

Interdependence and the Gains from Trade

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

“An English princess with a Welsh title leaves a French hotel with her Egyptian companion, who has supplanted a Pakistani; she is driven in a German car with a Dutch engine by a Belgian chauffeur full of Scottish whiskey; they are chased by Italian paparazzi on Japanese motorcycles into a Swiss-built tunnel and crash; a rescue is attempted by an American doctor using Brazilian medicines, and the story is now being told to you by an Indian visiting Berlin. That’s globalization.”



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

ASK THE EXPERTS

Trade between China and the United States

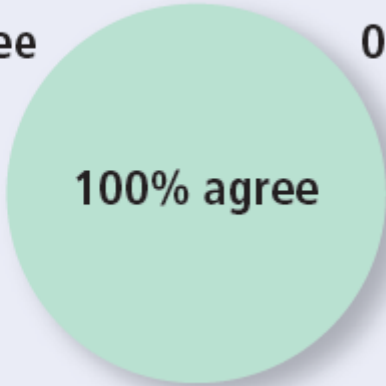
“Trade with China makes most Americans better off because, among other advantages, they can buy goods that are made or assembled more cheaply in China.”

What do economists say?

0% disagree

0% uncertain

100% agree





Our Example

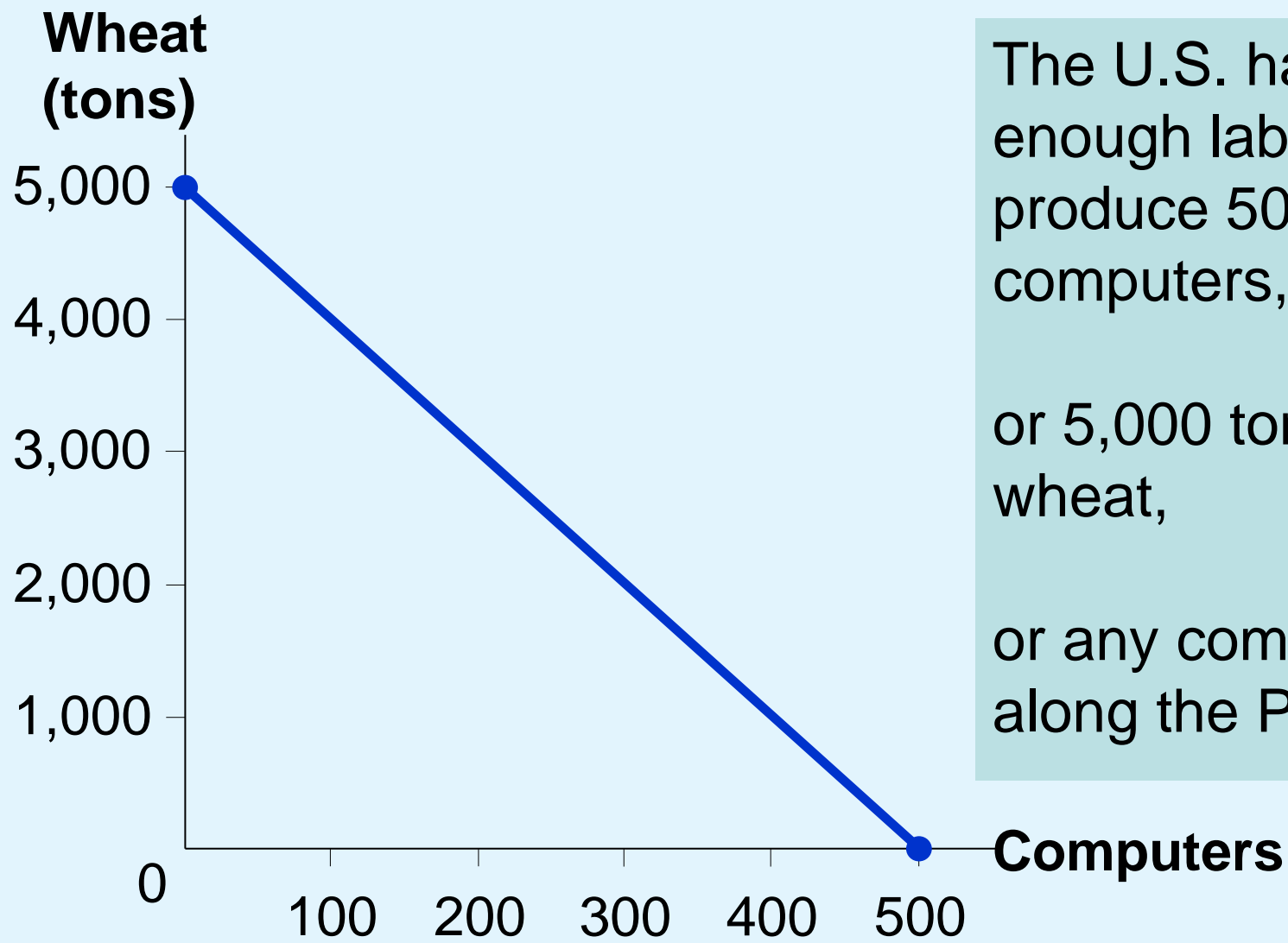
- Two countries:
 - The U.S. and India
- Two goods:
 - Computers and wheat
- One resource:
 - Labor, measured in hours
- How much of both goods each country produces and consumes
 - If the country chooses to be self-sufficient
 - If it trades with the other country



