Econ 101:
Basic Economic Models: Gains from Trade

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Spring 2018

Outline

Topics:

- Basic models in Economics:
  - Production Possibilities Frontier (PPF)
  - Comparative Advantage
- Circular-flow diagram
- Positive economics and normative economics

Readings:

- Chapter 2 & 3 and appendix of Ch2

Keywords: "other things equal" assumption, PPF, Opportunity cost, Trade-off, Feasibility and Efficiency, Comparative/Absolute advantage

Models in Economics

A model is a simplified representation of a real situation that is used to better understand real-life situations

Models play a crucial role in economics

- They are used to study a real but _____
- They are used to simulate an economy on a computer

The "_____ (ceteris paribus)" assumption means that all other relevant factors remain unchanged

Production Possibilities Frontier

The production possibilities frontier (PPF) is a diagram that shows the combinations of two goods that are possible for a society to produce given the available factors of production and the available production technology

PPF illustrates _____ facing an economy that produces only two goods (Getting more of one good requires sacrificing some of the other)

Recall: The opportunity cost of an item is what must be given up to obtain that item

We can use the PPF model to answer questions like:

- How much can we produce?
- What will it cost us to change our mix of production?
- Does it make sense to import the good from somewhere else?

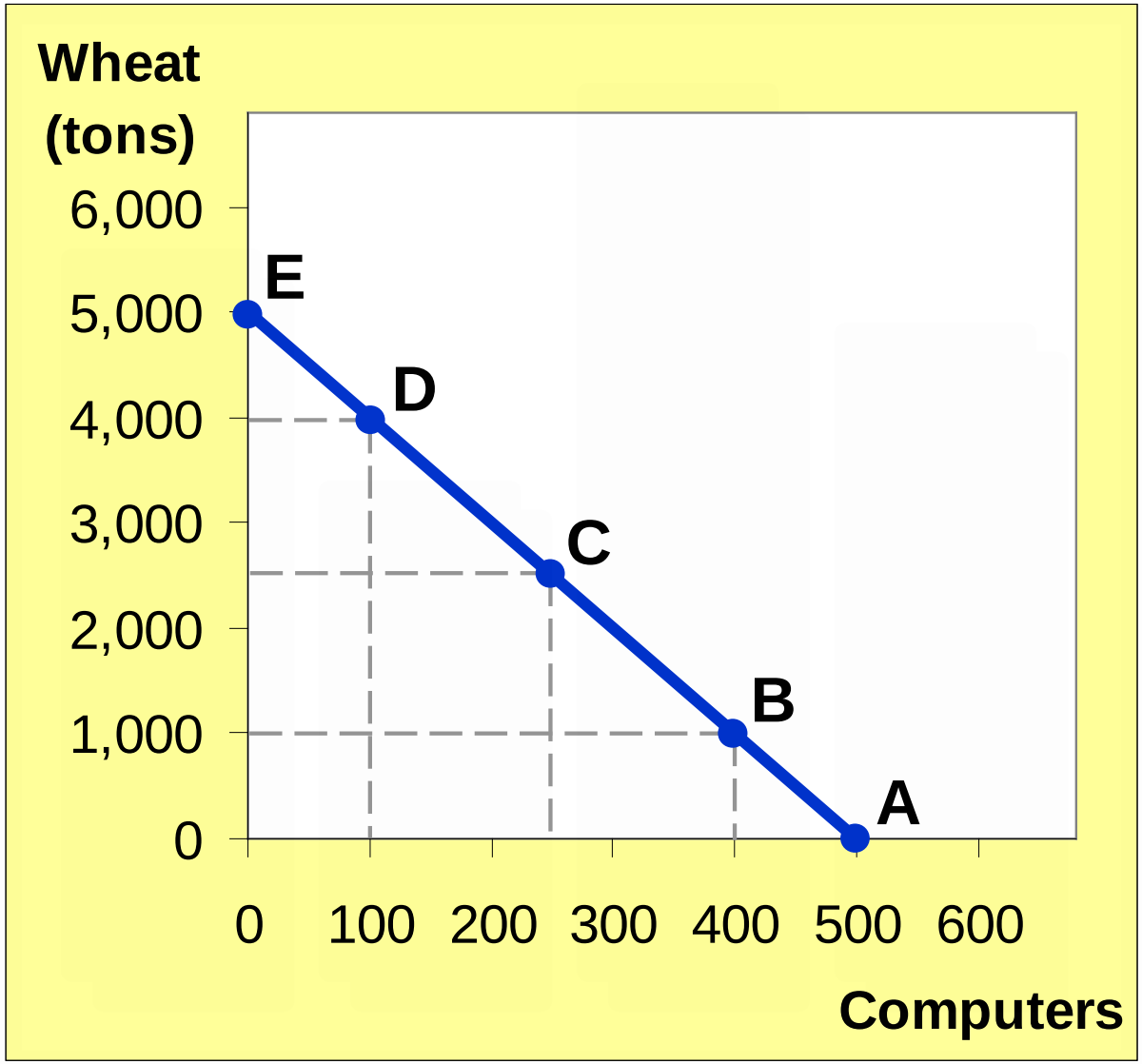
PPF *Example*: Two goods(computers & wheat) / One resource (labor)

