


N. Gregory Mankiw

# Principles of Economics

Sixth Edition



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## Ten Principles of Economics

Premium PowerPoint Slides by Ron Cronovich  
2013 UPDATE

Modified by Joseph Tao-yi Wang

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

- What kinds of questions does economics address?
- What are the principles of how people make decisions?
- What are the principles of how people interact?
- What are the principles of how the economy as a whole works?


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### What Economics Is All About

- **Scarcity:** the limited nature of society's resources
- **Economics:** the study of how society manages its scarce resources, e.g.
  - how people decide what to buy, how much to work, save, and spend
  - how firms decide how much to produce, how many workers to hire
  - how society decides how to divide its resources between national defense, consumer goods, protecting the environment, and other needs

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### The principles of HOW PEOPLE MAKE DECISIONS



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### PRINCIPLE #1: People Face Tradeoffs

All decisions involve tradeoffs. Examples:

- Going to a party the night before your midterm leaves less time for studying.
- Having more money to buy stuff requires working longer hours, which leaves less time for leisure.
- Protecting the environment requires resources that could otherwise be used to produce consumer goods.

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### PRINCIPLE #1: People Face Tradeoffs

- Society faces an important tradeoff: *efficiency vs. equality*
- **Efficiency:** when society gets the most from its scarce resources
- **Equality:** when prosperity is distributed uniformly among society's members
- Tradeoff: To achieve greater equality, could redistribute income from wealthy to poor. But this reduces incentive to work and produce, shrinks the size of the economic "pie."

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## PRINCIPLE #2: The Cost of Something Is What You Give Up to Get It

- Making decisions requires comparing the costs and benefits of alternative choices.
- The **opportunity cost** of any item is whatever must be given up to obtain it.
- It is the relevant cost for decision making.

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## PRINCIPLE #2: The Cost of Something Is What You Give Up to Get It

### Examples:

The opportunity cost of...

- ...going to college for a year is not just the tuition, books, and fees, but also the foregone wages.
- ...seeing a movie is not just the price of the ticket, but the value of the time you spend in the theater.

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## PRINCIPLE #3: Rational People Think at the Margin

### Rational people

- systematically and purposefully do the best they can to achieve their objectives.
- make decisions by evaluating costs and benefits of **marginal changes**, incremental adjustments to an existing plan.

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## PRINCIPLE #3: Rational People Think at the Margin

### Examples:

- When a student considers whether to go to college for an additional year, he compares the fees & foregone wages to the extra income he could earn with the extra year of education.
- When a manager considers whether to increase output, she compares the cost of the needed labor and materials to the extra revenue.

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## PRINCIPLE #4: People Respond to Incentives

- **Incentive**: something that induces a person to act, i.e. the prospect of a reward or punishment.
- Rational people respond to incentives.

### Examples:

- When gas prices rise, consumers buy more hybrid cars and fewer gas guzzling SUVs.
- When cigarette taxes increase, teen smoking falls.

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## ACTIVE LEARNING 1 Applying the principles

You are selling your old Asus laptop. You have already spent \$10,000 on repairs.

At the last minute, the hard drive dies. You can pay \$6,000 to replace it, or sell the laptop "as is."

In each of the following scenarios, should you have the hard drive replaced? Explain.

- A. eBay value (what you could get for the laptop) is \$25,000 if hard drive works, \$17,000 if it doesn't
- B. eBay value is \$20,000 if hard drive works, \$15,000 if it doesn't

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## ACTIVE LEARNING 1

### Answers

Cost of replacing hard drive = \$6,000

- A. eBay value is \$25,000 if hard drive works, \$17,000 if it doesn't

Benefit of replacing the hard drive = \$8,000  
( $\$25,000 - \$17,000$ ).

It's worthwhile to have the hard drive replaced.

- B. eBay value is \$20,000 if hard drive works, \$15,000 if it doesn't

Benefit of replacing the hard drive is only \$5,000.

Paying \$6,000 to replace the hard drive is not worthwhile.

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## ACTIVE LEARNING 1

### Observations

- The \$10,000 you previously spent on repairs is irrelevant. What matters is the cost and benefit of the *marginal* repair (the hard drive).
- The change in incentives from scenario A to scenario B caused your decision to change.

