

N. GREGORY MANKIWI

PRINCIPLES OF  
**ECONOMICS**  
Eight Edition

CHAPTER  
**2**

**Thinking Like an Economist**

Premium PowerPoint Slides by:  
V. Andreea CHIRITESCU  
Eastern Illinois University

Modified by Joseph Tao-yi Wang

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### Look for the answers to these questions:

- What are economists' two roles? How do they differ?
- What are models? How do economists use them?
- What are the elements of the Circular-Flow Diagram? What concepts does the diagram illustrate?
- How is the Production Possibilities Frontier related to opportunity cost? What other concepts does it illustrate?
- What is the difference between microeconomics and macroeconomics? Between positive and normative?

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### The Economist as a Scientist

- Economists play two roles:
  1. Scientists: try to explain the world
  2. Policy advisors: try to improve it
- As scientists, economists employ the **scientific method**
  - Dispassionate development and testing of theories about how the world works

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### The Economist as a Scientist

- Assumptions
  - Simplify the complex world and make it easier to understand
  - Example: to study international trade, assume two countries and two goods
- Economists use **models** to study economic issues
  - Highly simplified representation of a more complicated reality

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### The Economist as a Scientist

- Examples of models:
  - The model teeth at the dentist's office
  - A model of human anatomy from high school biology class
  - A road map

*Don't forget to floss!*

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### Experiments vs. Models

- ▶ Observation, Theory, and More Observation? Or,
- ▶ Observation, Theoretical Models, and
- ▶ **Experiments!**
  - ▶ Experimental Economics: a growing field
  - ▶ Vernon Smith: 2002 Nobel Prize Winner
  - ▶ Alvin Roth: 2012 Nobel Prize Winner
- ▶ **Controlled experiment:** a highly simplified environment of a more complicated reality
  - ▶ Just as a **model** is a highly simplified representation of a more complicated reality

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Thinking Like an Economist

Joseph Tao-yi Wang

## The Economist as a Scientist

- **Circular-flow diagram**
  - Visual model of the economy
  - Shows how dollars flow through markets among households and firms
- **Two decision makers**
  - Firms and Households
- **Interacting in two markets**
  - Market for goods and services
  - Market for factors of production (inputs)

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### Figure 1 The circular flow

Firms

Households

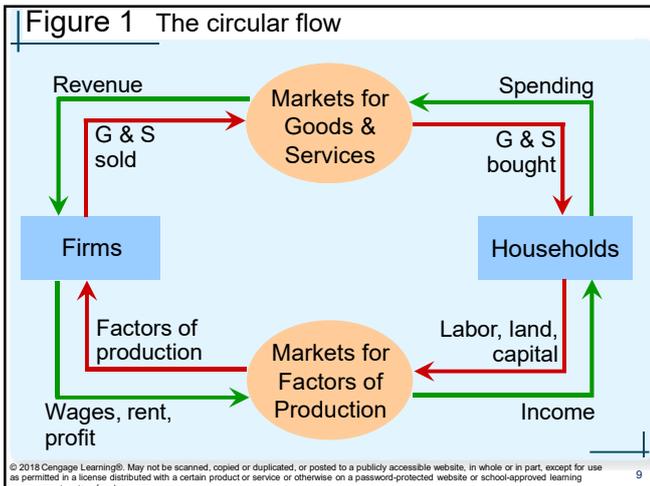
**Households:**

- Own the factors of production, sell/rent them to firms for income
- Buy and consume goods & services

**Firms:**

- Buy/hire factors of production, use them to produce goods and services
- Sell goods & services

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## The PPF

- **Production possibilities frontier**
  - A graph: combinations of output that the economy can possibly produce
  - Given the available
    - Factors of production and technology
  - Example:
    - Two goods: computers and wheat
    - One resource: labor (measured in hours)
    - Economy has 50,000 labor hours per month available for production

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### PPF Example

Producing one computer requires 100 hours labor.  
Producing one ton of wheat requires 10 hours labor.