- Economy has **50,000 labor hours** per month available for production
- 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

PPF *Example*

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



Feasibility and Efficiency and PPF

There is a distinction between points inside or on the production possibility frontier (the shaded area) and outside the frontier

The PPF has three main properties

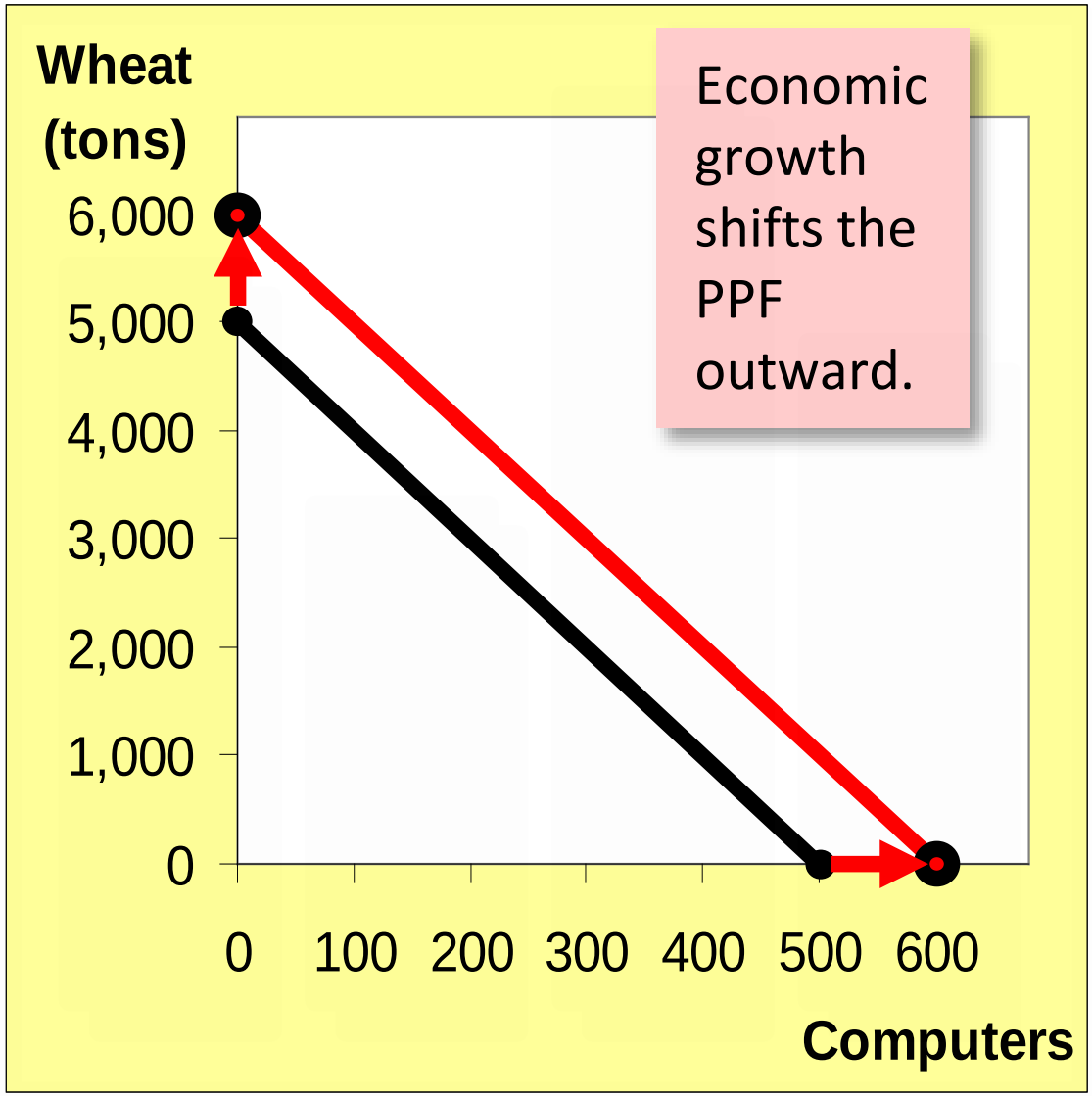
- Production possibility points on PPF are efficient and ___feasible_____
- Production possibility points inside PPF are ____ and feasible
- Production possibility points outside PPF are unattainable

