Economics 1
Principles of Economics

Thinking Like an Economist
(Chapter 2)

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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.

I. The Economist as a Scientist

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

II. Assumptions & Models

- Assumptions simplify the complex world, make it easier to understand.
- Example: To study international trade, assume two countries and two goods.
  - Unrealistic, but simple to learn and gives useful insights about the real world.
- Def: Model = a highly simplified representation of a more complicated reality.
- Economists use models to study economic issues.

III. The Circular-Flow Diagram 1 of 4

- Def: The Circular-Flow Diagram = a visual model of the economy, shows how dollars flow through markets among households and firms.

- Two types of "actors":
  - households
  - firms

- Two markets:
  - the market for goods and services
  - the market for "factors of production"

III. The Circular-Flow Diagram 2 of 4

- Def: Factors of production = the resources the economy uses to produce goods & services, including
  - labor
  - land
  - capital (buildings and machines used in production)

III. The Circular-Flow Diagram 3 of 4

Households:

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

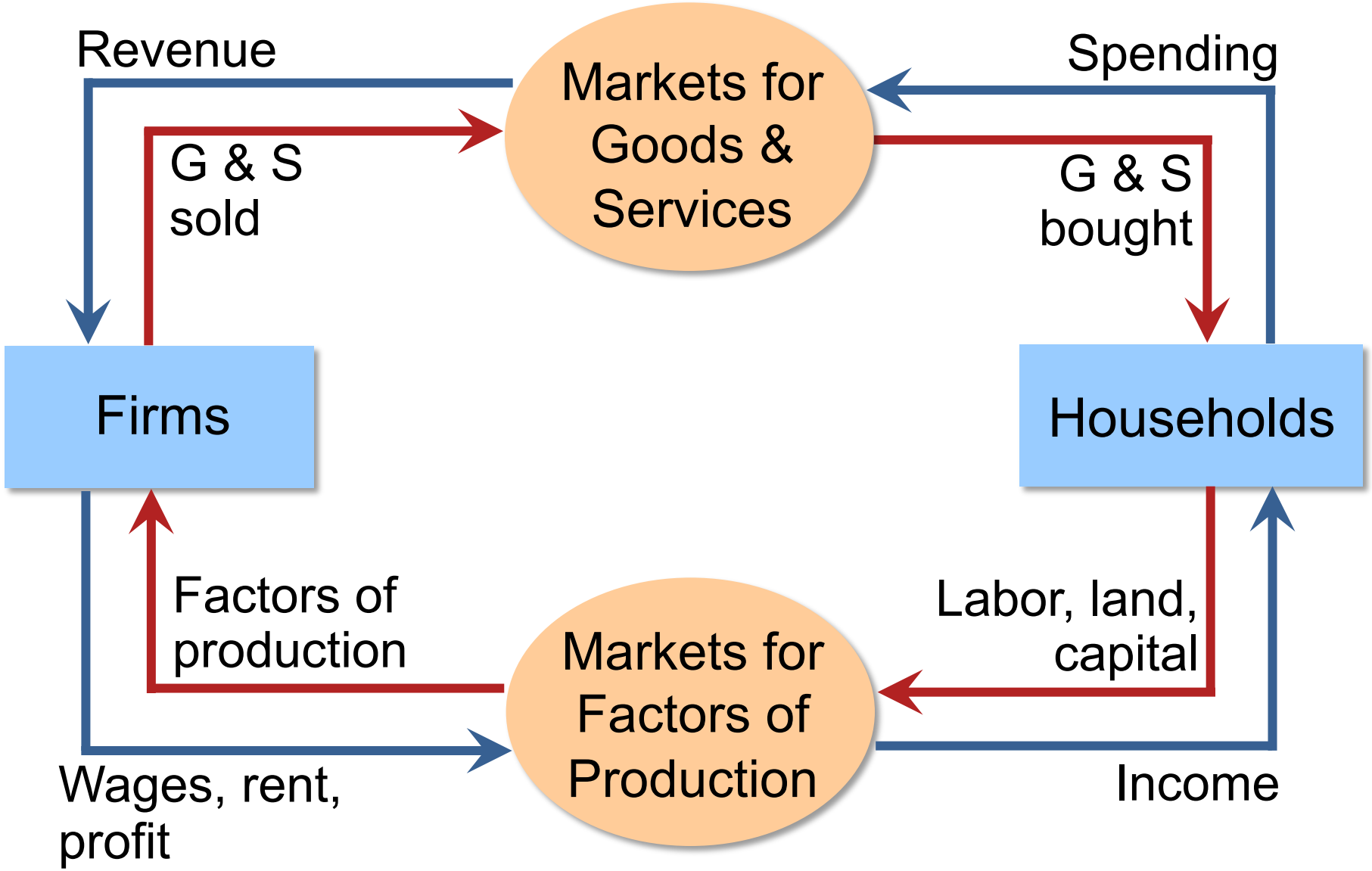
Firms

Households

Firms:

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

III. The Circular-Flow Diagram 4 of 4



IV. The Production Possibilities Frontier

- Def: The Production Possibilities Frontier (PPF) = a graph that shows the combinations of two goods the economy can possibly produce given the available resources and the available technology
- Example:
  - Two goods: computers and wheat
  - One resource: labor (measured in hours)
  - Economy has 50,000 labor hours per month available for production.

IV. The Production Possibilities Frontier

Example: U.S. and Japan

- Two countries: the U.S. and Japan.
- Two goods: computers and wheat.
- One resource: labor, measured in hours.
- We will look at how much of both goods each country produces and consumes
  - if the country chooses to be self-sufficient.
  - if it trades with the other country.

IV. The Production Possibilities Frontier

Example: U.S.

- The U.S. has 50,000 hours of labor available for production, per month.
- Producing one computer requires 100 hours of labor.
- Producing one ton of wheat requires 10 hours of labor.

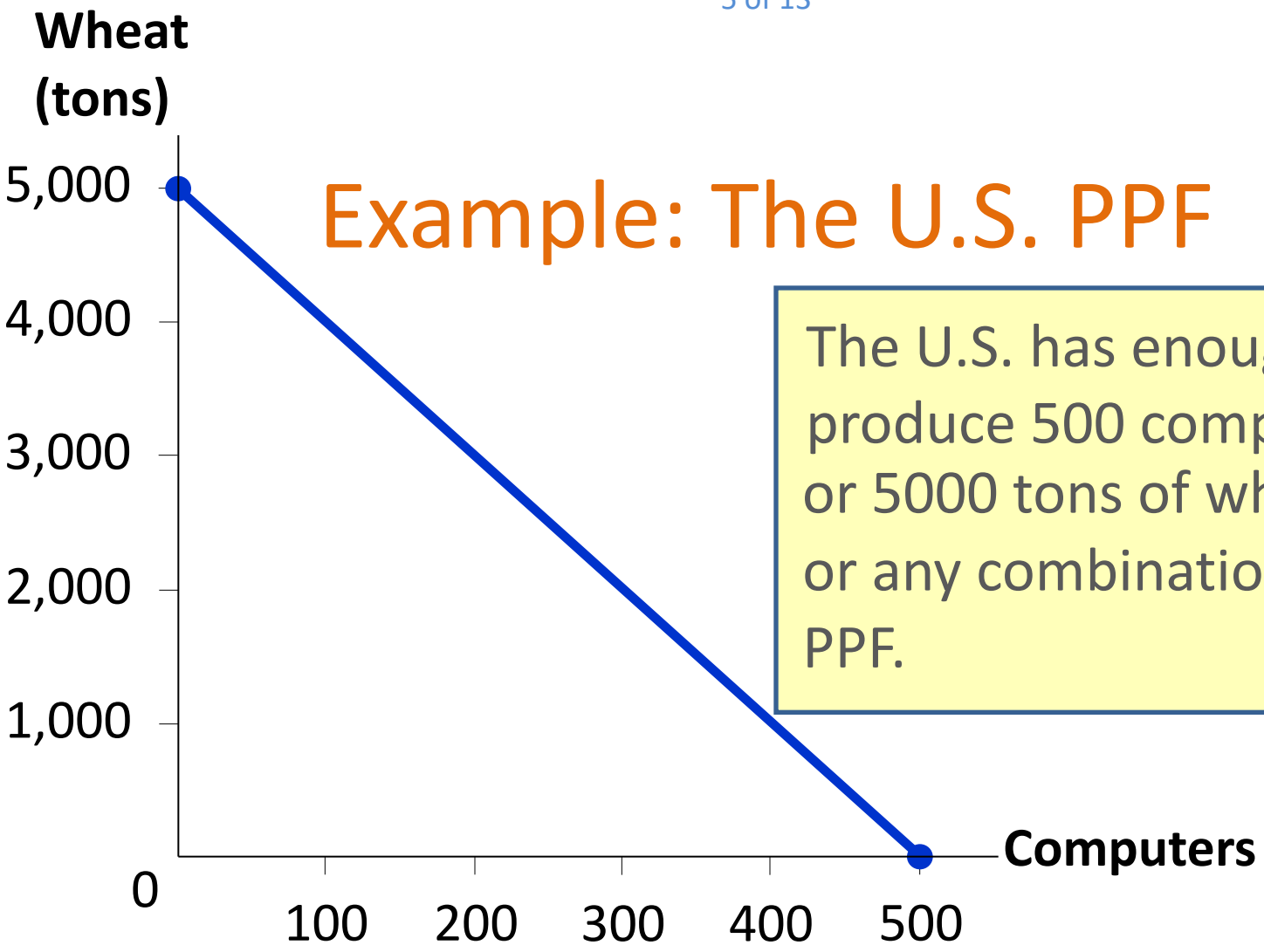
IV. The Production Possibilities Frontier