	Employment of labor hours		Production	
	Computers	Wheat	Computers	Wheat
A	50,000	0	500	0
B	40,000	10,000	400	1,000
C	25,000	25,000	250	2,500
D	10,000	40,000	100	4,000
E	0	50,000	0	5,000

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### PPF Example

Point on graph	Production	
	Computers	Wheat
A	500	0
B	400	1,000
C	250	2,500
D	100	4,000
E	0	5,000

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Active Learning 1 Points off the PPF

On the graph above, find the point that represents (100 computers, 3000 tons of wheat), label it **F**.

- Would it be possible for the economy to produce this combination of the two goods? Why or why not?

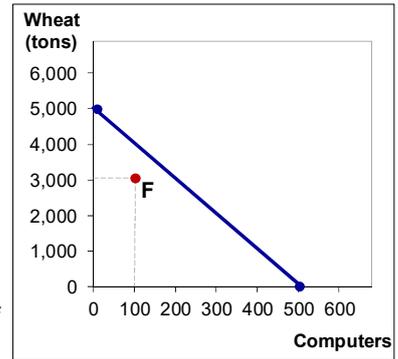
Next, find the point that represents (300 computers, 3500 tons of wheat), label it **G**.

- Would it be possible for the economy to produce this combination of the two goods?

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Active Learning 1 Answers

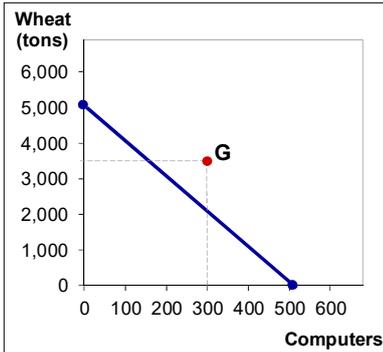
- **Point F:** 100 computers, 3000 tons wheat
- Requires 40,000 hours of labor
- Possible but not efficient: could get more of either good without sacrificing any of the other



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Active Learning 1 Answers

- **Point G:** 300 computers, 3500 tons wheat
- Requires 65,000 hours of labor.
- Not possible because the economy only has 50,000 hours



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The PPF: What We Know So Far

- **Points on the PPF (like A – E): possible**
  - Efficient: all resources are fully utilized
- **Points under the PPF (like F): possible**
  - Not efficient: some resources are underutilized (e.g., workers unemployed, factories idle)
- **Points above the PPF (like G)**
  - Not possible

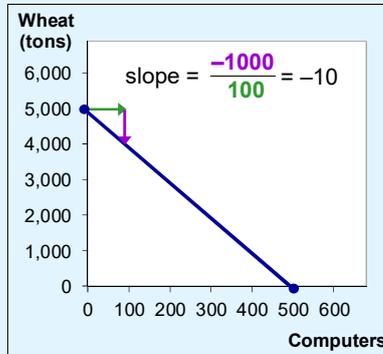
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The PPF

- **Moving along a PPF**
  - Involves shifting resources from the production of one good to the other
- **Society faces a tradeoff**
  - Getting more of one good requires sacrificing some of the other
- **The slope of the PPF**
  - The opportunity cost of one good in terms of the other

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The PPF and Opportunity Cost



The slope of a line equals the "rise over the run."

**Opportunity cost of 1 computer = 10 tons of wheat.**

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### Active Learning 2 PPF and Opportunity Cost

In which country is the opportunity cost of cloth lower?

#### FRANCE

#### ENGLAND

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### Active Learning 2 Answers

England, because its PPF is not as steep as France's

#### FRANCE

#### ENGLAND

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### Economic Growth and the PPF

With additional resources or an improvement in technology, the economy can produce more computers, more wheat, or any combination in between.

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### The Shape of the PPF

- Shape of the PPF
  - Straight line: constant opportunity cost
    - Previous example: the opportunity cost of 1 computer is 10 tons of wheat
  - Bowed outward: increasing opportunity cost
    - As more units of a good are produced, we need to give up increasing amounts of the other good produced

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### Why the PPF Might Be Bowed Outward

As the economy shifts resources from beer to mountain bikes:  
PPF becomes steeper  
and the opportunity cost of mountain bikes increases.

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### Why the PPF Might Be Bowed Outward

At point A, most workers are producing beer, even those who are better suited to building bikes.  
So, do not have to give up much beer to get more bikes.

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### Why the PPF Might Be Bowed Outward



At B, most workers are producing bikes. The few left in beer production are the best brewers.