Our Example

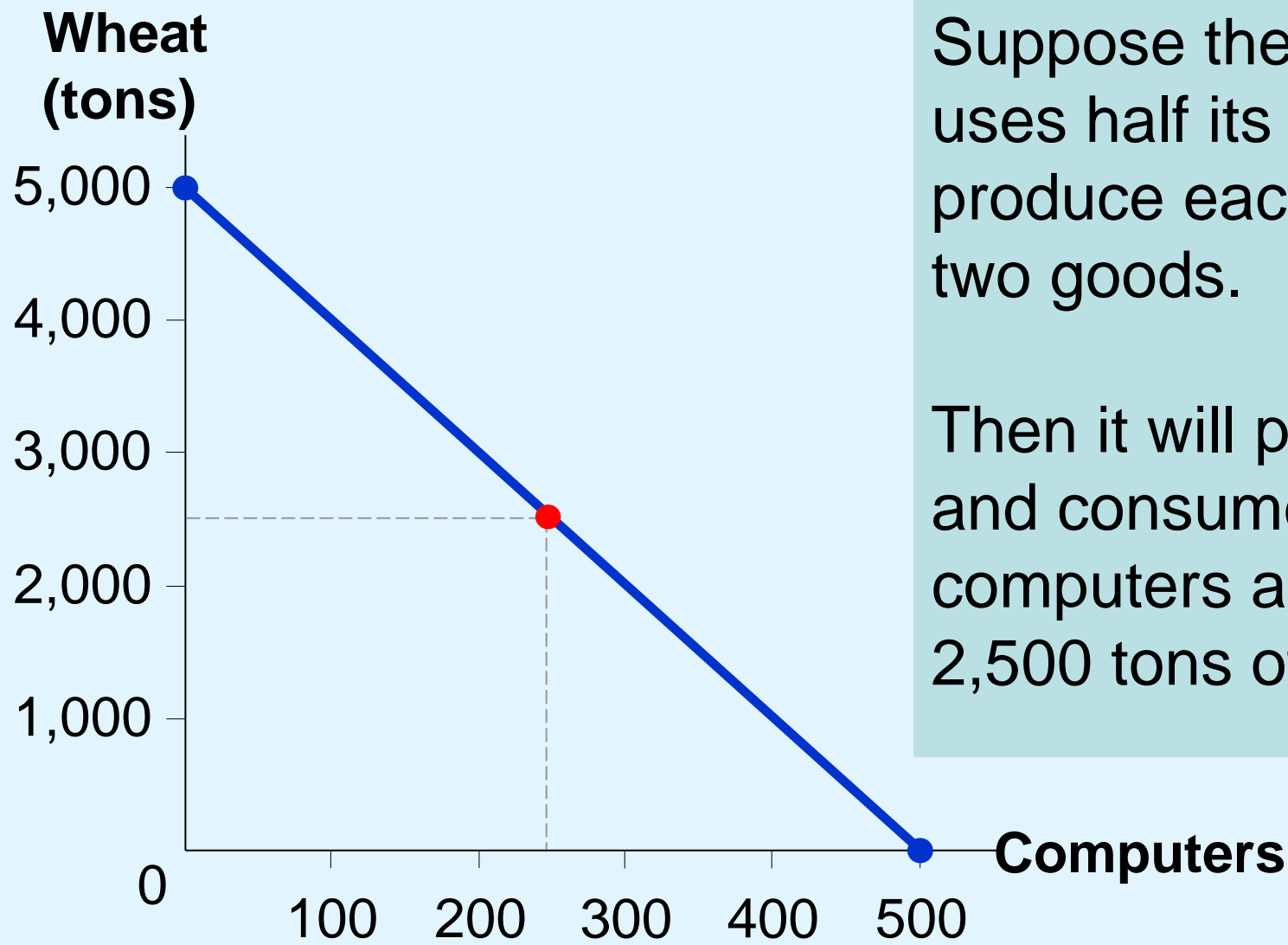
- Production Possibilities in the U.S.
 - The U.S. has 50,000 hours of labor available for production, per month
 - Producing one computer requires 100 hours of labor
 - Producing one ton of wheat requires 10 hours of labor