- 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

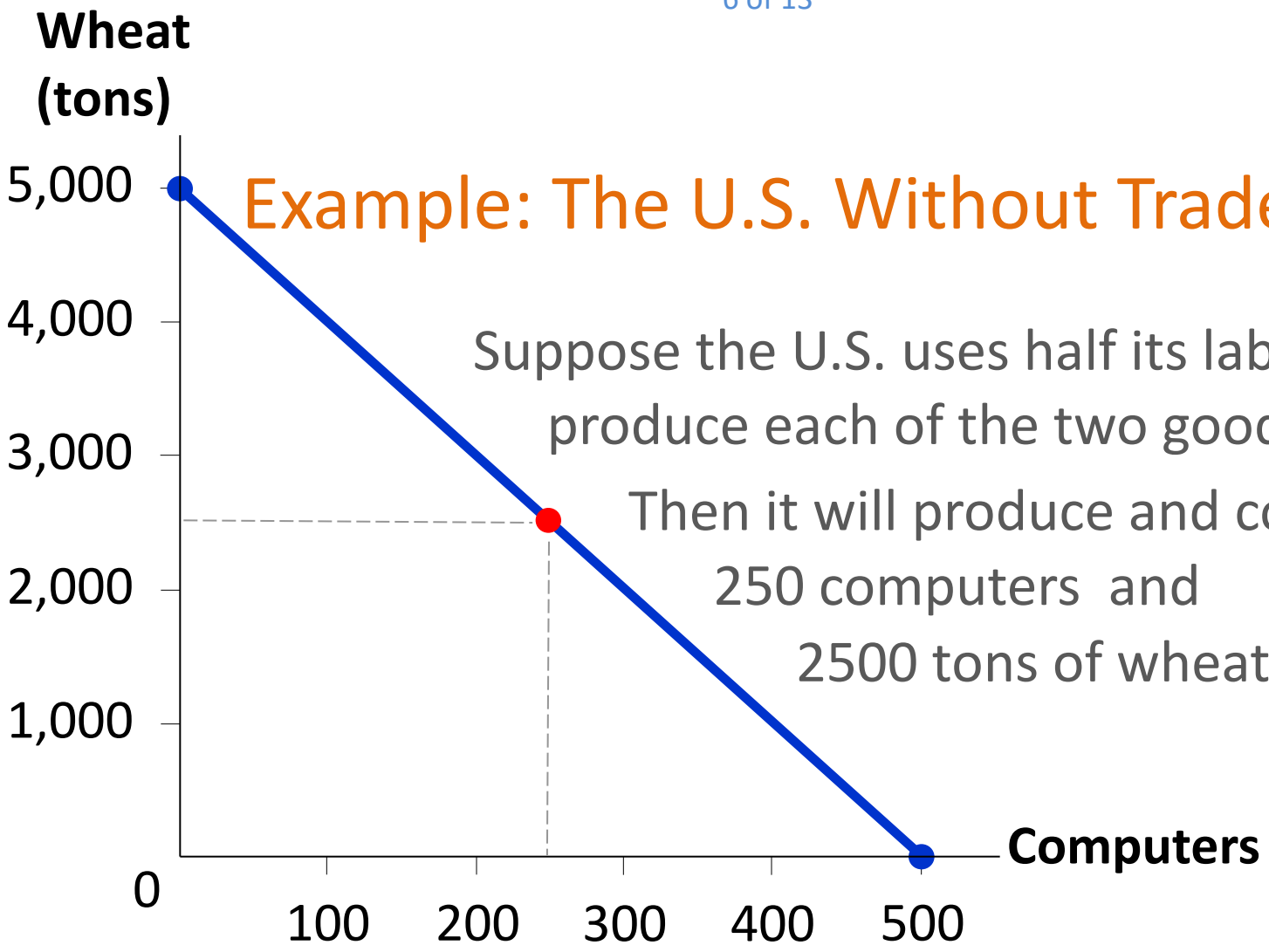
IV. The Production Possibilities Frontier

Example: The U.S. PPF



The U.S. has enough labor to produce 500 computers, or 5000 tons of wheat, or any combination along the PPF.

IV. The Production Possibilities Frontier



Example: The U.S. Without Trade

Suppose the U.S. uses half its labor to produce each of the two goods.

Then it will produce and consume
250 computers and
2500 tons of wheat.

Note: Without trade, a country consumes what it produces.

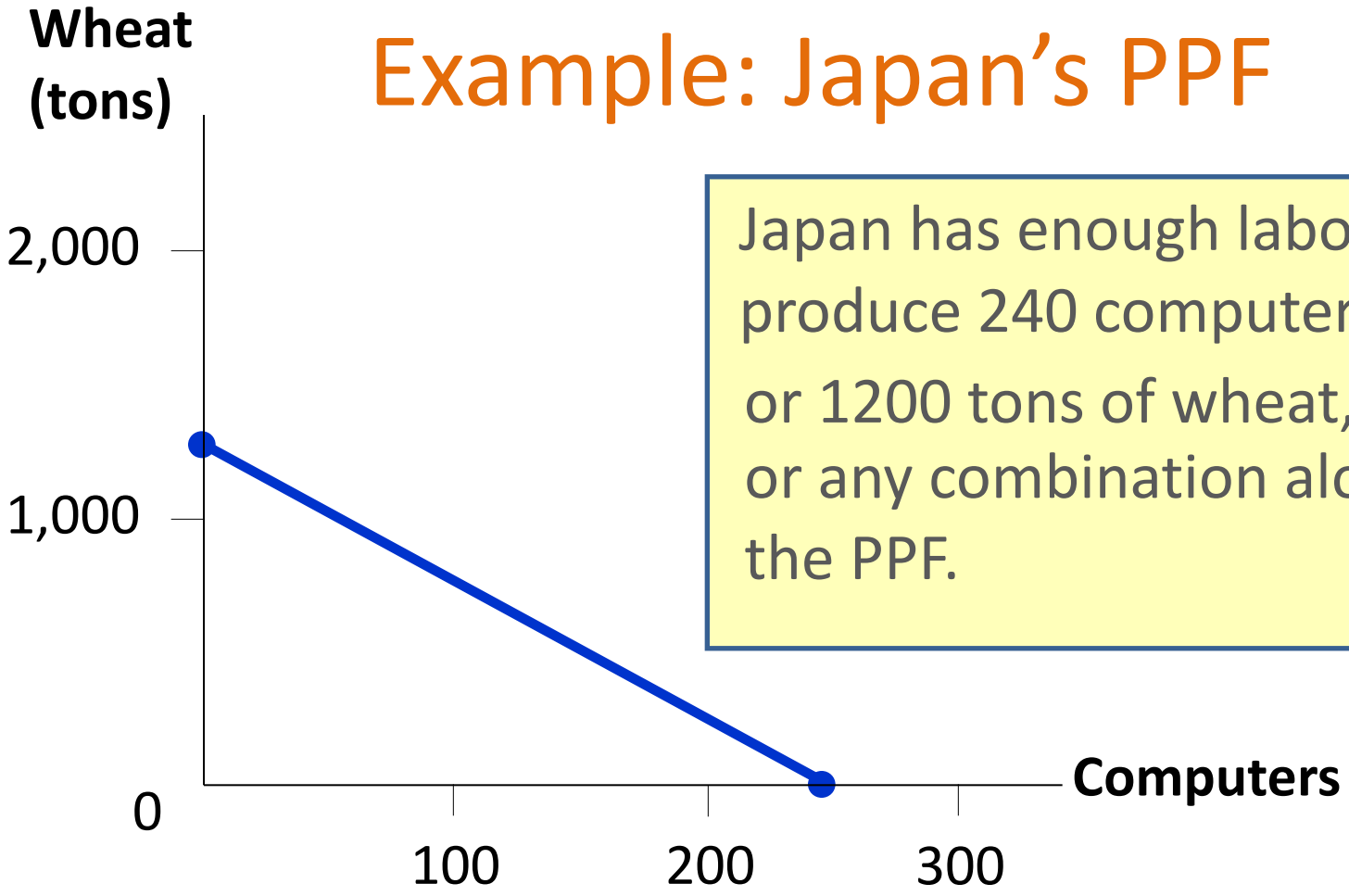
IV. The Production Possibilities Frontier