Recall: Efficiency means that there are no missed opportunities in production—there is no way to produce more of one good without producing less of other goods ➔ All resources are _____!!

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.

The economy can now produce more of everything in the figure.



Opportunity Cost and Slope of PPF

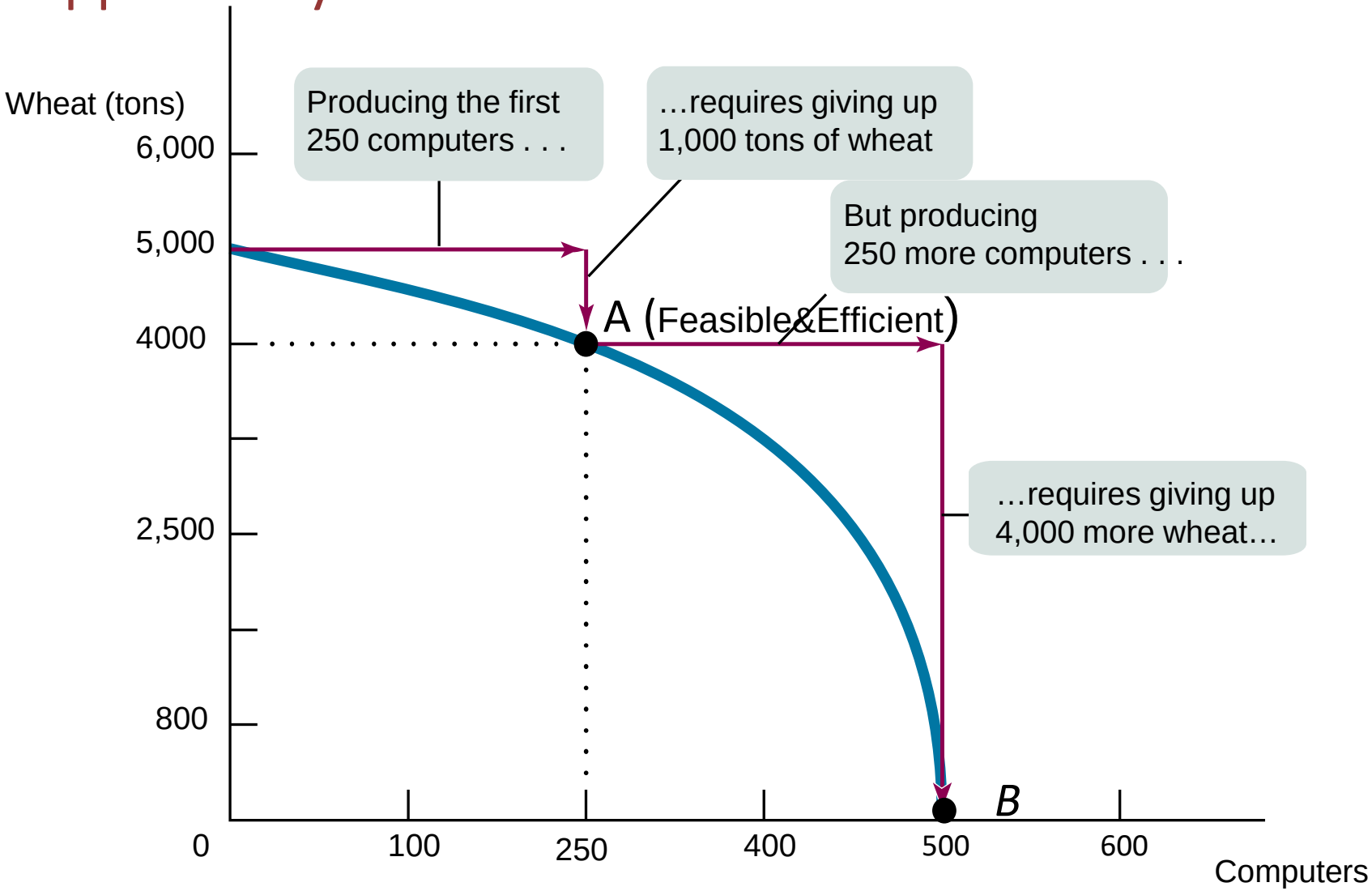
If the opportunity cost of an additional unit of a good doesn't change regardless of the output mix, the production possibility frontier is a straight line

