بسمه تعالی

مبانی اقتصاد

مبادله

سیدعلی مدنی‌زاده

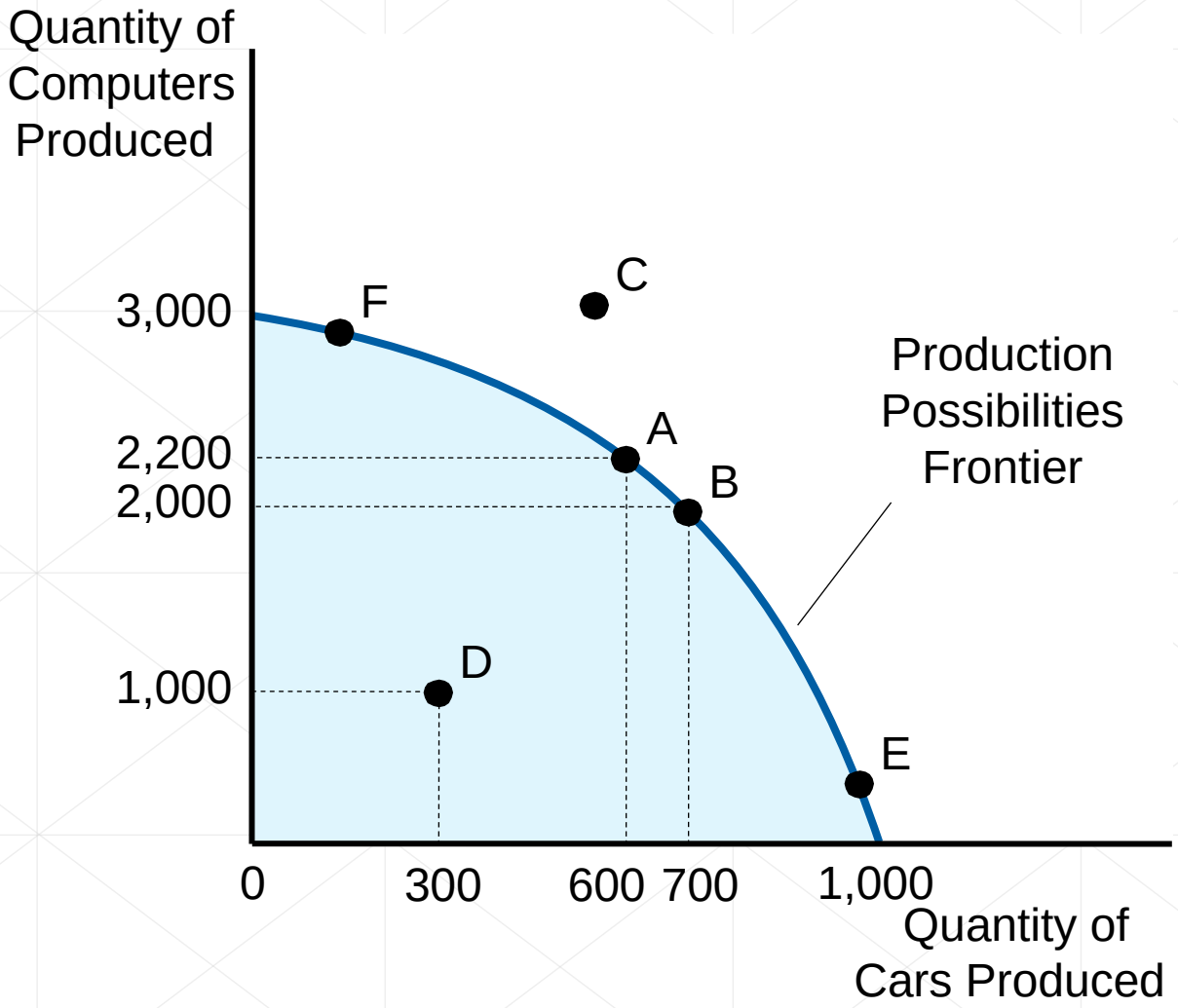
پاییز ۱۴۰۰

مرز امکانات تولید

Production Possibilities Frontier

- Combinations of output that the economy can possibly produce
- Given the available
  - Factors of production
  - Production technology

The production possibilities frontier



- The production possibilities frontier shows the combinations of output—in this case, cars and computers—that the economy can possibly produce.
- The economy can produce any combination on or inside the frontier.
- Points outside the frontier are not feasible given the economy's resources.
- The slope of the production possibilities frontier measures the opportunity cost of a car in terms of computers. This opportunity cost varies, depending on how much of the two goods the economy is producing.

Production Possibilities Frontier

- Efficient levels of production
  - The economy is getting all it can from the scarce resources available
  - Points on the production possibilities frontier
  - Trade-off:
    - The only way to produce more of one good is to produce less of the other good
    - Moving from point A to point B: give up 200 computers to produce 100 more cars

Production Possibilities Frontier

- Inefficient levels of production
  - Points inside production possibilities frontier
- Opportunity cost of producing one good
  - Give up producing units of the other good
  - Slope of the production possibilities frontier