Example: Japan

- Japan has 30,000 hours of labor available for production, per month.
- Producing one computer requires 125 hours of labor.
- Producing one ton of wheat requires 25 hours of labor.

IV. The Production Possibilities Frontier

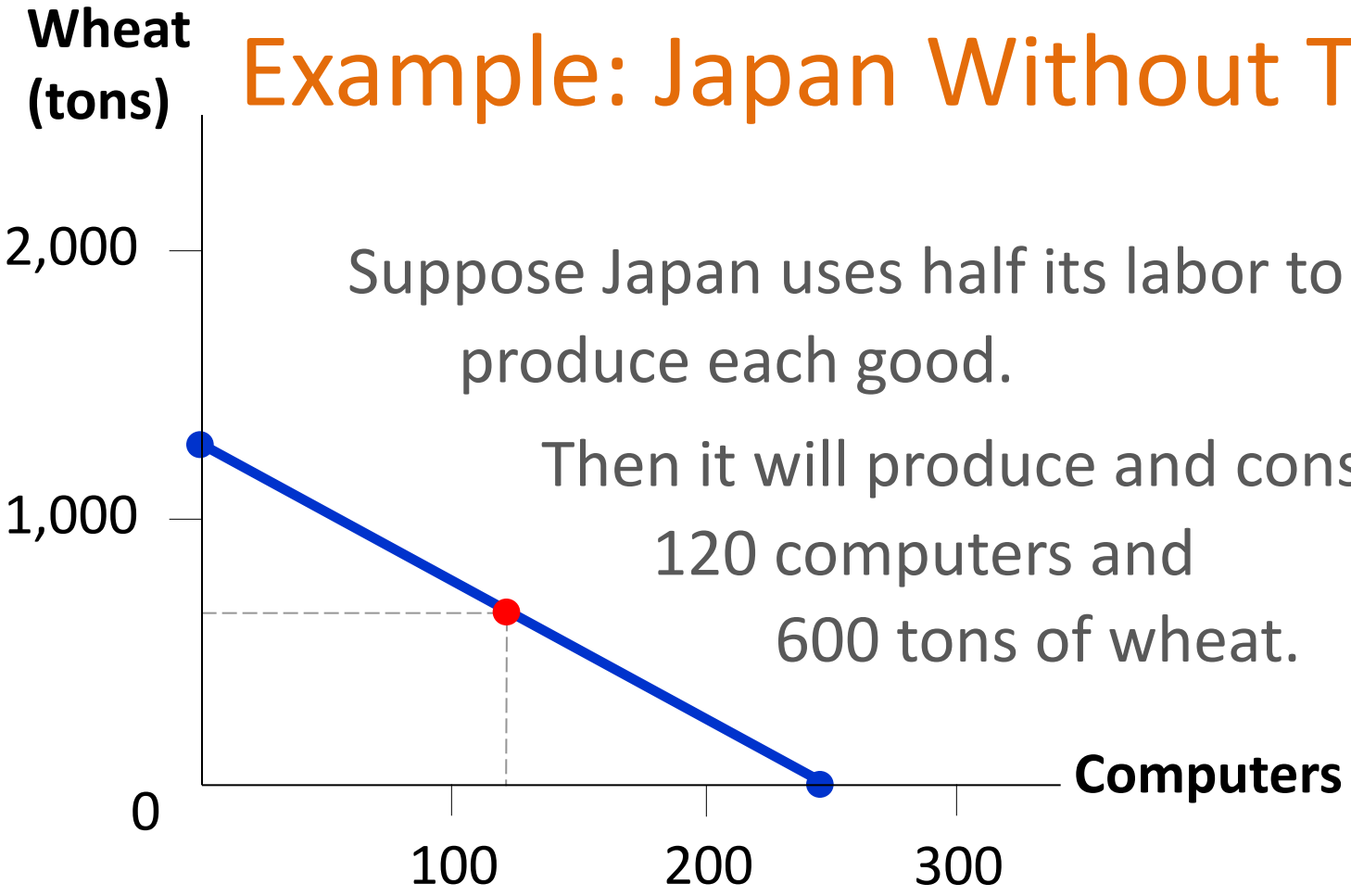
Example: Japan's PPF



Japan has enough labor to produce 240 computers,
or 1200 tons of wheat,
or any combination along the PPF.

IV. The Production Possibilities Frontier
9 of 13

Example: Japan Without Trade



Suppose Japan uses half its labor to produce each good.

Then it will produce and consume 120 computers and 600 tons of wheat.

IV. The Production Possibilities Frontier

Example: Consumption With and Without Trade

- Without trade,
  - U.S. consumers get 250 computers and 2500 tons wheat.
  - Japanese consumers get 120 computers and 600 tons wheat.
- We will compare consumption without trade to consumption with trade.
- First, we need to see how much of each good is produced and traded by the two countries.