➔ If the trade-off remains constant along the PPF, then there is a _____ opportunity cost and the PPF has a _____ slope

If opportunity costs are increasing the production possibility frontier is a bowed-out curve

➔ If the tradeoff increases along the PPF, then we say there is an _____ opportunity cost and the PPF has a bowed out shape

The Production Possibility Frontier with Increasing Opportunity Cost



Gains from Trade: Simple International Trade Example

Why do people/nations choose to be economically _____?

How can trade make everyone better off?

❖ **Simple International Trade Example**

Two countries: the U.S. and Japan

Two goods: computers and wheat

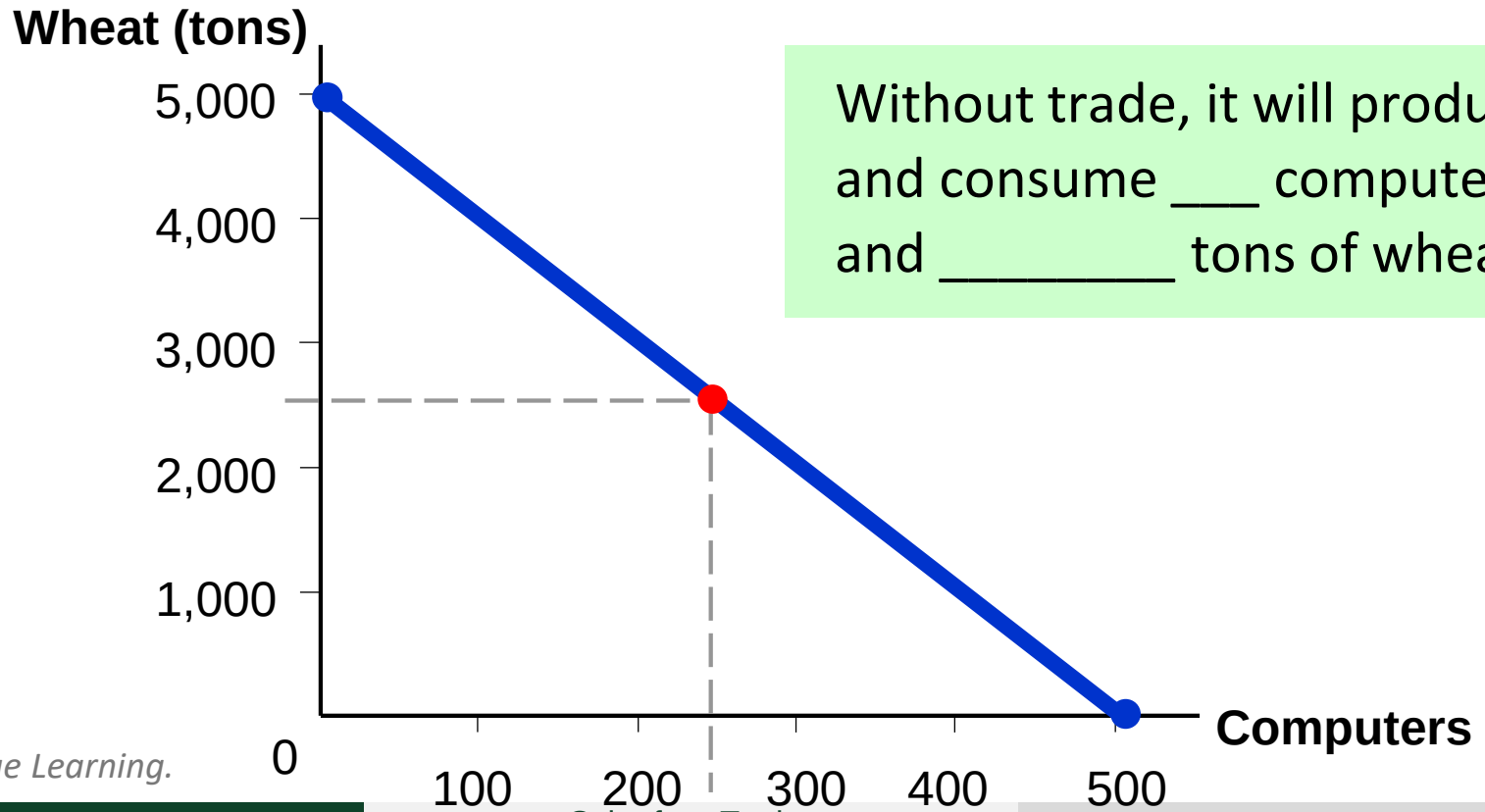
One resource: labor, measured in hours

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 (allowing _____/exports)

Production Possibilities in the U.S.