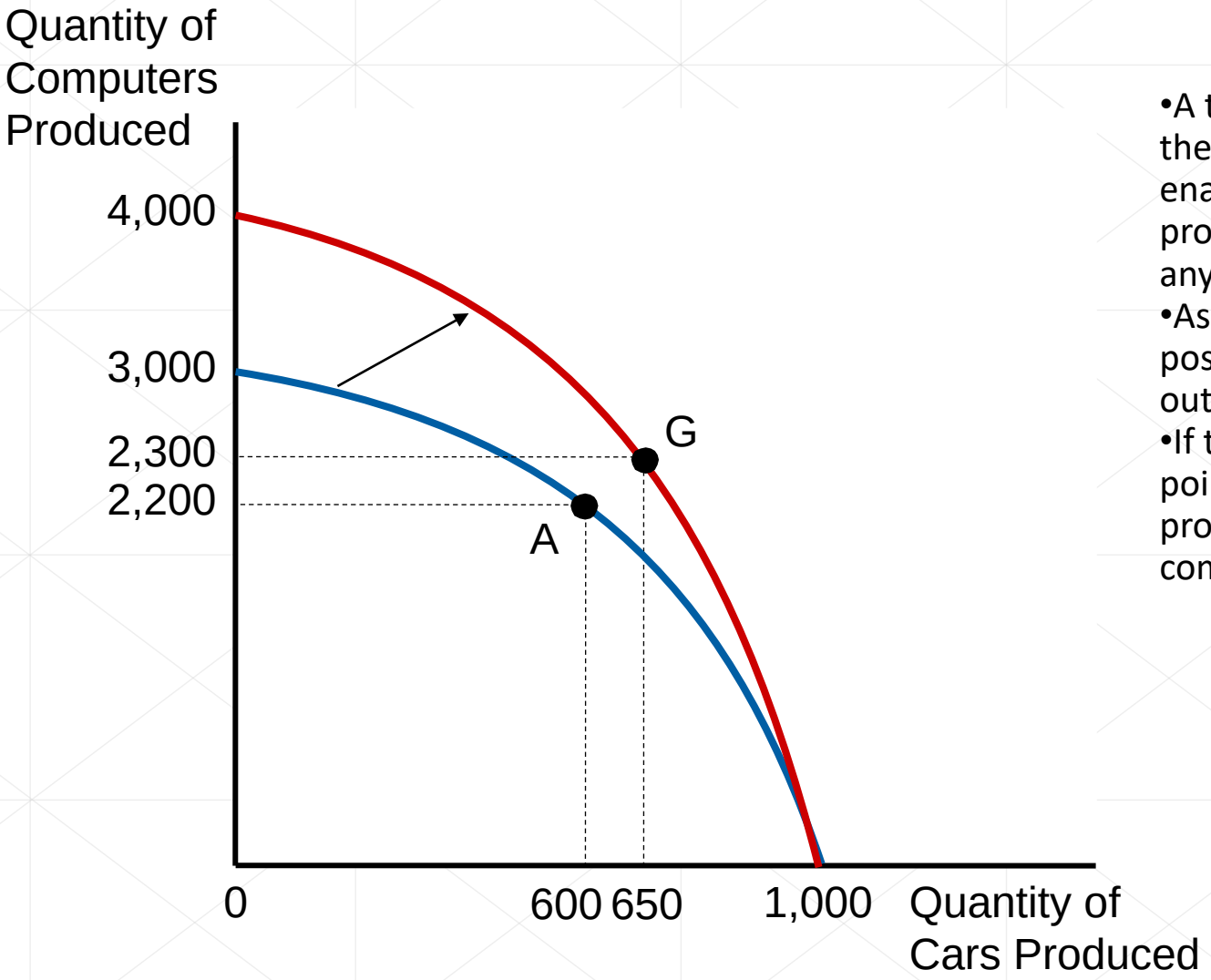
Production Possibilities Frontier

- Bowed outward production possibilities frontier
  - Opportunity cost of a car is highest
    - When the economy is producing many cars and fewer computers
  - Opportunity cost of a car is lower
    - When the economy is producing fewer cars and many computers
  - Resource specialization

Production Possibilities Frontier (Shifters)

- Technological advance
  - Outward shift of the production possibilities frontier
  - Economic growth
  - Produce more of both goods

Shift in the production possibilities frontier



- A technological advance in the computer industry enables the economy to produce more computers for any given number of cars.
- As a result, the production possibilities frontier shifts outward.
- If the economy moves from point A to point G, then the production of both cars and computers increases.

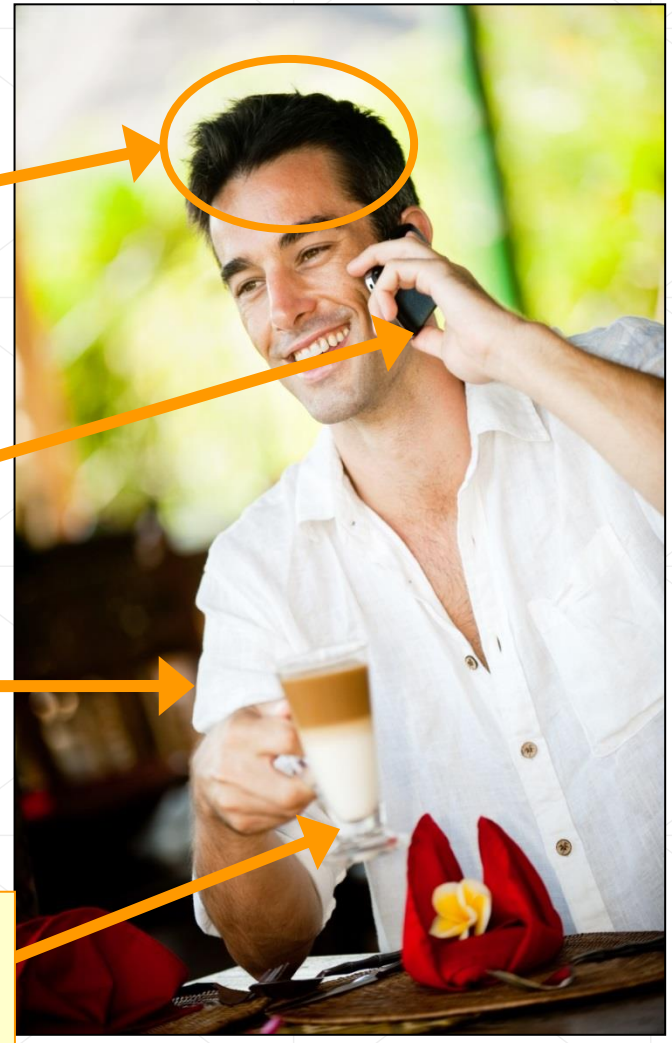
مبادله و منافع آن

Look for the answers to these questions:

- Why do people – and nations – choose to be economically interdependent?
- How can trade make everyone better off?
- What is absolute advantage?
- What is comparative advantage?
- How are these concepts similar?
- How are they different?

Interdependence

Every day you rely on many people from around the world, most of whom you've never met, to provide you with the goods and services you enjoy.

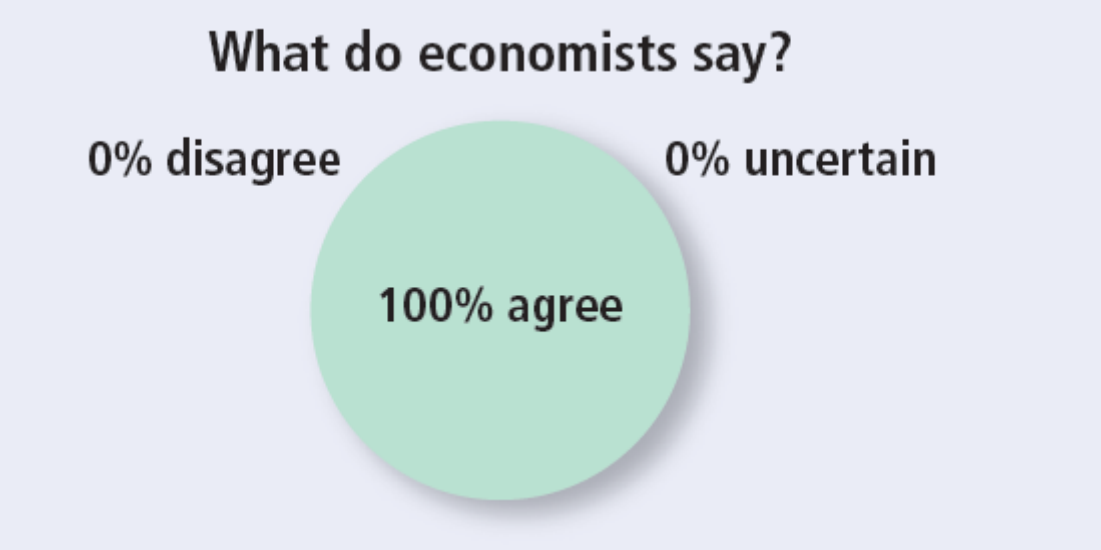


Interdependence

- “Trade can make everyone better off”
  - One of the Ten Principles from Chapter 1
  - We now learn why people – and nations – choose to be interdependent
  - And how they can gain from trade