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## The principles of HOW PEOPLE INTERACT



## PRINCIPLE #5: Trade Can Make Everyone Better Off

- Rather than being self-sufficient, people can specialize in producing one good or service and exchange it for other goods.
- Countries also benefit from trade and specialization:
  - Get a better price abroad for goods they produce
  - Buy other goods more cheaply from abroad than could be produced at home

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## PRINCIPLE #6: Markets Are Usually A Good Way to Organize Economic Activity

- **Market:** a group of buyers and sellers (need not be in a single location)
- “Organize economic activity” means determining
  - what goods to produce
  - how to produce them
  - how much of each to produce
  - who gets them

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## PRINCIPLE #6: Markets Are Usually A Good Way to Organize Economic Activity

- A **market economy** allocates resources through the decentralized decisions of many households and firms as they interact in markets.
- Famous insight by Adam Smith in *The Wealth of Nations* (1776):
  - Each of these households and firms acts as if “led by an **invisible hand**” to promote general economic well-being.

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**PRINCIPLE #6:  
Markets Are Usually A Good Way to  
Organize Economic Activity**

- The invisible hand works through the price system:
  - The interaction of buyers and sellers determines prices.
  - Each price reflects the good's value to buyers and the cost of producing the good.
  - Prices guide self-interested households and firms to make decisions that, in many cases, maximize society's economic well-being.

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**PRINCIPLE #7:  
Governments Can Sometimes  
Improve Market Outcomes**

- Important role for govt: **enforce property rights** (with police, courts)
- People are less inclined to work, produce, invest, or purchase if large risk of their property being stolen.

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**PRINCIPLE #7:  
Governments Can Sometimes  
Improve Market Outcomes**

- **Market failure:** when the market fails to allocate society's resources efficiently
- Causes of market failure:
  - **Externalities**, when the production or consumption of a good affects bystanders (e.g. pollution)
  - **Market power**, a single buyer or seller has substantial influence on market price (e.g. monopoly)
- Public policy may **promote efficiency**.

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**PRINCIPLE #7:  
Governments Can Sometimes  
Improve Market Outcomes**

- Govt may alter market outcome to **promote equity**.
- If the market's distribution of economic well-being is not desirable, tax or welfare policies can change how the economic "pie" is divided.

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ACTIVE LEARNING **2**  
**Discussion Question**

In each of the following situations, what is the government's role? Does the government's intervention improve the outcome?

- a. Public schools for K-12
- b. National health insurance
- c. Patent laws, which allow drug companies to charge high prices for life-saving drugs

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**What Economics is REALLY About?**

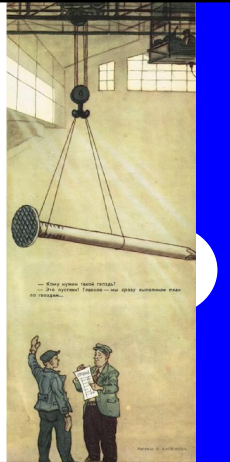
- **Traditionally:** Economics is the study of how society produces and distributes goods to satisfy the wants and needs of their members.
- **My View:** Economics is a study of institutions and human behavior (reactions to institutions)
  - (Classical) market mechanism is just one example!
  - Other mechanisms: **Auctions, match-making**
  - Other institutions: **governments, congress, national health insurance, families, social norms**

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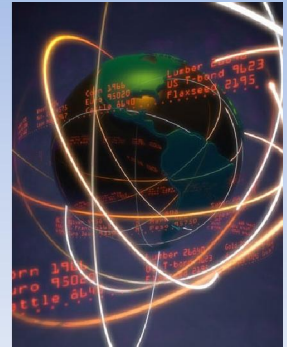
「上有政策，下有對策」：  
**People Respond to Incentives!**

- Central Planning in Soviet Union: "...if the plan merely calls for tonnages of output, there is every incentive to skimp on design or finish or quality, in order to concentrate on **sheer weight**."  
 – *The Economic Problem* (1970), by Robert L. Heilbroner
- Interesting cartoon in *Krokodil* (Russian satirical magazine):



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*The principles of*  
**HOW THE ECONOMY AS A WHOLE WORKS**



**How the Economy As a Whole Works?**

- These are Macroeconomics Principles (for the Spring semester, not for now)
- Some are still controversial and under debate
- Blah blah blah...  
 – See Yoram's "Translation" of the ten principles

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**PRINCIPLE #8:**  
**A Country's Standard of Living Depends on Its Ability to Produce Goods & Services**

- Huge variation in living standards across countries and over time:
  - Average income in rich countries is more than ten times average income in poor countries.
  - The U.S. standard of living today is about eight times larger than 100 years ago.
  - What about Taiwan?