IV. The Production Possibilities Frontier

Example: Consumption Under Trade

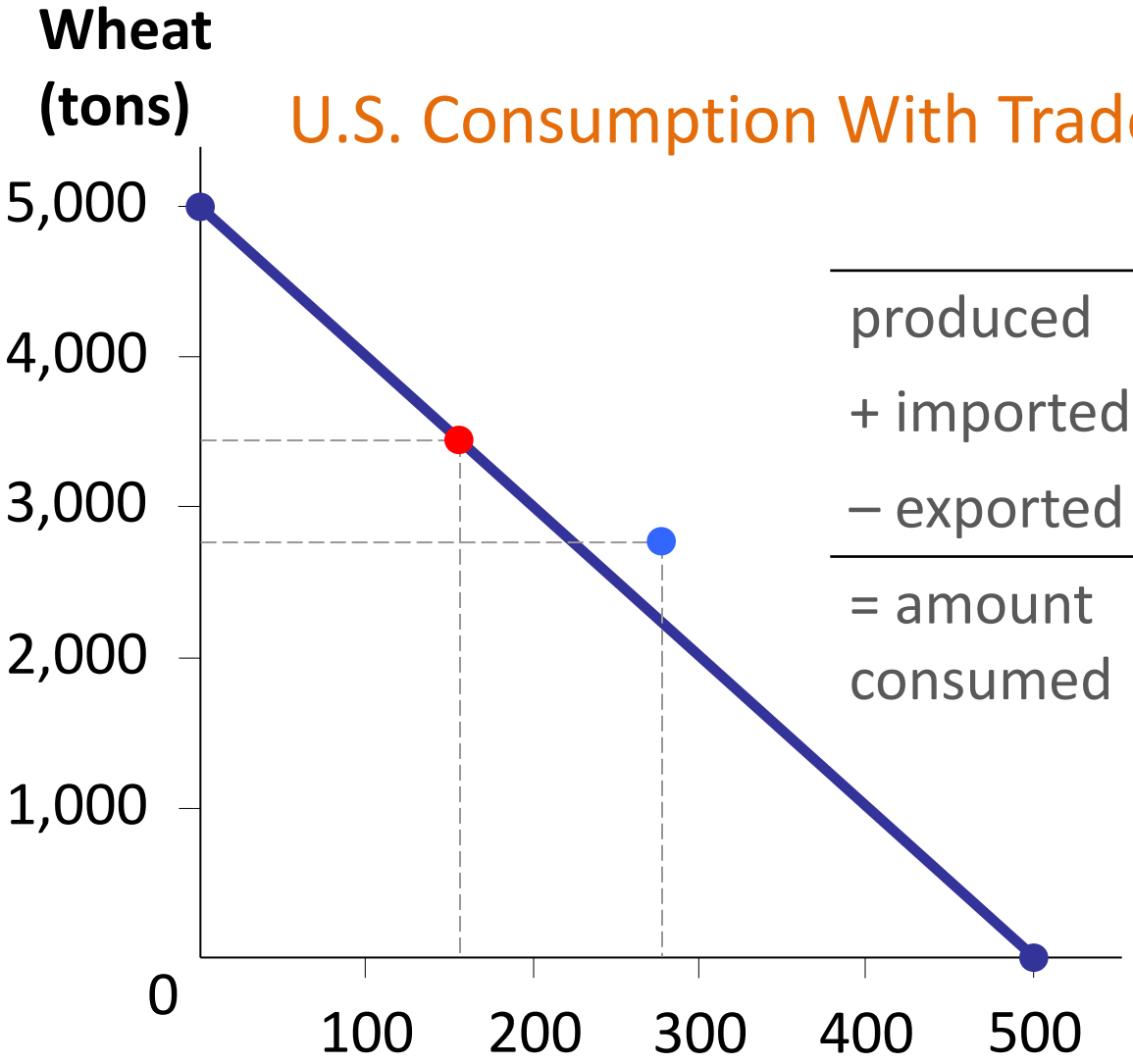
Suppose the U.S. exports 700 tons of wheat to Japan, and imports 110 computers from Japan.

(So, Japan imports 700 tons wheat and exports 110 computers.)

- How much of each good is consumed in the U.S.? Plot this combination on the U.S. PPF.
- How much of each good is consumed in Japan? Plot this combination on Japan's PPF.

IV. The Production Possibilities Frontier

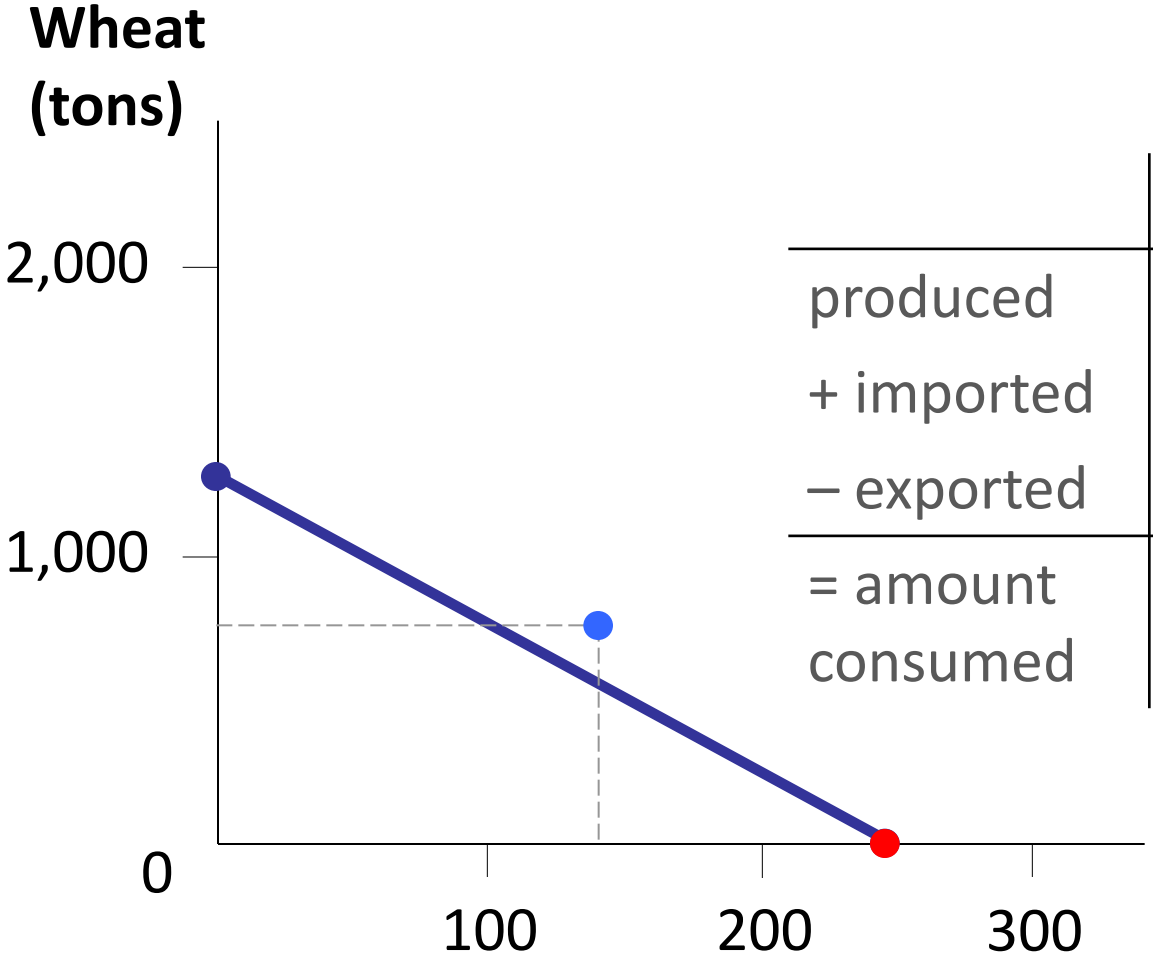
U.S. Consumption With Trade



	computers	wheat
produced	160	3400
+ imported	110	0
– exported	0	700
= amount consumed	270	2700

IV. The Production Possibilities Frontier

Japan's Consumption With Trade



	computers	wheat
produced	240	0
+ imported	0	700
– exported	110	0
= amount consumed	130	700

Trade Makes Both Countries Better Off

U.S.			
	Consumption without trade	Consumption with trade	Gains from trade
Computers	250	270	**20**
Wheat	2500	2700	**200**

Japan			
	Consumption without trade	Consumption with trade	Gains from trade
Computers	120	130	**10**
Wheat	600	700	**100**

V. Where Do These Gains Come From?

1 of 2

- Def: Absolute Advantage = The ability to produce a good using fewer inputs than another producer.
- The U.S. has an absolute advantage in wheat: producing a ton of wheat uses 10 labor hours in the U.S. vs. 25 in Japan.
- If each country has an absolute advantage in one good and specializes in that good, then both countries can gain from trade.

V. Where Do These Gains Come From?

2 of 2

- Which country has an absolute advantage in computers?
- Producing one computer requires 125 labor hours in Japan, but only 100 in the U.S.
- The U.S. has an absolute advantage in both goods!

So why does Japan specialize in computers?
Why do both countries gain from trade?

VI. Two Measures of the Cost of a Good

- Two countries can gain from trade when each specializes in the good it produces at lowest cost.
- Absolute advantage measures the cost of a good in terms of the inputs required to produce it.

- Recall: Another measure of cost is opportunity cost.
  - In our example, the opportunity cost of a computer is the amount of wheat that could be produced using the labor needed to produce one computer.

VII. Opportunity Cost and Comparative Advantage 1 of 2

- Def: Comparative Advantage = The ability to produce a good at a lower opportunity cost than another producer
- Which country has the comparative advantage in computers?
- To answer this, must determine the opportunity cost of a computer in each country.