Trade between Iran and China

"Trade with China makes most Iranians better off because, among other advantages, they can buy goods that are made or assembled more cheaply in China."



Our Example

- Two countries:
  - The U.S. and Japan
- Two goods:
  - Computers and wheat
- One resource:
  - Labor, measured in hours
- 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

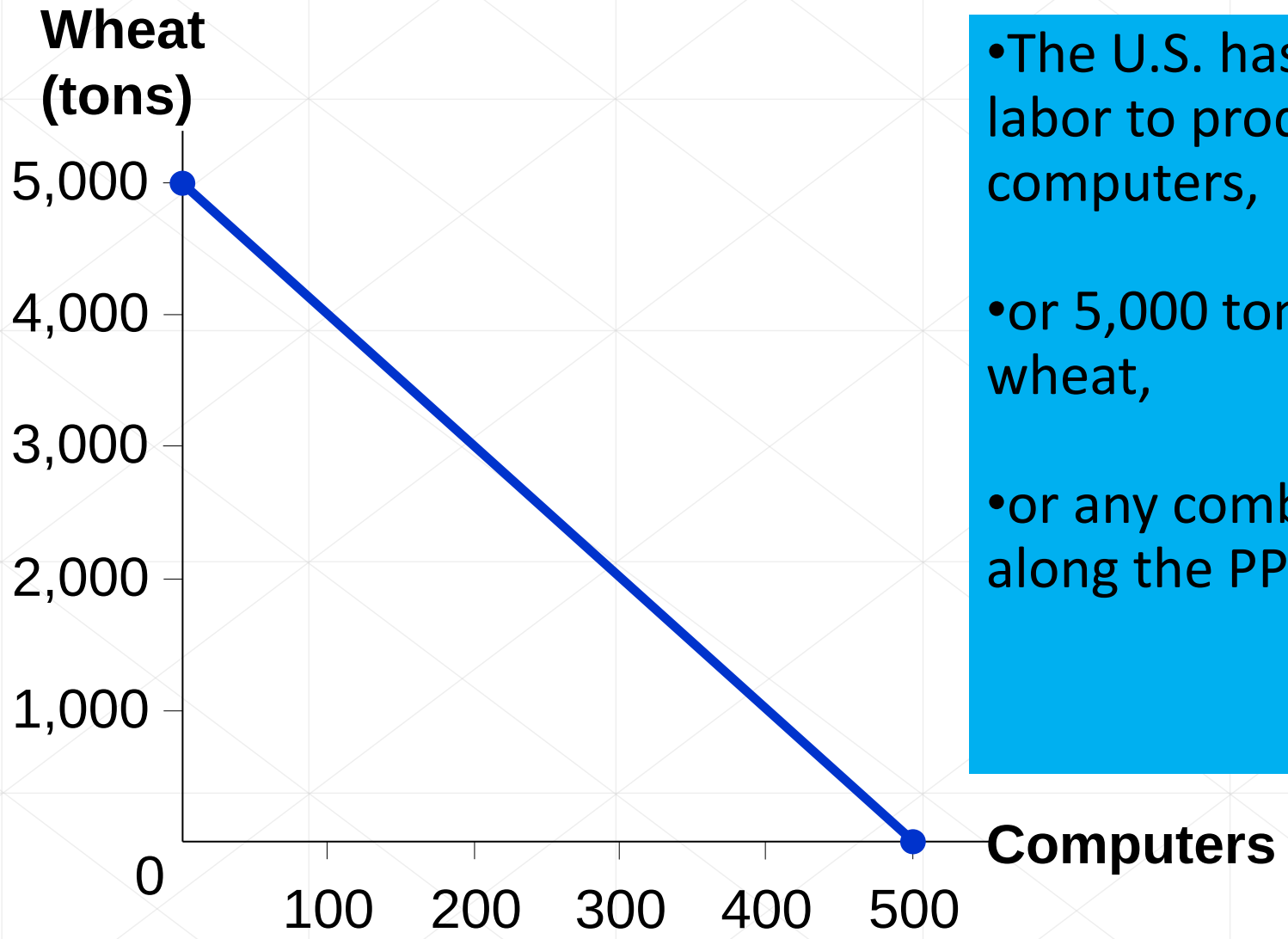
Our Example

- Production Possibilities in the 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

- Opportunity cost of producing a computer is 10 tons of wheat.