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

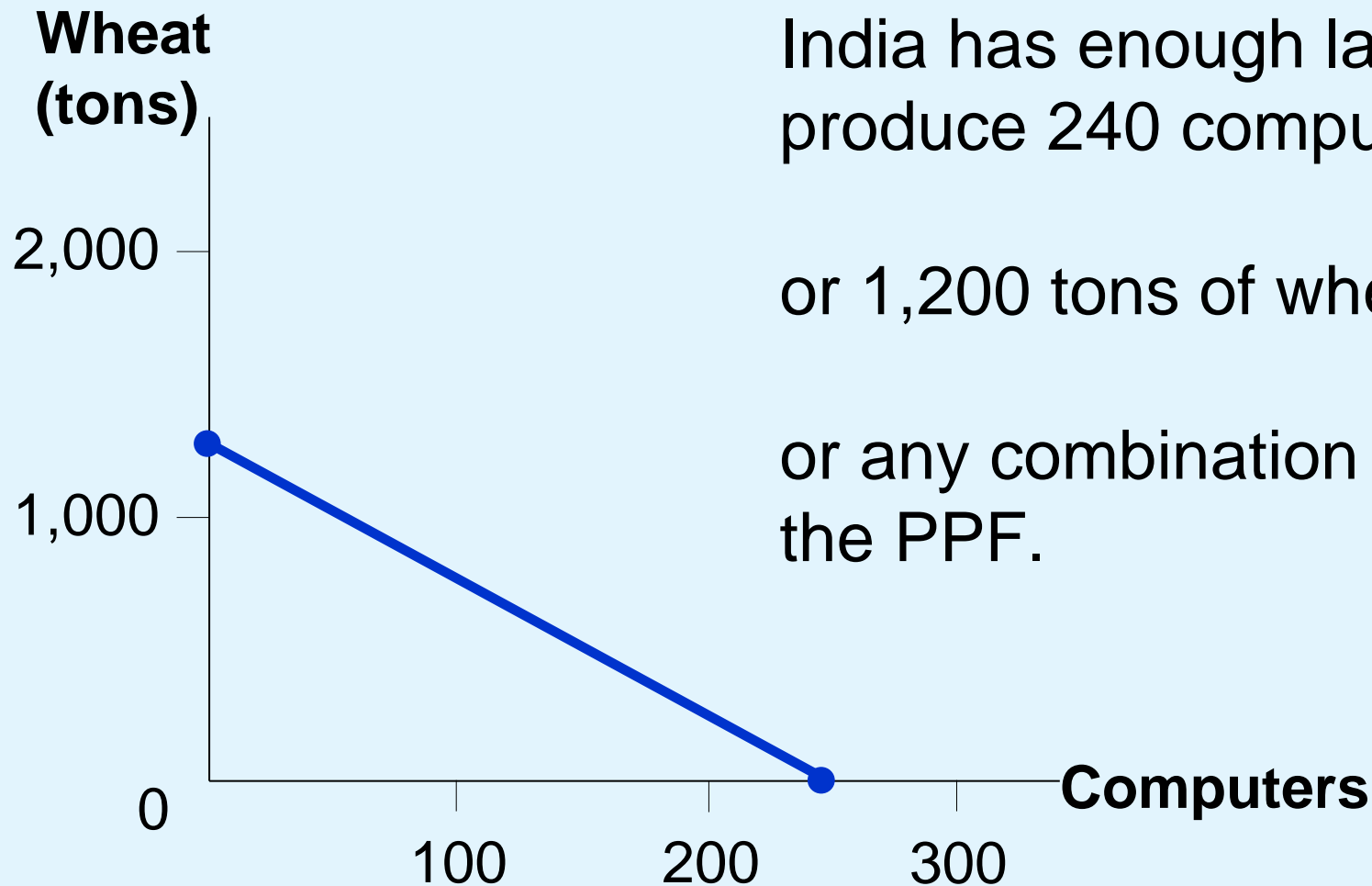


Suppose the U.S. uses half its labor to produce each of the two goods.