VII. Opportunity Cost and Comparative Advantage 2 of 2

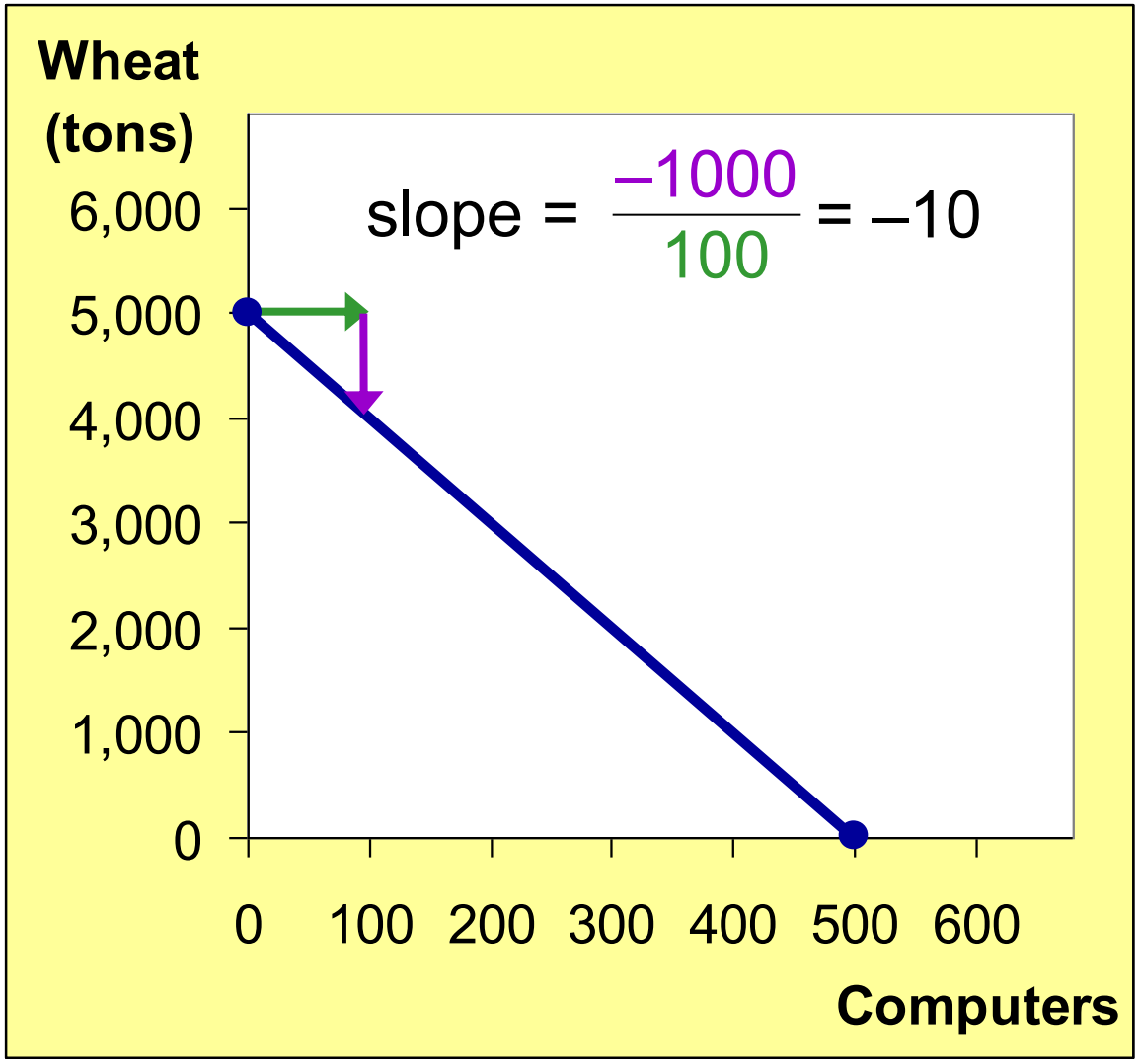
- The opportunity cost of a computer is
  - 10 tons of wheat in the U.S., because producing one computer requires 100 labor hours, which instead could produce 10 tons of wheat.
  - 5 tons of wheat in Japan, because producing one computer requires 125 labor hours, which instead could produce 5 tons of wheat.
- So, Japan has a comparative advantage in computers. Lesson: Absolute advantage is not necessary for comparative advantage!

VIII. Comparative Advantage and Trade

- Gains from trade arise from comparative advantage (differences in opportunity costs).

- When each country specializes in the good(s) in which it has a comparative advantage, total production in all countries is higher, the world's "economic pie" is bigger, and all countries can gain from trade.