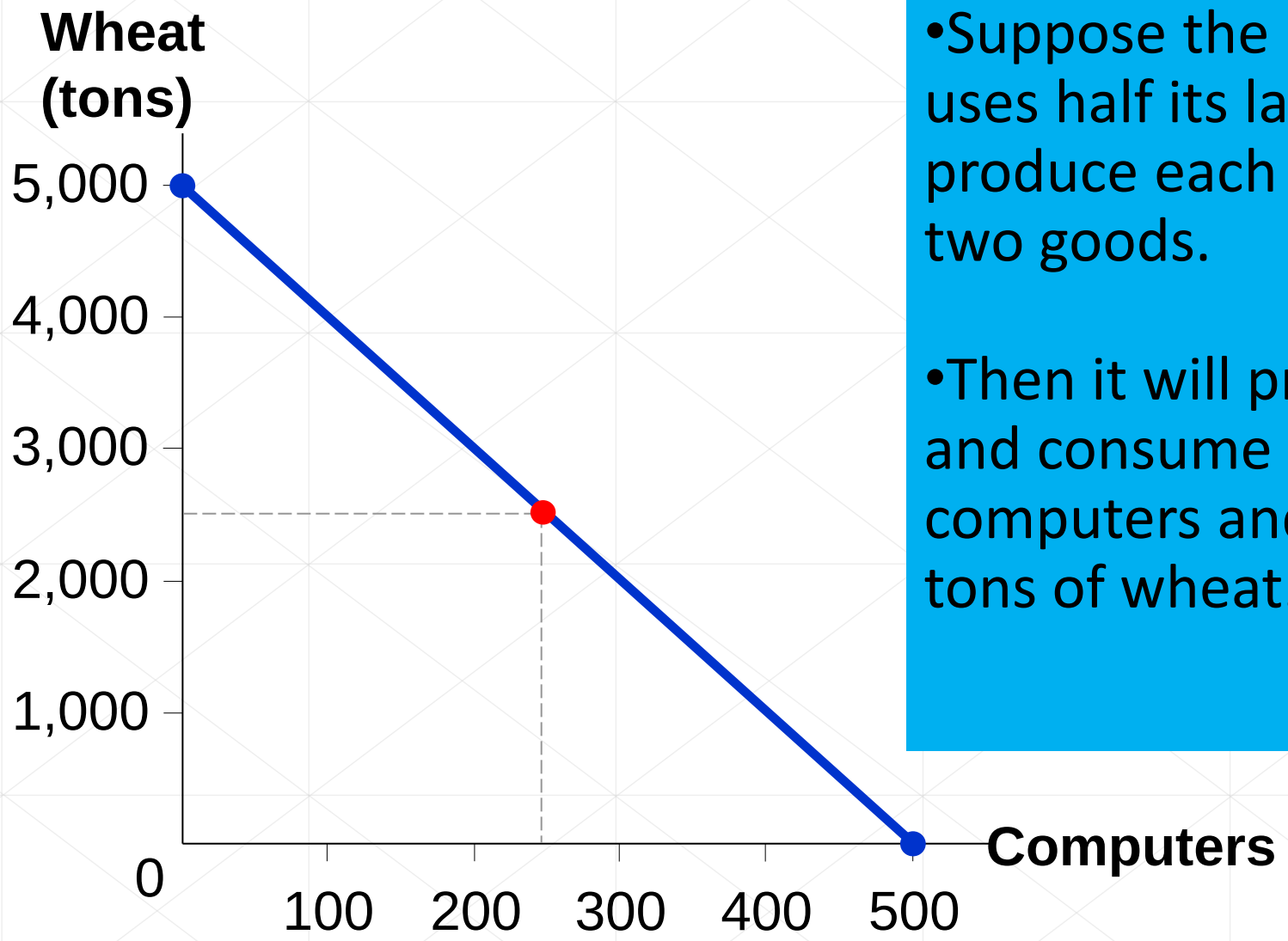
- Opportunity cost of producing a ton of wheat is 0.1 computer

The U.S. PPF



- The U.S. has enough labor to produce 500 computers,
- or 5,000 tons of wheat,
- or any combination along the PPF.

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 2,500 tons of wheat.

Active Learning 1 Derive Japan's PPF

Use the following information to draw Japan's PPF.

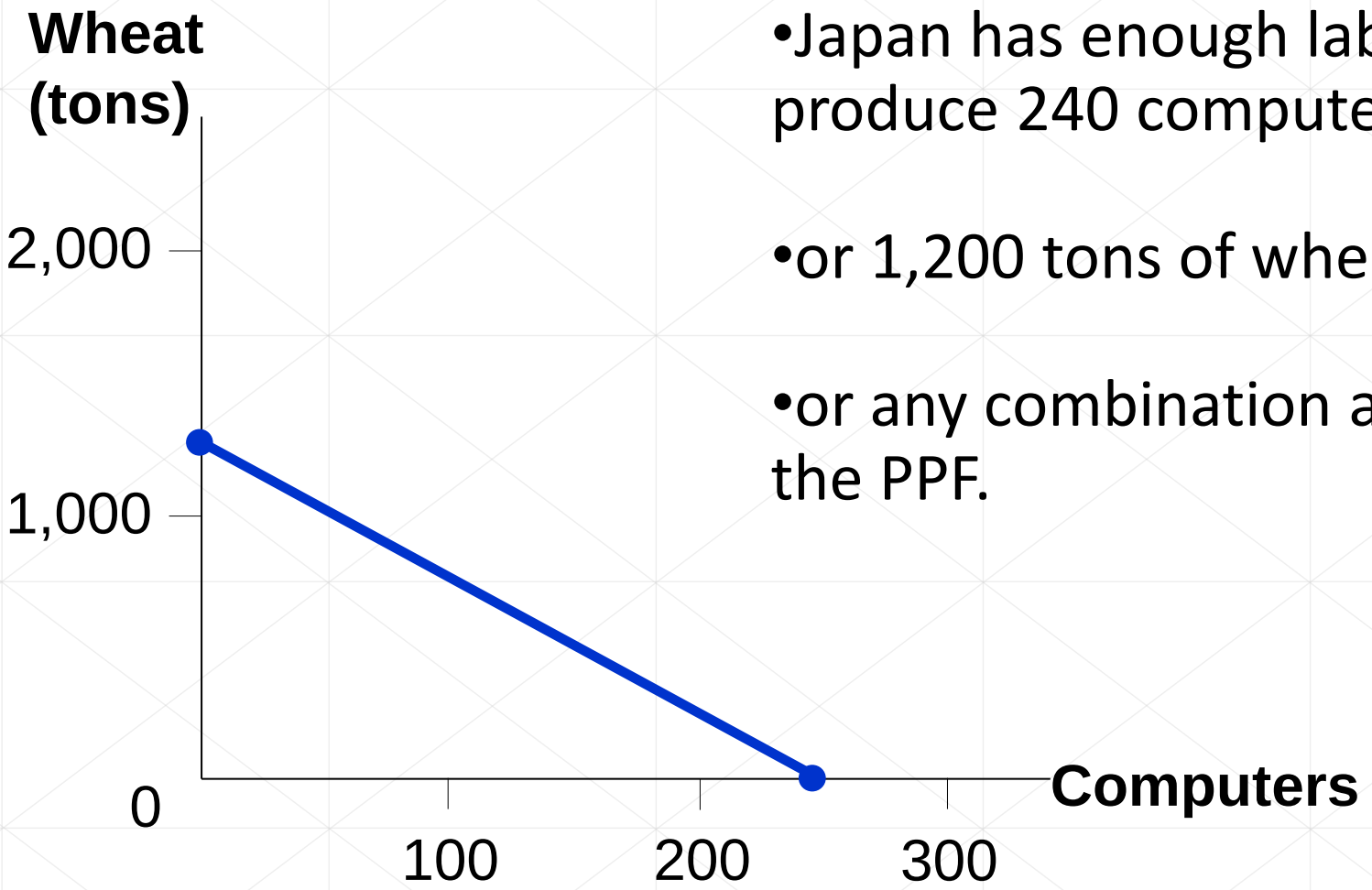
- Japan has 30,000 hours of labor available for production, per month.
- Producing one computer requires 125 hours of labor.
- Producing one ton of wheat requires 25 hours of labor.
- Your graph should measure computers on the horizontal axis.