Then it will produce and consume 250 computers and 2,500 tons of wheat.

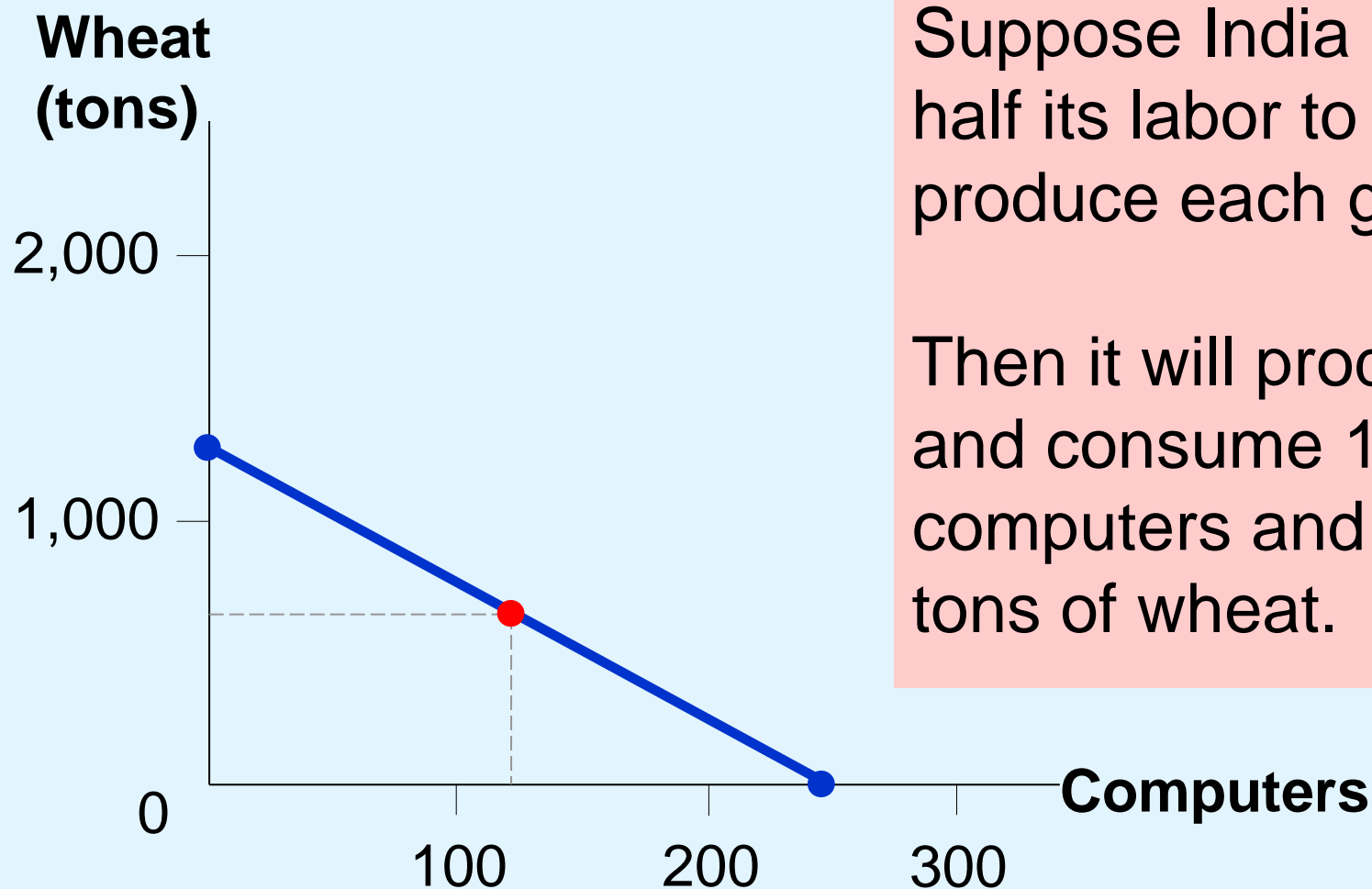
Use the following information to draw India's PPF.

- India 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.