IX. The PPF and Opportunity Cost

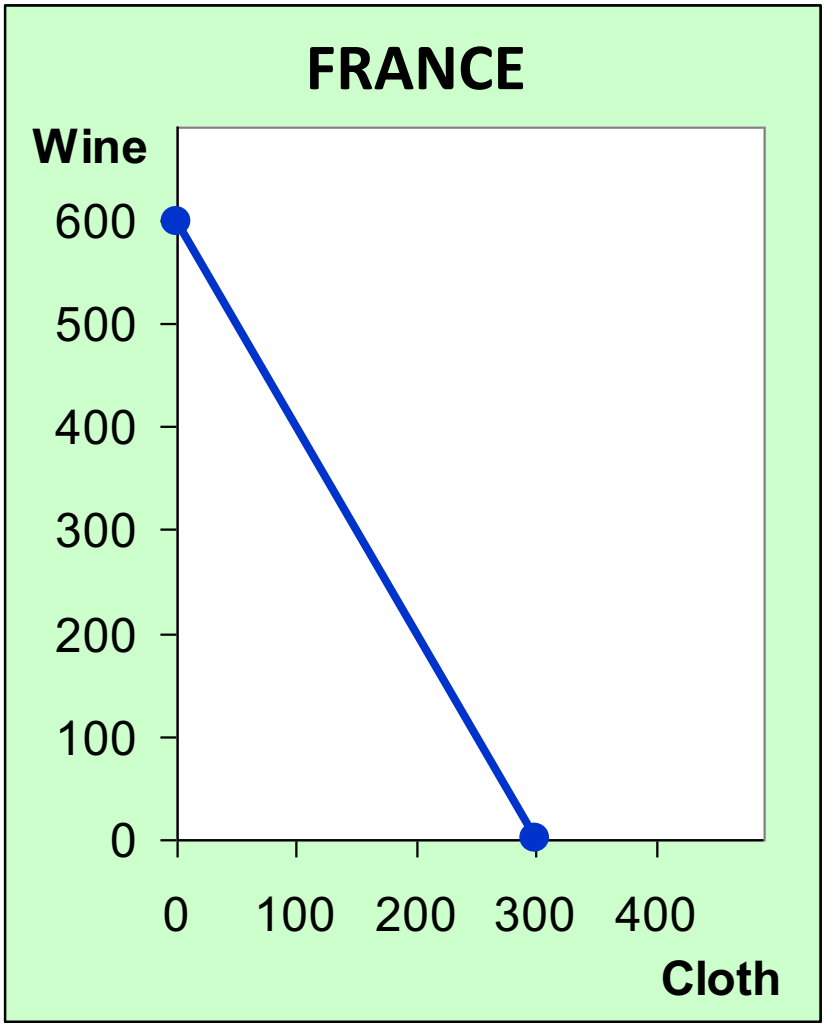


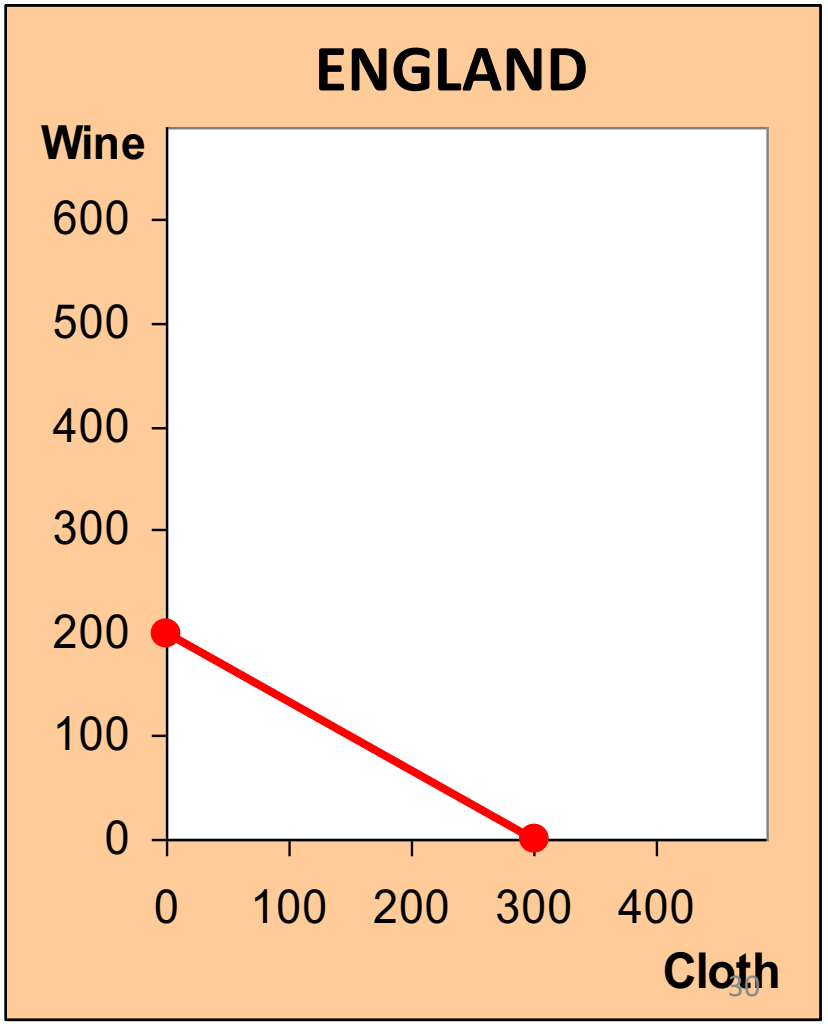
The slope of a line equals the "rise over the run," the amount the line rises when you move to the right by one unit.

Here, the opportunity cost of a computer is 10 tons of wheat.

Example

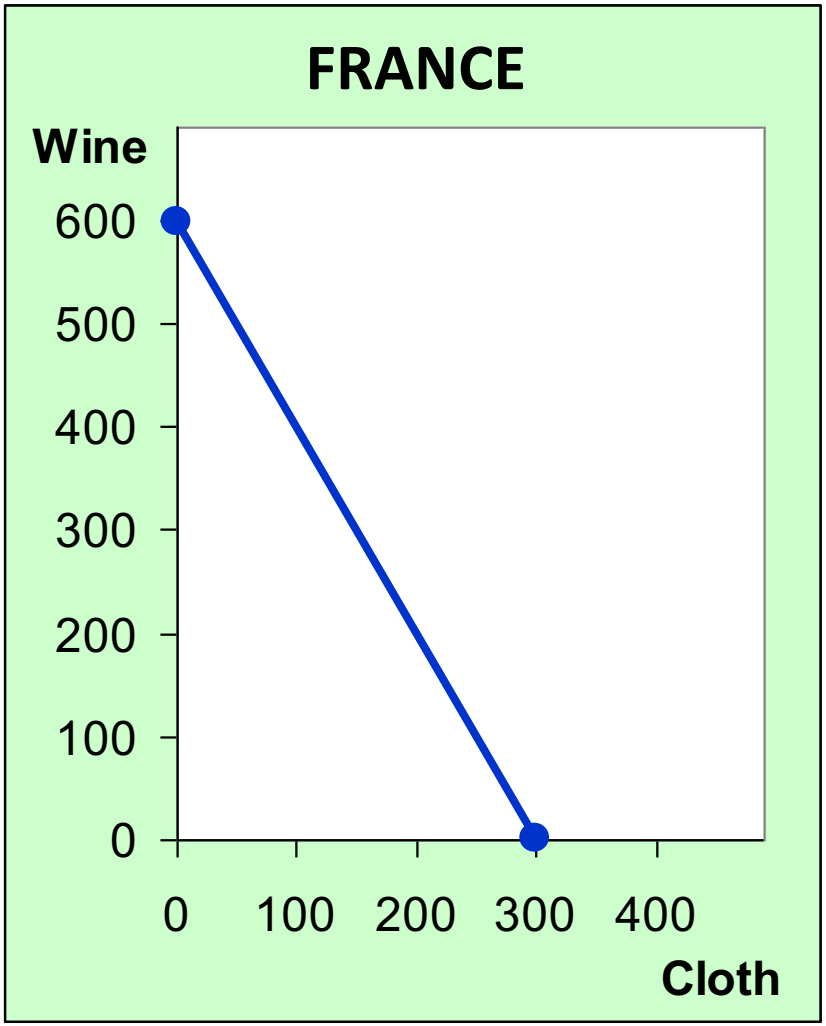
Q: In which country is the opportunity cost of cloth lower?