- Opportunity cost of producing a computer is 5 tons of wheat.

- Opportunity cost of producing a ton of wheat is 0.2 computer

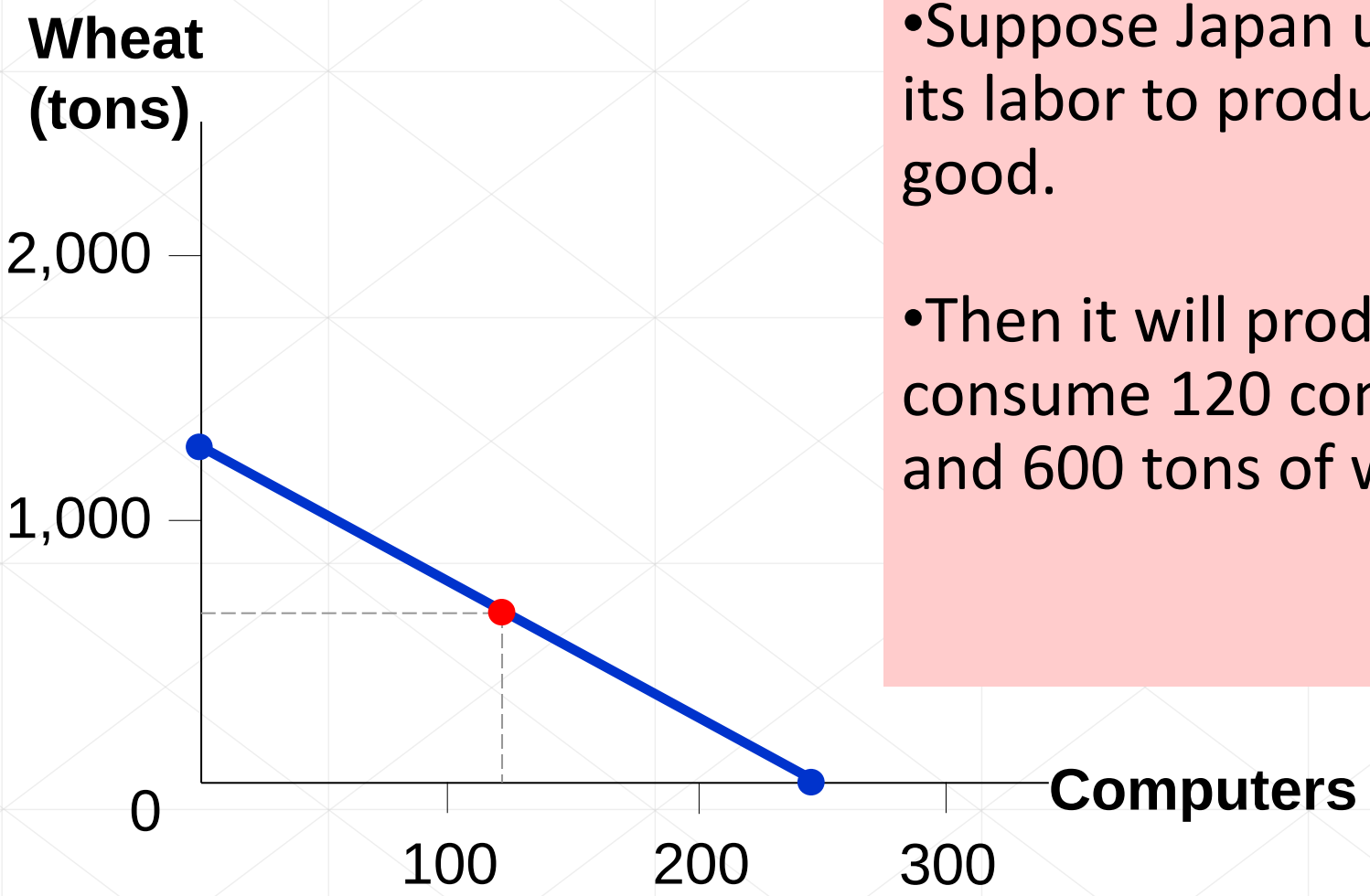
Active Learning 1

Japan's PPF



- Japan has enough labor to produce 240 computers,
- or 1,200 tons of wheat,
- or any combination along the PPF.

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.

Consumption With and Without Trade

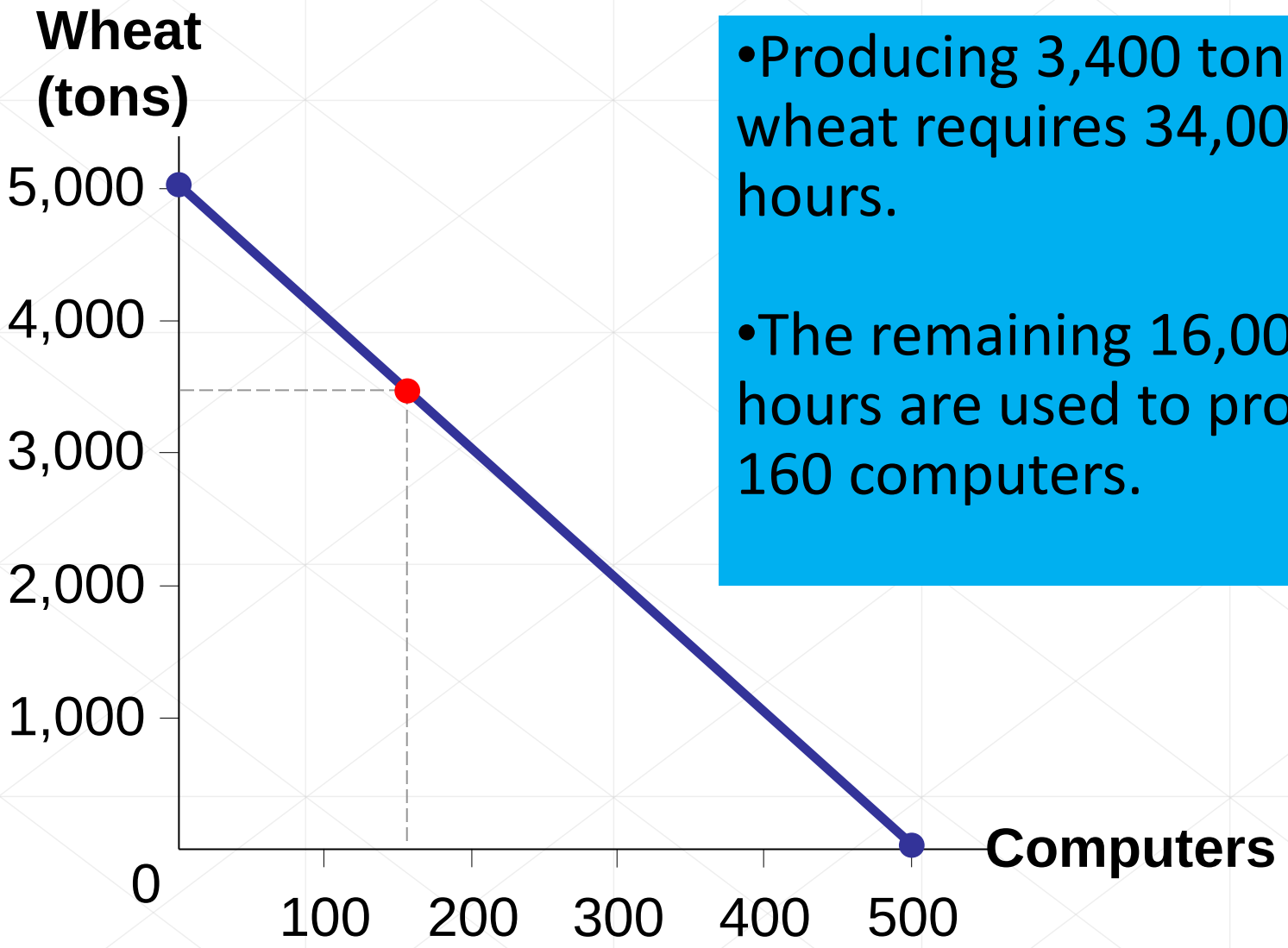
- Without trade:
  - U.S. consumers get 250 computers and 2500 tons wheat
  - Japanese consumers get 120 computers and 600 tons wheat
- Comparison
  - Consumption without trade vs. consumption with trade
  - We need to see how much of each good is produced and traded by the two countries