Producing more bikes would require shifting some of the best brewers away from beer production causing a big drop in beer output.

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### Why the PPF Might Be Bowed Outward

- The PPF is bowed outward when:
  - Different workers have different skills
  - Different opportunity costs of producing one good in terms of the other
  - There is some other resource, or mix of resources with varying opportunity costs
    - E.g., different types of land suited for different uses

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### The Economist as a Scientist

- **Microeconomics:** The study of...
  - how households and firms make decisions and how they interact in markets
- **Macroeconomics:** The study of...
  - economy-wide phenomena, including inflation, unemployment, economic growth
- However, the two theories are uniting with recent progress providing **micro-foundation** to macro.

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### The Economist as Policy Adviser

- **Positive statements: descriptive**
  - Attempt to describe the world as it is
  - Confirm or refute by examining evidence: “Minimum-wage laws cause unemployment”
- **Normative statements: prescriptive**
  - Attempt to prescribe how the world should be: “The government should raise the minimum wage”

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### Active Learning 3 Positive vs. Normative

Which of these statements are “positive” and which are “normative”? How can you tell the difference?

- a. Prices rise when the government increases the quantity of money.
- b. The government should print less money.
- c. A tax cut is needed to stimulate the economy.
- d. An increase in the price of burritos will cause an increase in consumer demand for music downloads.

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### Active Learning 3 Answers

- a. Prices rise when the government increases the quantity of money.  
*Positive – describes a relationship, could use data to confirm or refute.*
- b. The government should print less money.  
*Normative – this is a value judgment, cannot be confirmed or refuted.*

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## Active Learning 3

## Answers

- c. A tax cut is needed to stimulate the economy.  
*Normative – another value judgment.*
- d. An increase in the price of burritos will cause an increase in consumer demand for music downloads  
*Positive – describes a relationship.*

*Note that a statement need not be true to be positive.*

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## Why Economists Disagree

- Economists often give conflicting policy advice
  - Can disagree about the validity of alternative positive theories about the world
  - May have different values and, therefore, different normative views about what policy should try to accomplish
- Yet, there are many propositions about which most economists agree

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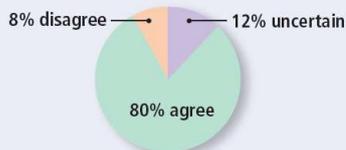
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## ASK THE EXPERTS

## Ticket Resale

*“Laws that limit the resale of tickets for entertainment and sports events make potential audience members for those events worse off on average.”*

What do economists say?



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Propositions about Which Most Economists Agree (and percentage of economists who agree)

- A ceiling on rents reduces the quantity and quality of housing available. (93%)
- Tariffs and import quotas usually reduce general economic welfare. (93%)
- The United States should not restrict employers from outsourcing work to foreign countries. (90%)
- The United States should eliminate agricultural subsidies. (85%)
- Local and state governments should eliminate subsidies to professional sports franchises (85%)

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Propositions about Which Most Economists Agree (and percentage of economists who agree)

- Cash payments increase the welfare of recipients to a greater degree than do transfers-in kind of equal cash value. (84%)
- A large federal budget deficit has an adverse effect on the economy. (83%)
- The United States should not ban genetically modified crops. (82%)
- A minimum wage increases unemployment among young and unskilled workers. (79%)
- Government subsidies on ethanol in the United States should be reduced or eliminated. (78%)

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## Summary

- Economists are scientists
  - Make appropriate assumptions and build simplified models
  - The circular-flow diagram and the production possibilities frontier
- Microeconomists study decision making by households and firms and their interactions in the marketplace
- Macroeconomists study the forces and trends that affect the economy as a whole

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## Summary

- A positive statement is an assertion about how the world is
- A normative statement is an assertion about how the world ought to be
- As policy advisers, economists make normative statements
- Economists sometimes offer conflicting advice
  - Differences in scientific judgments
  - Differences in values

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## Chapter 2: Thinking Like An Economist

- ▶ See how Economists think
- ▶ Key Idea:
  - ▶ Circular Flow Diagram
  - ▶ Production Possibility Frontier
- ▶ Suggested Homework:
  - ▶ Read Appendix on Graphing (Mankiw p. 40-48)
  - ▶ Mankiw, Chap.2, Problem 3, 4

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