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**PRINCIPLE #8:**  
**A Country's Standard of Living Depends on Its Ability to Produce Goods & Services**

- The most important determinant of living standards: **productivity**, the amount of goods and services produced per unit of labor.
- Productivity depends on the equipment, skills, and technology available to workers.
- Other factors (e.g., labor unions, competition from abroad) have far less impact on living standards.

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**PRINCIPLE #9:**  
**Prices Rise When the Government Prints Too Much Money**

- **Inflation**: increases in the general level of prices.
- In the long run, inflation is almost always caused by excessive growth in the quantity of money, which causes the value of money to fall.
- The faster the govt creates money, the greater the inflation rate.

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**PRINCIPLE #10:  
Society Faces a Short-run Tradeoff  
Between Inflation and Unemployment**

- In the short-run (1–2 years), many economic policies push inflation and unemployment in opposite directions.
- Other factors can make this tradeoff more or less favorable, but the tradeoff is always present.

**FYI: How to Read Your Textbook**

1. Read before class.  
You'll get more out of class.
2. Summarize, don't highlight.  
Highlighting is a passive activity that won't improve your comprehension or retention. Instead, summarize each section in your own words. Then, compare your summary to the one at the end of the chapter.

**FYI: How to Read Your Textbook**

3. Test yourself.  
Try the “Quick Quiz” that follows each section before moving on to the next section. Write your answers down, compare them to the answers in the back of the book. If your answers are incorrect, review the section before moving on.
4. Practice, practice, practice.  
Work through the end-of-chapter review questions and problems. They are often good practice for the exams. And the more you use your new knowledge, the more solid it will become.

**FYI: How to Read Your Textbook**

5. Go online.  
The book comes with excellent web resources, including practice quizzes, tools to strengthen your graphing skills, helpful video clips, and other resources to help you learn the textbook material more easily and effectively. Visit:  
[http://homepage.ntu.edu.tw/~josephw/principles\\_13F.htm](http://homepage.ntu.edu.tw/~josephw/principles_13F.htm)  
<http://academic.cengage.com/economics/mankiw>
6. Study in groups.  
Get together with a few classmates to review each chapter, quiz each other, and help each other understand the material.

**FYI: How to Read Your Textbook**

7. Teach someone.  
The best way to learn something is to teach it to someone else, such as a study partner or friend.
8. Don't skip the real world examples.  
Read the Case Studies and “In The News” boxes in each chapter. They will help you see how the new terms, concepts, models, and graphs apply to the real world. As you read the newspaper or watch the evening news, see if you can find the connections with what you're learning in the textbook.

**SUMMARY**

The principles of decision making are:

- People face tradeoffs.
- The cost of any action is measured in terms of foregone opportunities.
- Rational people make decisions by comparing marginal costs and marginal benefits.
- People respond to incentives.

## SUMMARY

The principles of interactions among people are:

- Trade can be mutually beneficial.
- Markets are usually a good way of coordinating trade.
- Govt can potentially improve market outcomes if there is a market failure or if the market outcome is inequitable.

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## SUMMARY

The principles of the economy as a whole are:

- Productivity is the ultimate source of living standards.
- Money growth is the ultimate source of inflation.
- Society faces a short-run tradeoff between inflation and unemployment.

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## What Economics is About?