Active Learning 2 Production under trade

A. Suppose the U.S. produces 3400 tons of wheat.
   - How many computers would the U.S. be able to produce with its remaining labor?
   - Draw the point representing this combination of computers and wheat on the U.S. PPF.

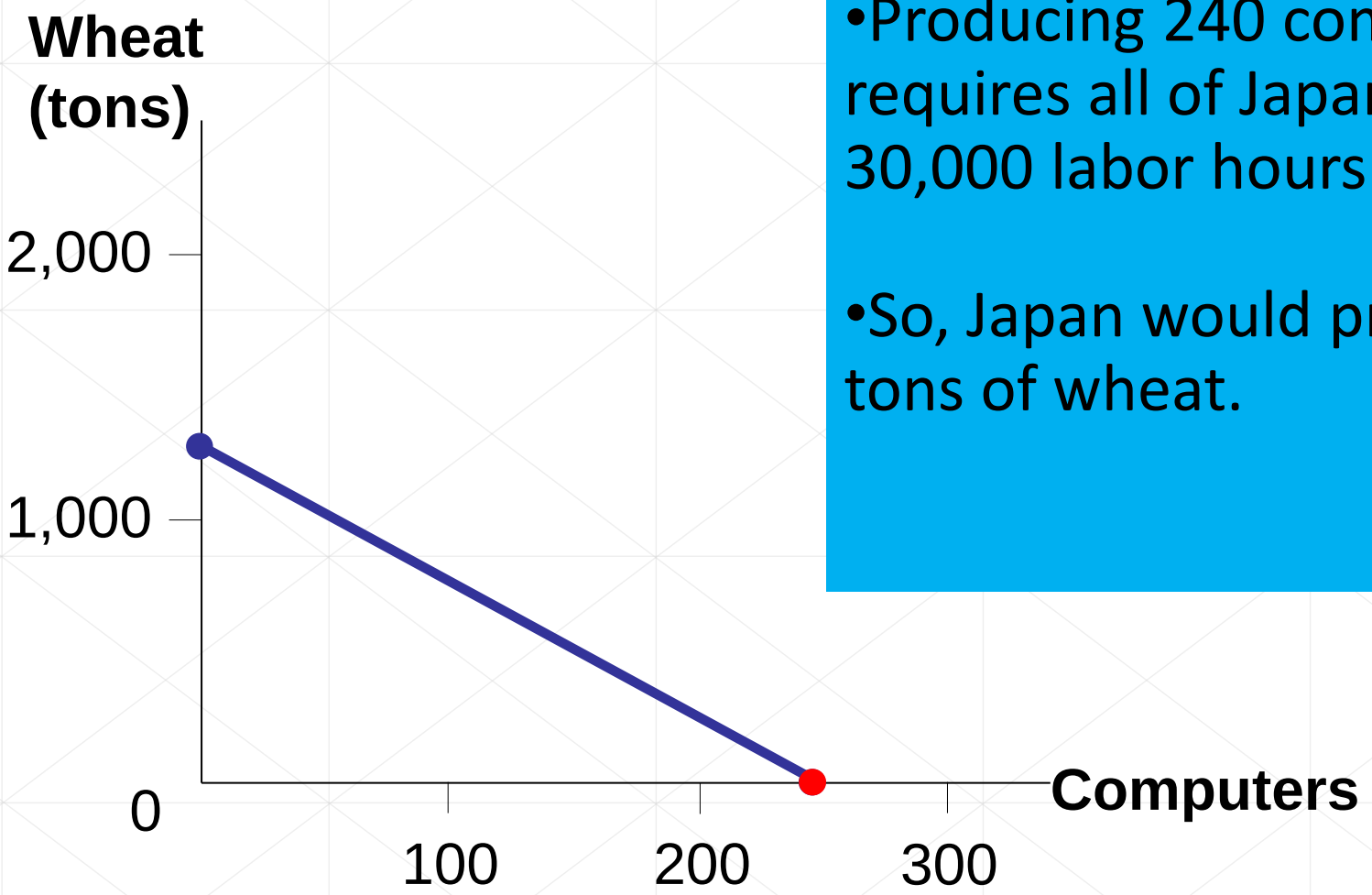
B. Suppose Japan produces 240 computers.
   - How many tons of wheat would Japan be able to produce with its remaining labor?
   - Draw this point on Japan's PPF.

Active Learning 2 A. U.S. Production With Trade



- Producing 3,400 tons of wheat requires 34,000 labor hours.
- The remaining 16,000 labor hours are used to produce 160 computers.

Active Learning 2 B. Japan's Production With Trade



- Producing 240 computers requires all of Japan's 30,000 labor hours.
- So, Japan would produce 0 tons of wheat.