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

India Without Trade



Suppose India 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

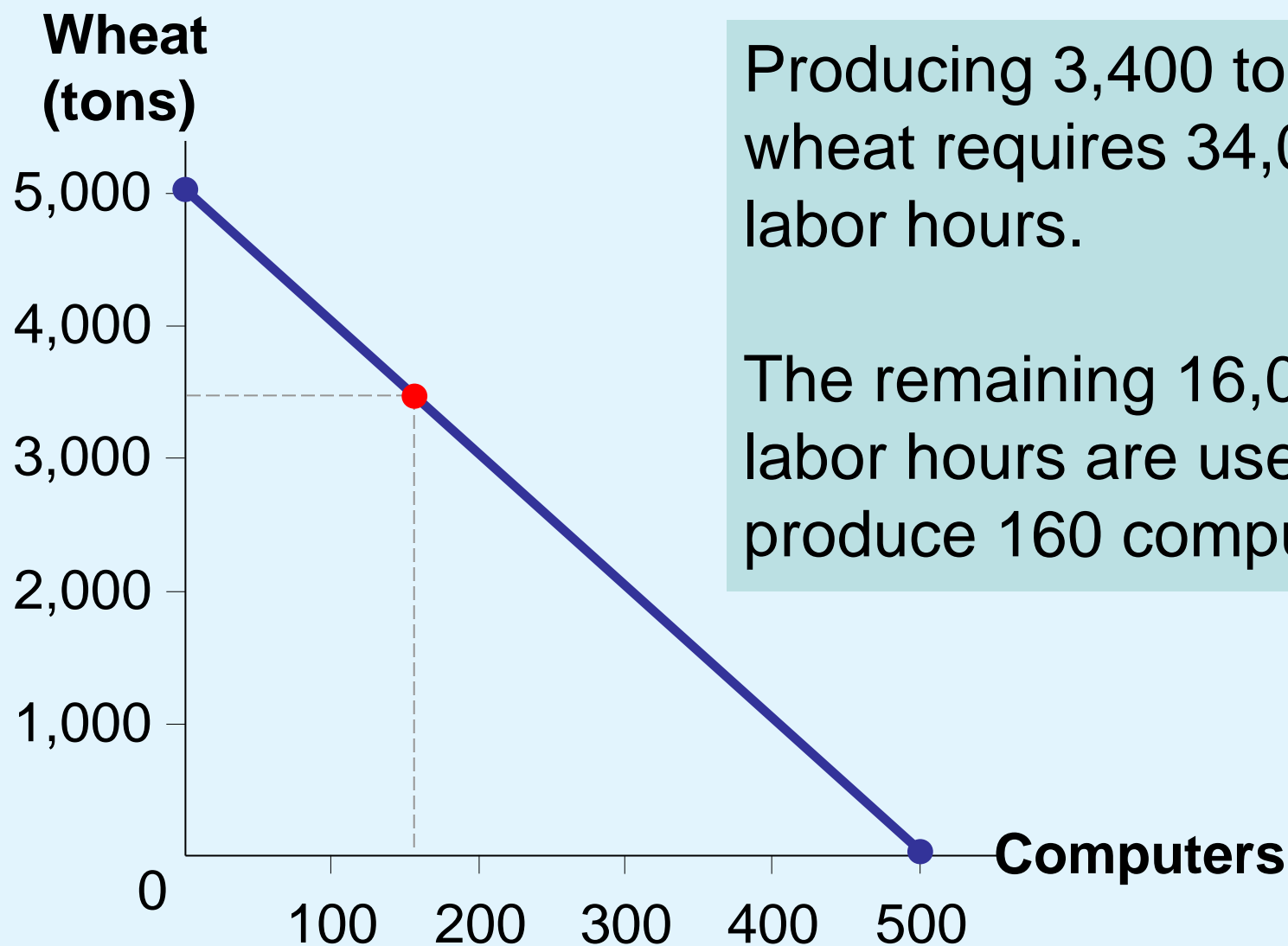
- Without trade:
 - U.S. consumers get 250 computers and 2500 tons wheat
 - Indian consumers get 120 computers and 600 tons wheat
- Comparison
 - Consumption without trade vs. consumption with trade
 - We need to see how much of each good is produced and traded by the two countries

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 India produces 240 computers.