- Economics is a study of institutions and human behavior (reactions to institutions)
  - 「上有政策，下有對策」
  - (Classical) market mechanism is one example
- Other mechanisms: auctions, match-making
- Other institutions:
  - Governments, congress,
  - Welfare systems, national health insurance,
  - Families, social norms

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## Chapter 1: Ten Principles

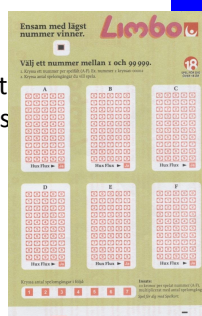
- Seven in Micro-economics
- Three in Macro-economics: Blah blah blah
- Homework:
  - Watch the “Ten Principles of Economics: A Translation” YouTube video and read its transcript online
  - Mankiw p.19-20, Problem 1, 5, 6, 8, 9, 11, 13, 16

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## Join the LUPI Game

- Lowest Unique Positive Integer Game
- Please each chooses a positive integer from 1 through 100
- The person that chose the lowest number that **no one else** did wins
- You earn 1 tie-breaker point, or the right to add the class (加選) if you win, 0 otherwise.



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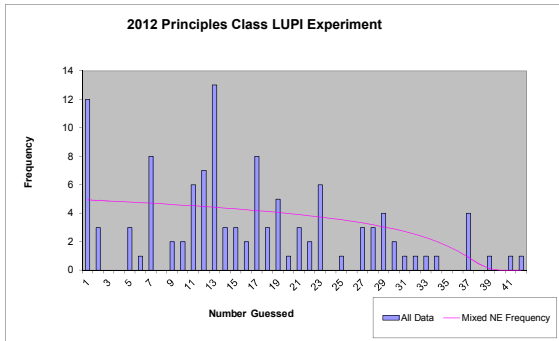
## What is Economics: Eight Steps Analyzing the LUPI Game

1. A set of well-defined rules
  - Formal (law, contracts) or informal (潛規則?)
2. How do I get the most for myself?
  - Pick “1” in the LUPI game?
3. But everyone is trying to get the most for himself/herself! So, how should I respond?
  - Pick “2”?
4. What does the aggregate data look like?

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## Analyzing the LUPI Game



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## What is Economics: Eight Steps Analyzing the LUPI Game

5. Does empirical data match the theory?
  - Collect data and analyze
6. Can individual differences be explained?
  - Improve theory?
7. How can the institution (set of rules) be improved?
  - Market design – engineering perspective
8. Where did this institution come from?
  - History? Norm? Rationale for the status quo?
  - A humanity perspective

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## Solving the Equilibrium of the LUPI Game

- You win by choosing  $k$  only if no other person chose  $k$  and nobody uniquely chose 1 to  $(k - 1)$
  - Assume the number of players is  $\text{Poisson}(n)$
  - The mixed strategy equilibrium requires:
  - $\Pr(\text{win} \mid \text{choose } 1) = \Pr(\text{win} \mid \text{choose } 2) = \dots$
- $$e^{-np_1} = (1 - np_1 e^{-np_1}) \cdot e^{-np_2}$$

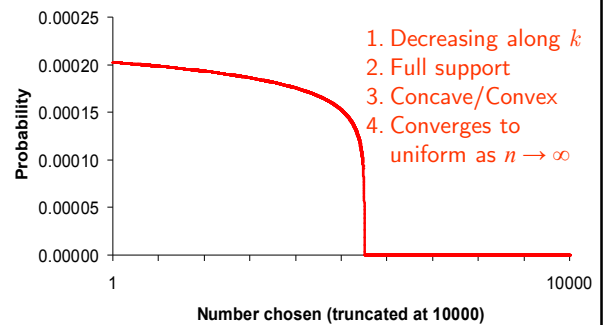
Nobody chose 1

Nobody uniquely chose 1

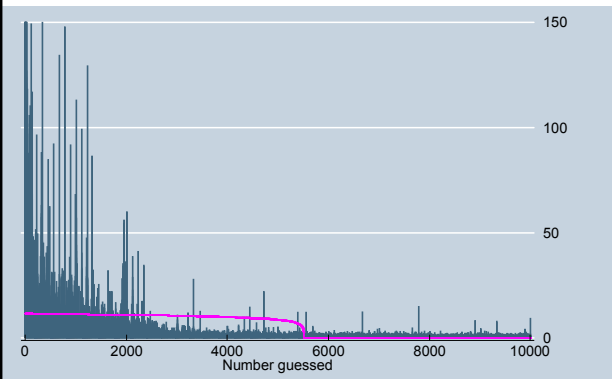
Nobody chose 2

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## Unique Poisson Nash Equilibrium (Mixed)



## Each Number's Daily Frequency (Week 1)



## Each Number's Daily Frequency (Week 3)