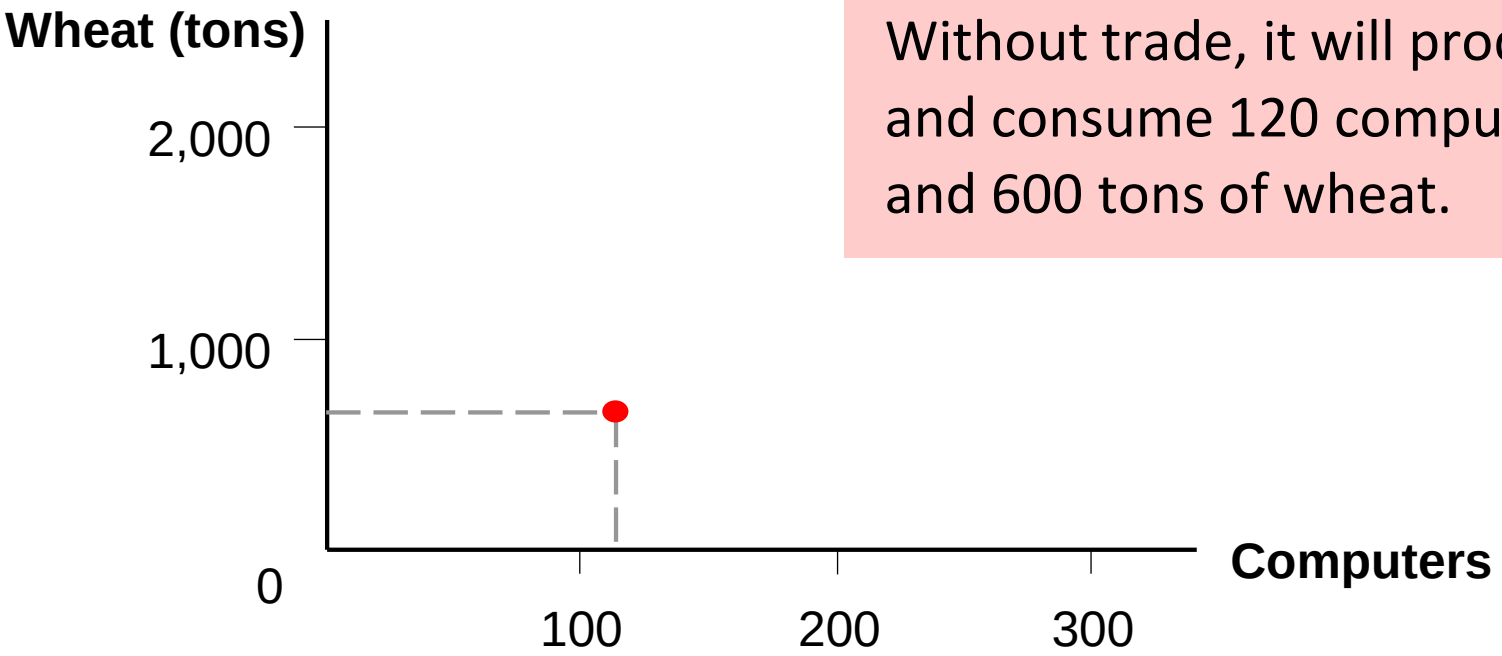
- The U.S. has 50,000 hours of labor available for production, per month
- Producing one computer requires 100 hours of labor
- Producing one ton of wheat requires 10 hours of labor
- Suppose the U.S. uses half its labor to produce each of the two goods



Without trade, it will produce and consume ___ computers and _____ tons of wheat.

Production Possibilities in 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
- Suppose Japan uses half its labor to produce each good



Without trade, it will produce and consume 120 computers and 600 tons of wheat.