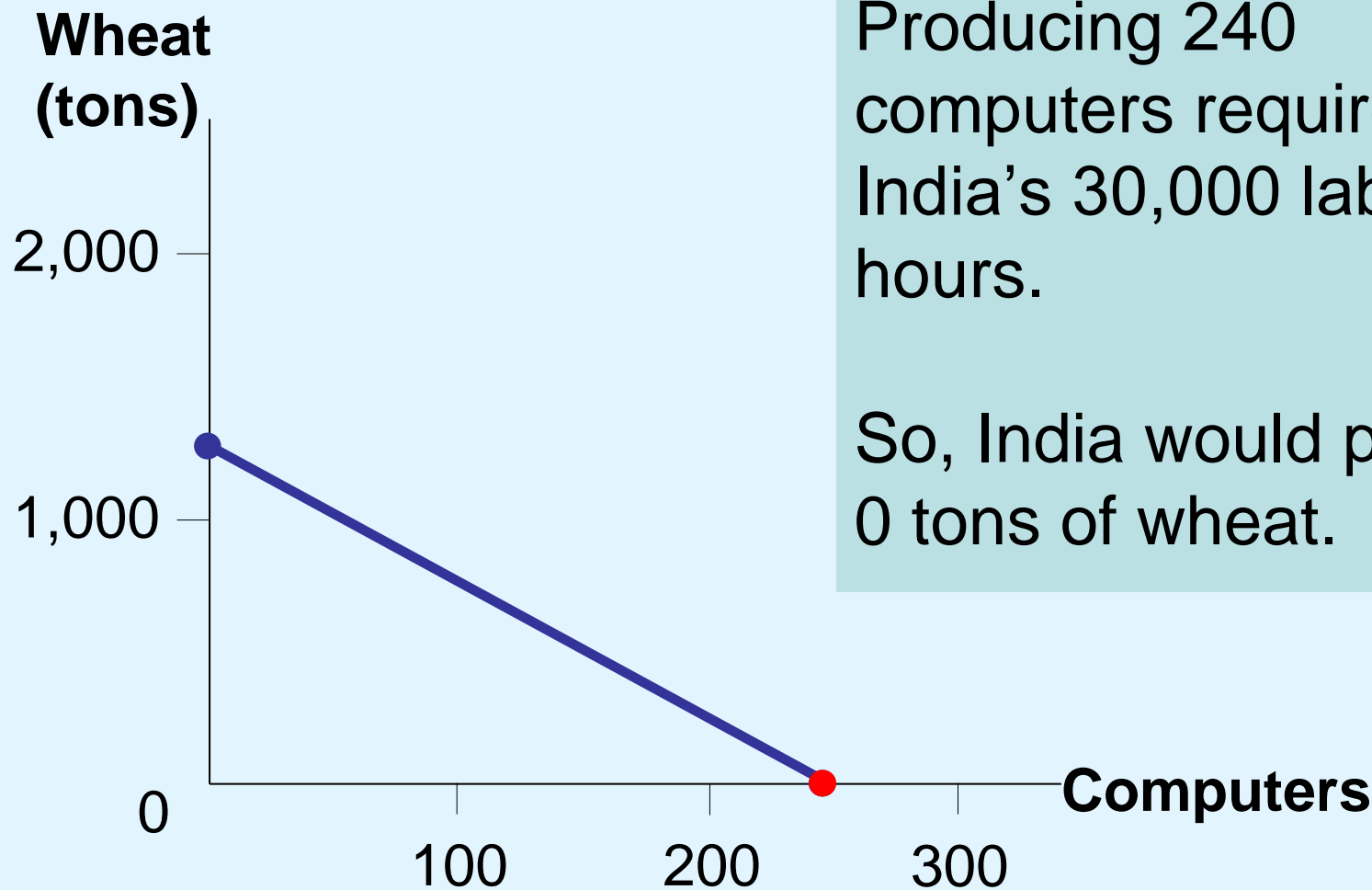
- How many tons of wheat would India be able to produce with its remaining labor?
- Draw this point on India's PPF.



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. India's Production With Trade**



Producing 240 computers requires all of India's 30,000 labor hours.

So, India would produce 0 tons of wheat.