Exports and Imports

- Imports
  - –Goods produced abroad and sold domestically
- Exports
  - –Goods produced domestically and sold abroad

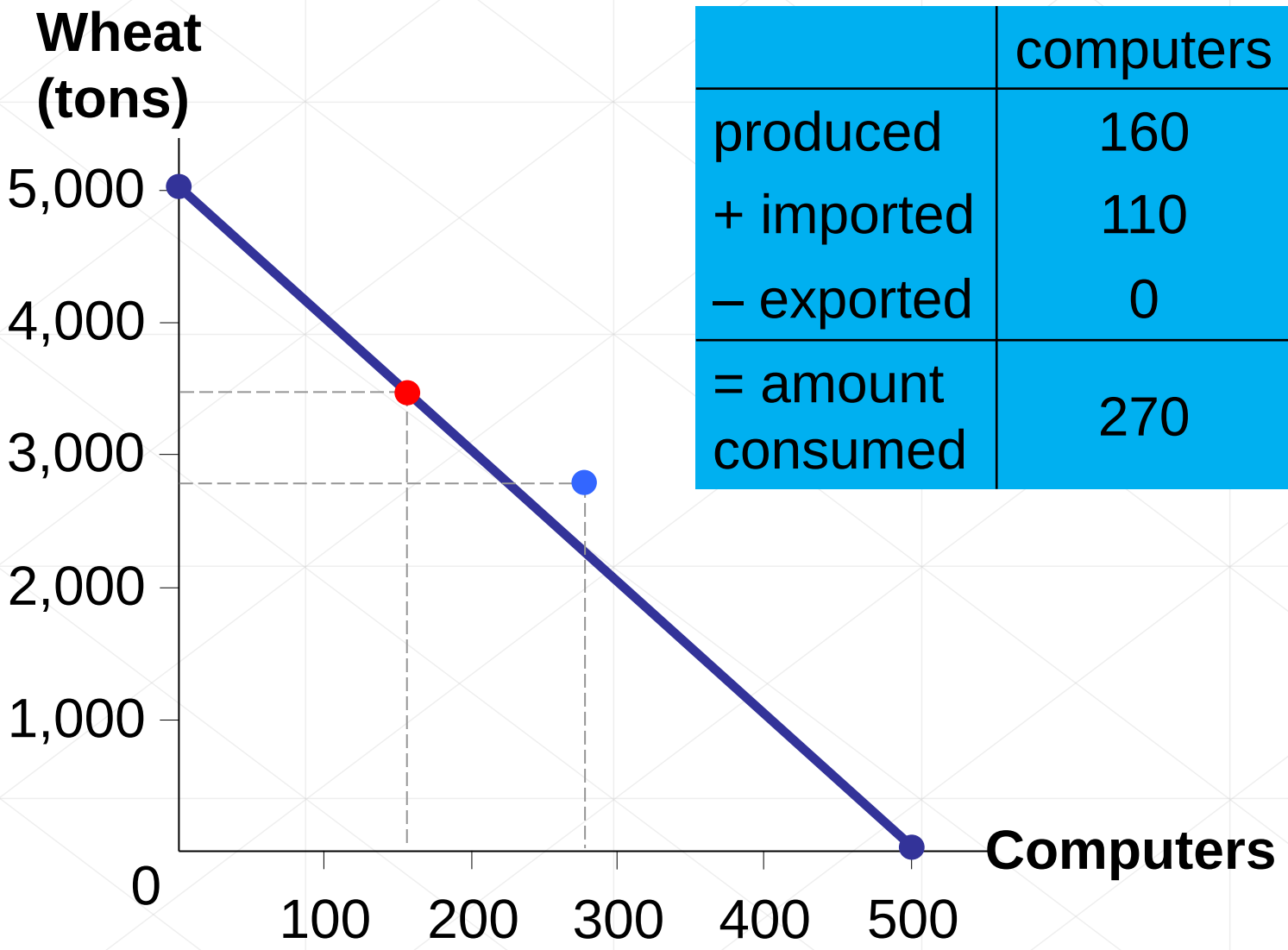
Active Learning 3 Consumption under trade

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

A. How much of each good is consumed in the U.S.? Plot this combination on the U.S. PPF.

B. How much of each good is consumed in Japan? Plot this combination on Japan's PPF.

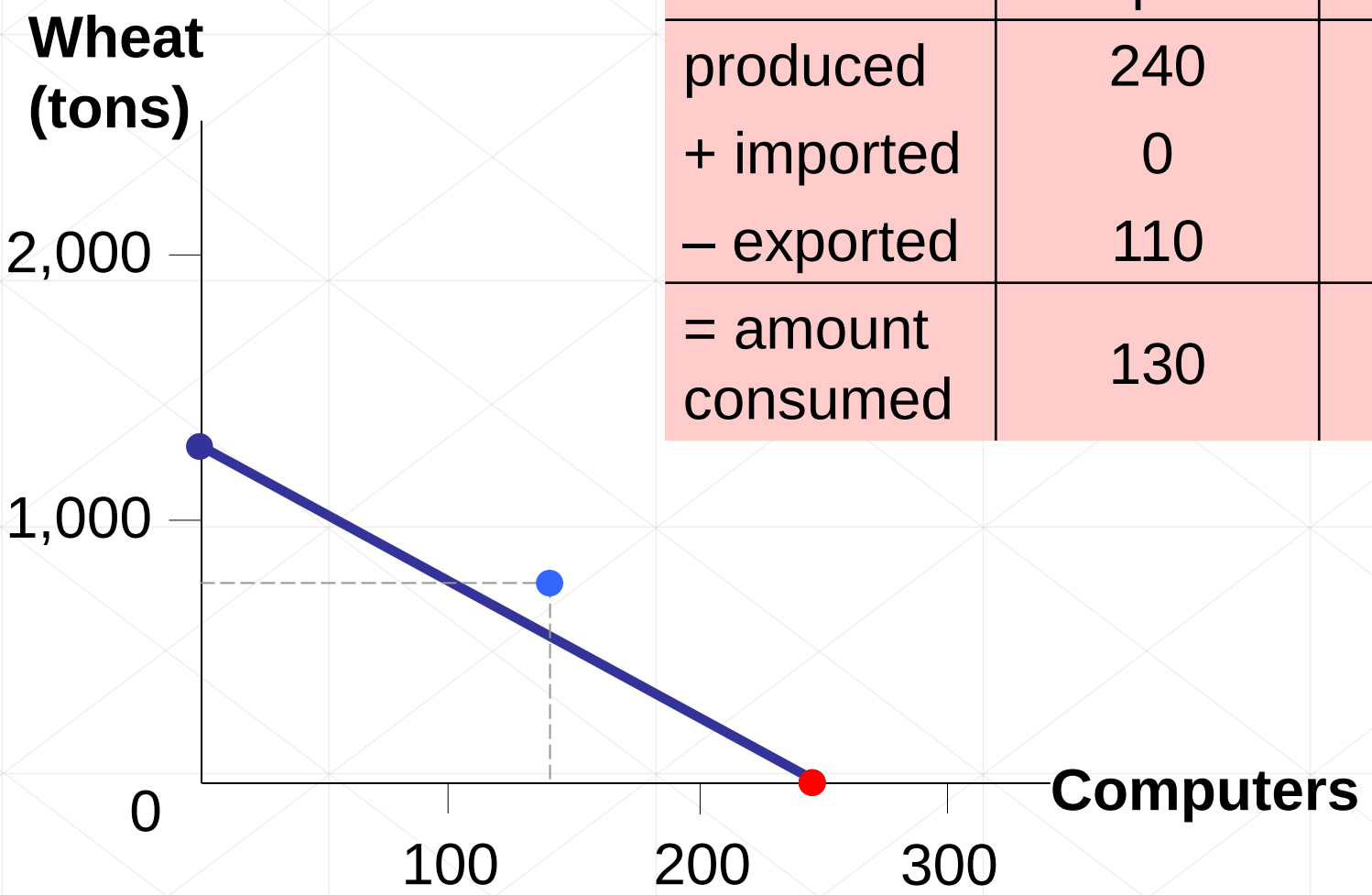
Active Learning 3 A. U.S. Consumption With Trade