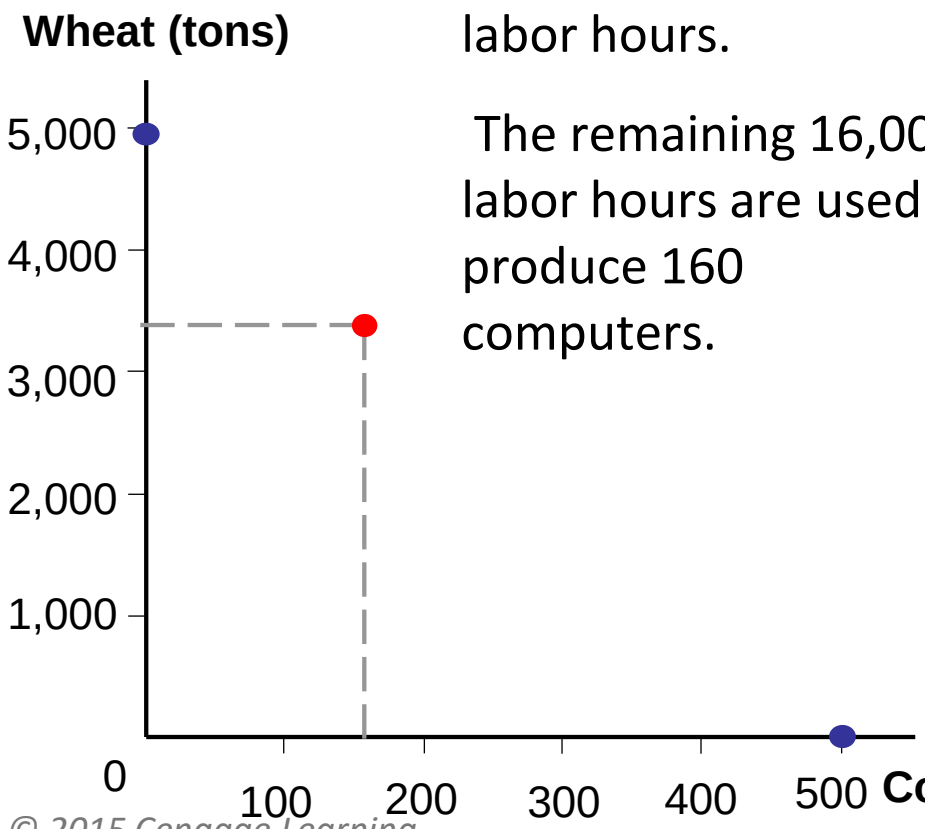
Production under trade

Assumption: *Suppose the U.S. produces 3400 tons of wheat and Japan produces 240 computers.*

U.S.