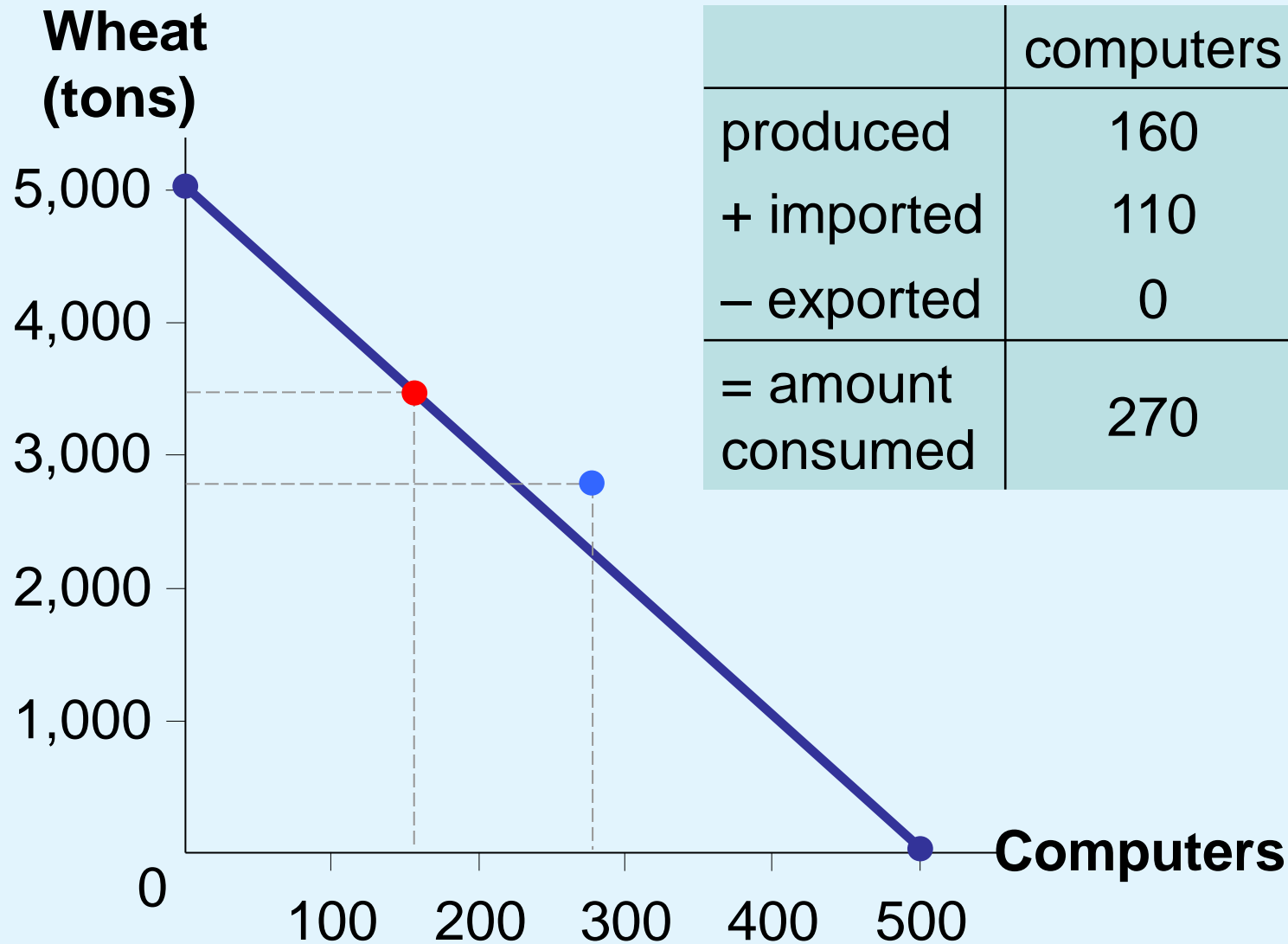


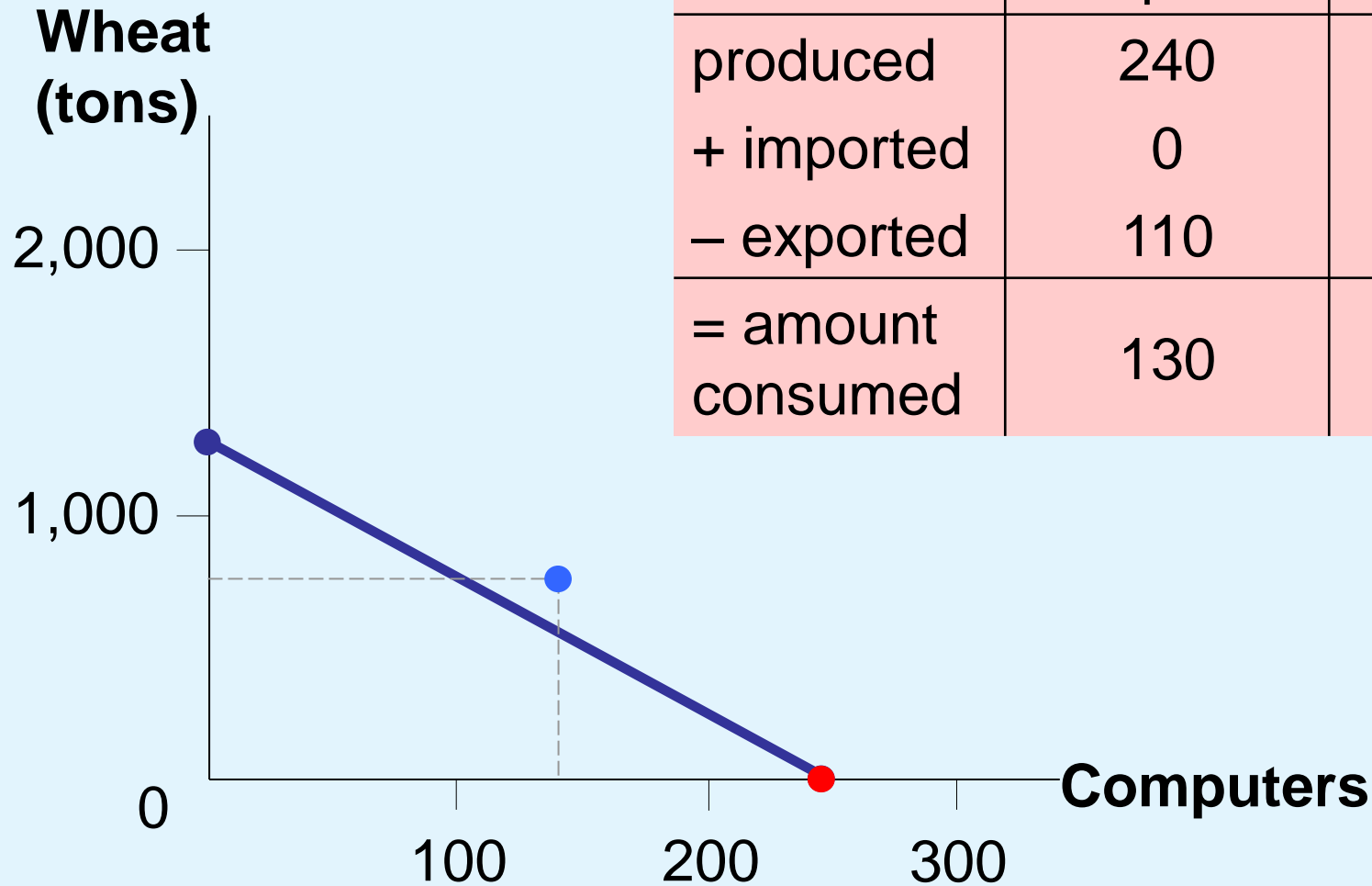
Exports and Imports

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

Suppose the U.S. exports 700 tons of wheat to India, and imports 110 computers from India. (India 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 India? Plot this combination on India's PPF.





	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
India			
	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 India
 - The U.S. has absolute advantage in computers