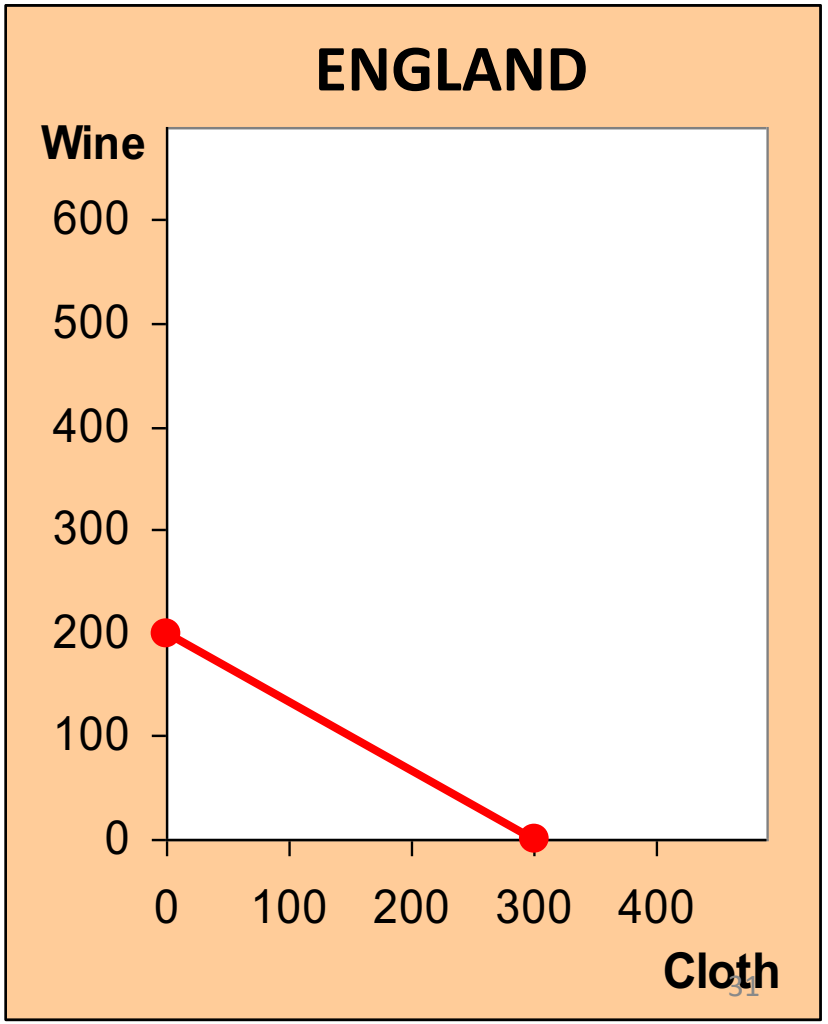




Example

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



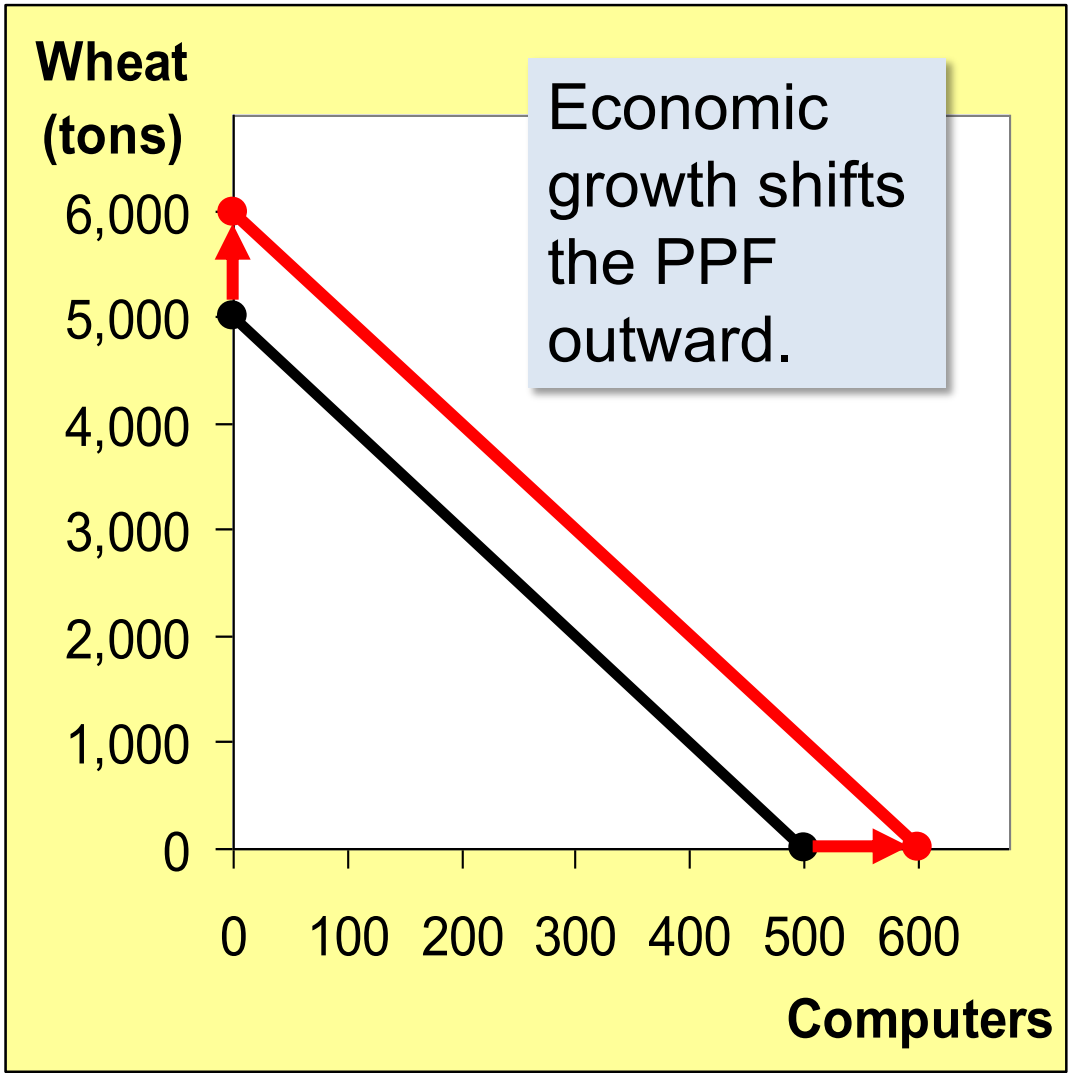


X. Economic Growth and the PPF

With additional resources or an improvement in technology, the economy can produce more computers,

more wheat,

or any combination in between.



XI. The Shape of the PPF

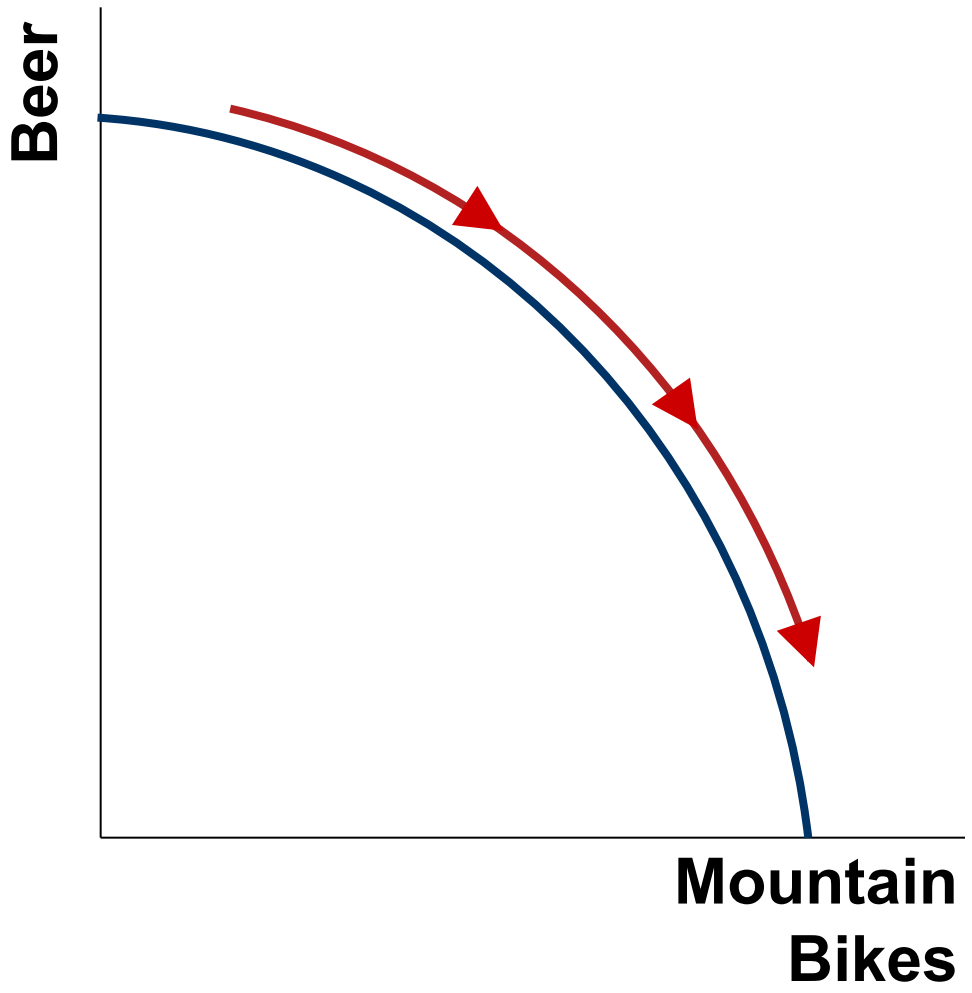
- The PPF could be a straight line or bow-shaped.
- It depends on what happens to the opportunity cost as the economy shifts resources from one industry to the other.
  - If the opportunity cost remains constant, the PPF is a straight line.

    (In the previous example, the opp. cost of a computer was always 10 tons of wheat.)
  - If the opportunity cost of a good rises as more of the good is produced, PPF is bow-shaped….