Producing 3400 tons of wheat requires 34,000 labor hours.

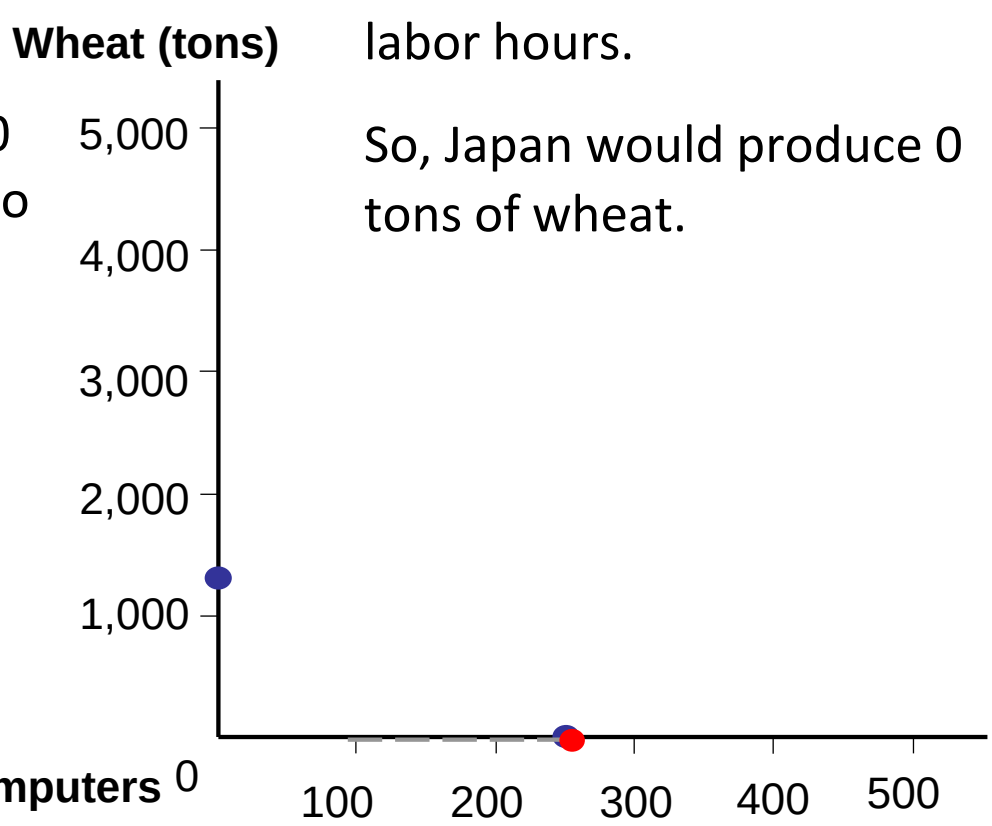
The remaining 16,000 labor hours are used to produce 160 computers.