 - Producing one computer requires 125 labor hours in India, 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 India 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 India:
 - Producing one computer requires 125 labor hours, which instead could produce 5 tons of wheat

India 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

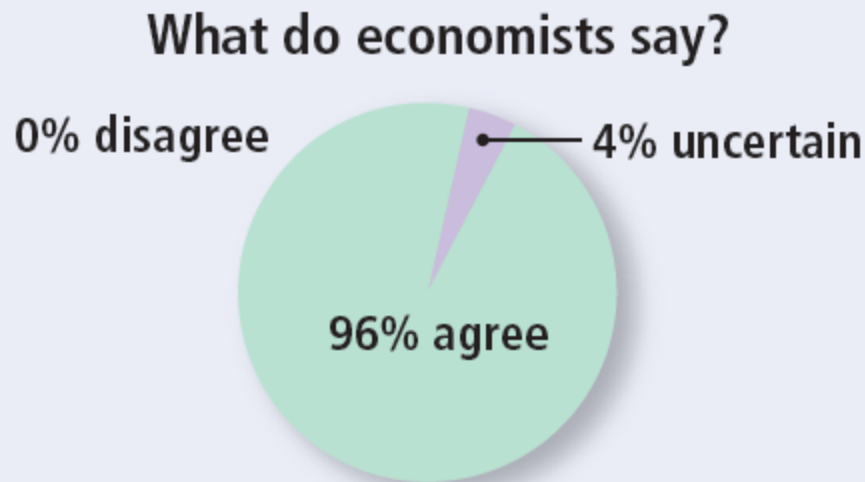
1. Which country has an absolute advantage in the production of coffee?
2. Which country has a comparative advantage in the production of wine?

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

ASK THE EXPERTS

Trade between China and the United States

“Some Americans 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