XII. Why the PPF Might Be Bow-Shaped

As the economy shifts resources from beer to mountain bikes:

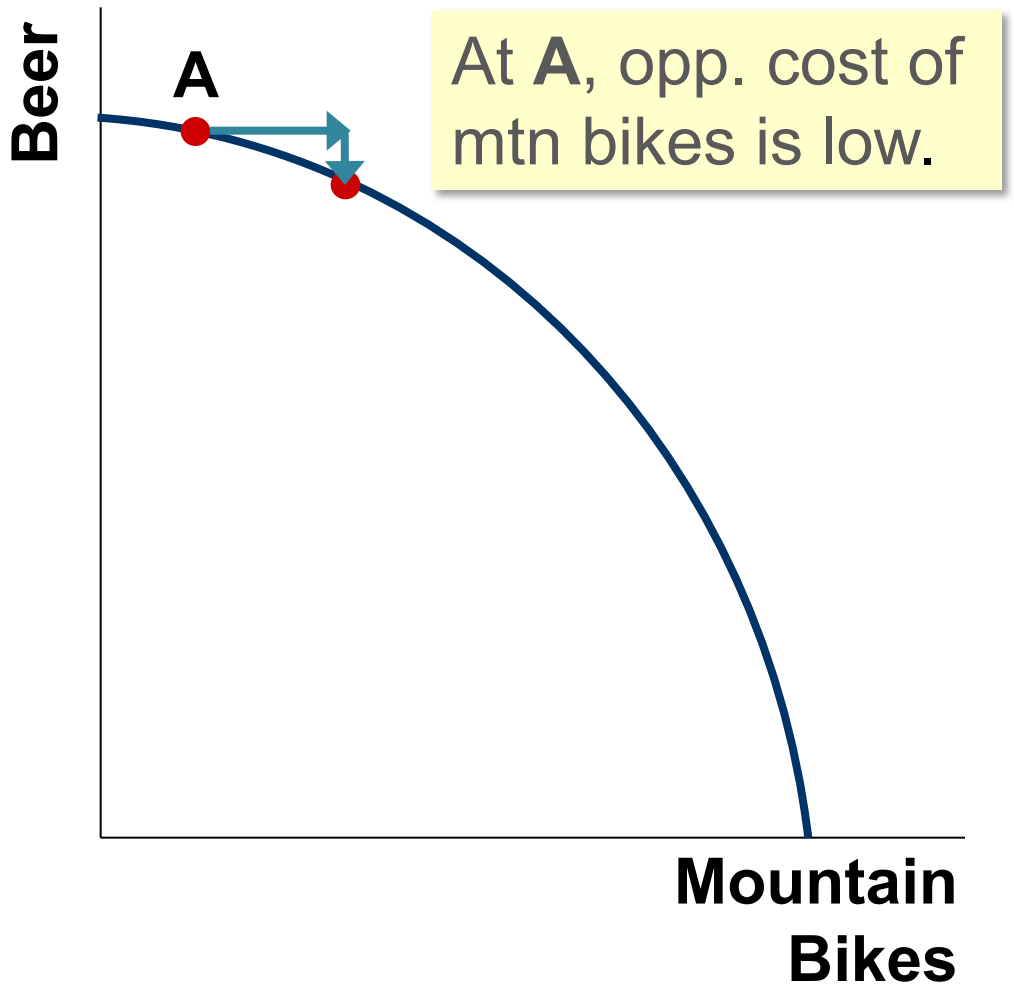
- PPF becomes steeper.
- opp. cost of mountain bikes increases.



XII. Why the PPF Might Be Bow-Shaped

At point **A**,
most workers are
producing beer,
even those who
are better suited
to building bikes.

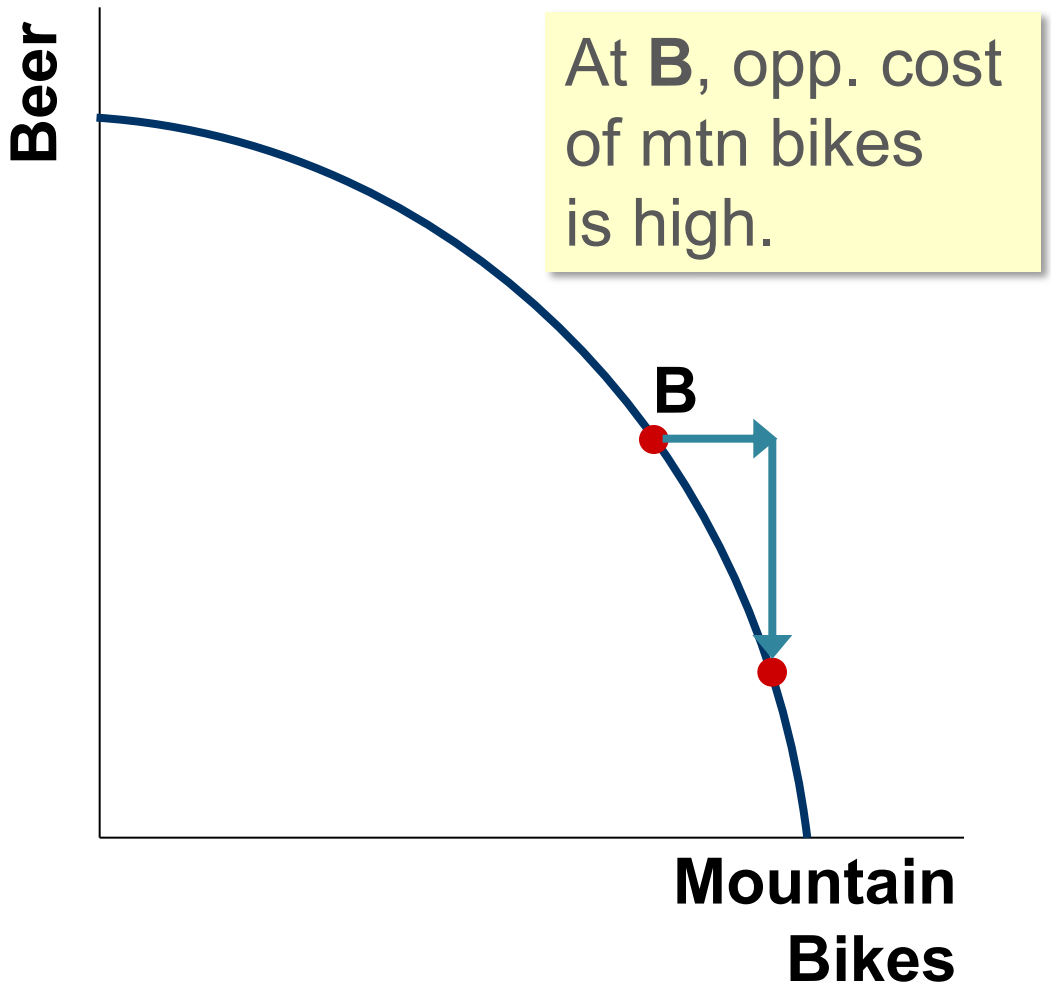
So, we do not have to
give up much beer
to get more bikes.



XII. Why the PPF Might Be Bow-Shaped

At **B**, most workers are producing bikes.
The few left in beer 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.



XII. Why the PPF Might Be Bow-Shaped

- In short, PPF is bow-shaped when different workers have different skills, different opportunity costs of producing one good in terms of the other.
- The PPF would also be bow-shaped when there is some other resource, or mix of resources with varying opportunity costs (E.g., different types of land suited for different uses).

PPF Summary

- The PPF shows all combinations of two goods that an economy can possibly produce, given its resources and technology.
- The PPF illustrates the concepts of tradeoff and opportunity cost, efficiency and inefficiency, unemployment, and economic growth.
- A bow-shaped PPF illustrates the concept of increasing opportunity cost.

XIII. The Economist as Policy Advisor

- As scientists, economists make positive statements, which attempt to describe the world as it is.
- As policy advisors, economists make normative statements, which attempt to prescribe how the world should be.
- Positive statements can be confirmed or refuted, normative statements cannot.
- The Government employs many economists for policy advice. E.g., the U.S. President has a Council of Economic Advisors, which the author of this textbook chaired from 2003 to 2005.

Example

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.

Example

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.

Example

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.

XIV. Why Economists Disagree

- Economists often give conflicting policy advice.
- They sometimes disagree about the validity of alternative positive theories about the world.
- They 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.

XV. Propositions about Which Most Economists Agree (and % who agree) 1 of 2

- 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 agriculture subsidies. (85%)

continued…

XV. Propositions about Which Most Economists Agree (and % agreeing) 2 of 2

- The gap between Social Security funds and expenditures will become unsustainably large within the next fifty years if current policies remain unchanged. (85%)
- A large federal budget deficit has an adverse effect on the economy. (83%)
- A minimum wage increases unemployment among young and unskilled workers. (79%)
- Effluent taxes and marketable pollution permits represent a better approach to pollution control than imposition of pollution ceilings. (78%)

Summary

- As scientists, economists try to explain the world using models with appropriate assumptions.
- Two simple models are the Circular-Flow Diagram and the Production Possibilities Frontier.
- Microeconomics studies the behavior of consumers and firms, and their interactions in markets. Macroeconomics studies the economy as a whole.
- As policy advisers, economists offer advice on how to improve the world.