most likely the safer drivers.

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Asymmetric Information and Public Policy

- **Asymmetric information**
 - May prevent market from allocating resources efficiently
- **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 government rarely has more information than private parties.
 - The government itself is an imperfect institution.

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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.

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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.


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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.

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Political Economy

- **Political economy**
 - Applies the methods of economics to study how government works.
- **The Condorcet voting paradox:**
 - The failure of majority rule to produce transitive preferences for society.
 - **Transitivity:** If A is preferred to B, and if B is preferred to C, then A should be preferred to C.

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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:


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

Alternative order:

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

| | 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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The Condorcet Paradox

- **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

- 1. Unanimity:**
 - If everyone prefers A to B, then A should beat B.
- 2. Transitivity:**
 - If A beats B, and B beats C, then A should beat C.

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Arrow's Four Desirable Properties of a Voting System

- 3. Independence of irrelevant alternatives:**
 - The ranking between any two outcomes should not depend on whether a third option is available.
- 4. 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!

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The Median Voter Theorem

- **Implications:**
 - 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.

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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.

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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?

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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.

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Economics and Psychology

- aka "Behavioral economics":
 - 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."

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People Aren't Always Rational

- **Studies find 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 an "even better" approximation with new theory...)


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People Care About Fairness

- **People's choices**
 - Sometimes influenced more by their sense of fairness than self-interest.
- **Example: The ultimatum game**
 - 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.


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People Care About Fairness

- Predicted outcome (rational players)
 - A would propose a 99-1 split and B would accept, because \$1 is better than nothing.
- Actual outcomes (experiments)
 - 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.


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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.


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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

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Conclusion

Markets are usually a good way to organize economic activity.

Governments can sometimes improve market outcomes.

- Research illustrates some caveats:
 - Consumers aren't always rational
 - Market outcomes may not be best when information is asymmetric
 - Government solutions are not always ideal

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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 fails to 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

- The study of psychology and economics reveals that human decision making is more complex than is assumed in conventional economic theory.
 - People are not always rational, they care about the fairness of economic outcomes (even to their own detriment), and they can be inconsistent over time

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Chapter 22: Frontier of Microeconomics

- ▶ Asymmetric Information
 - ▶ Experiment 11 is a "lemon" market!
- ▶ Political Economy
 - ▶ Political candidates act like "location" firms!
- ▶ Economics and Psychology (Behavioral Econ.)
 - ▶ 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, 2, 3, 5-7, 9

2017/12/13

Frontier of Microeconomics

Joseph Tao-yi Wang

Chapter 22: Frontier of Microeconomics

- ▶ Behavioral Game Theory and Eyetracking
 - ▶ Eyetrack people when they cheap talk (lying).
 - ▶ Learning to play normal form games,
 - ▶ Answering Trivia questions, and
 - ▶ Playing spatial beauty contest games
- ▶ Asymmetric Information and Experiments
 - ▶ How to decipher conflicting messages?
 - ▶ Pivotal-voting games
 - ▶ Least Unique Positive Integer (LUPI) games
 - ▶ Lowest Unique Bid Auction (LUBA) games
- ▶ Confucianism on time inconsistency/risk aversion

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Frontier of Microeconomics

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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 I
2. Start to do research/write thesis (學士論文)
3. **BESAP**: Visit UC-Berkeley's Econ Dept.
 - ▶ Challenge: Pay their tuition!
- ▶ Challenge Questions (Past Finals)
 - ▶ 2007 - Part 5 2012 - Essay B6-7

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