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

Active Learning 3 B. 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

Where Do These Gains Come From?

- Absolute advantage:
  - The ability to produce a good using fewer inputs than another producer
  - The U.S. has absolute advantage in wheat
    - Producing a ton of wheat uses 10 labor hours in the U.S. vs. 25 in Japan
  - The U.S. has absolute advantage in computers
    - Producing one computer requires 125 labor hours in Japan, but only 100 in the U.S.

Where Do These Gains Come From?

The U.S. has an absolute advantage in both goods!

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

- Two countries can gain from trade
  - When each specializes in the good it produces at lowest cost

Two Measures of the Cost of a Good

- Absolute advantage
  - Measures the cost of a good in terms of the inputs required to produce it
- Another measure of cost: opportunity cost
  - The opportunity cost of a computer = amount of wheat that could be produced using the labor needed to produce one computer

Comparative Advantage

- Comparative advantage
  - The ability to produce a good at a lower opportunity cost than another producer
- Principle of comparative advantage
  - Each good should be produced by the individual that has the smaller opportunity cost of producing that good

Specialize according to comparative advantage

Comparative Advantage

- The opportunity cost of a computer is
  - 10 tons of wheat in the U.S.:
    - Producing one computer requires 100 labor hours, which instead could produce 10 tons of wheat
  - 5 tons of wheat in Japan:
    - Producing one computer requires 125 labor hours, which instead could produce 5 tons of wheat

Japan has comparative advantage in computers

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
  - All countries can gain from trade

Active Learning 4 Absolute and comparative advantage

Argentina, 10,000 hours of labor/month:

- producing 1 lb. coffee requires 2 hours;
- producing 1 bottle wine requires 4 hours

Brazil, 10,000 hours of labor/month:

- producing 1 lb. coffee requires 1 hour
- producing 1 bottle wine requires 5 hours

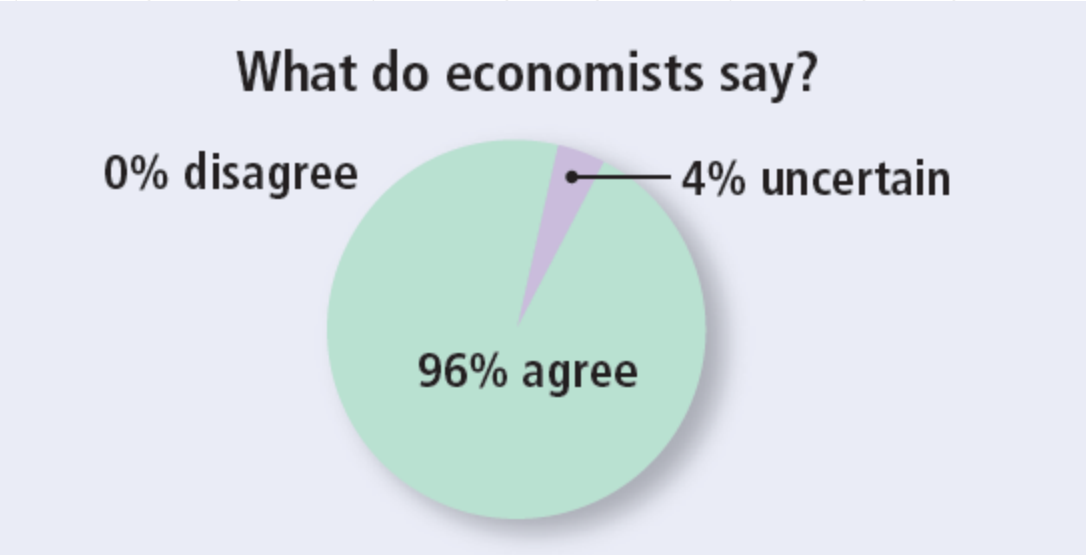
1. Which country has an absolute advantage in the production of coffee?
2. Which country has a comparative advantage in the production of wine?

Active Learning 4 Answers

1. Brazil: absolute advantage in coffee
   - Producing 1 lb. coffee:
     - One labor-hour in Brazil, but two in Argentina.
2. Argentina: comparative advantage in wine
   - Argentina's opportunity cost of wine is 2 lb. coffee
     - The four labor-hours required to produce a bottle of wine could instead produce 2 lb. coffee
   - Brazil's opportunity cost of wine is 5 lb. coffee

Trade between China and the Iran

"Some Iranians who work in the production of competing goods, such as clothing and furniture, are made worse off by trade with China."



Summary

- Interdependence and trade are desirable
  - Allow everyone to enjoy a greater quantity and variety of goods and services
- Comparative advantage: being able to produce a good at a lower opportunity cost
- Absolute advantage: being able to produce a good with fewer inputs
- The gains from trade are based on comparative advantage, not absolute advantage

Summary

- Trade makes everyone better off
  - It allows people to specialize in those activities in which they have a comparative advantage
- The principle of comparative advantage applies to countries as well as to people
- Economists use the principle of comparative advantage to advocate free trade among countries

منابع

- اسلایدهای کتاب مبانی اقتصاد منکیو
- اسلاید های درس مبانی اقتصاد دکتر نیلی
- اسلایدهای درس مبانی اقتصاد دکتر وصال

Reference

- Mankiw Slides:
  -