Japan

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

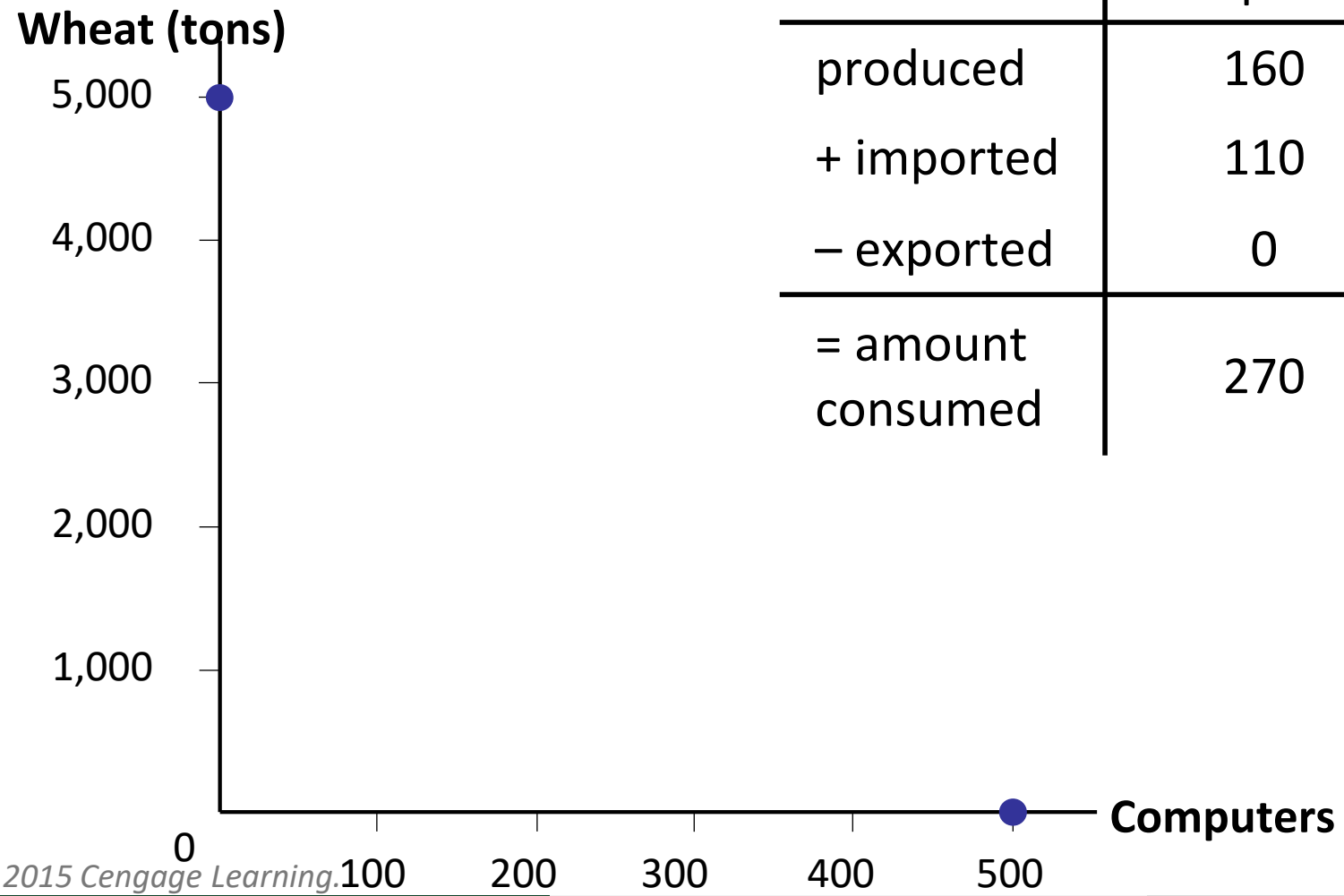
So, Japan would produce 0 tons of wheat.



U.S. Consumption With Trade

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

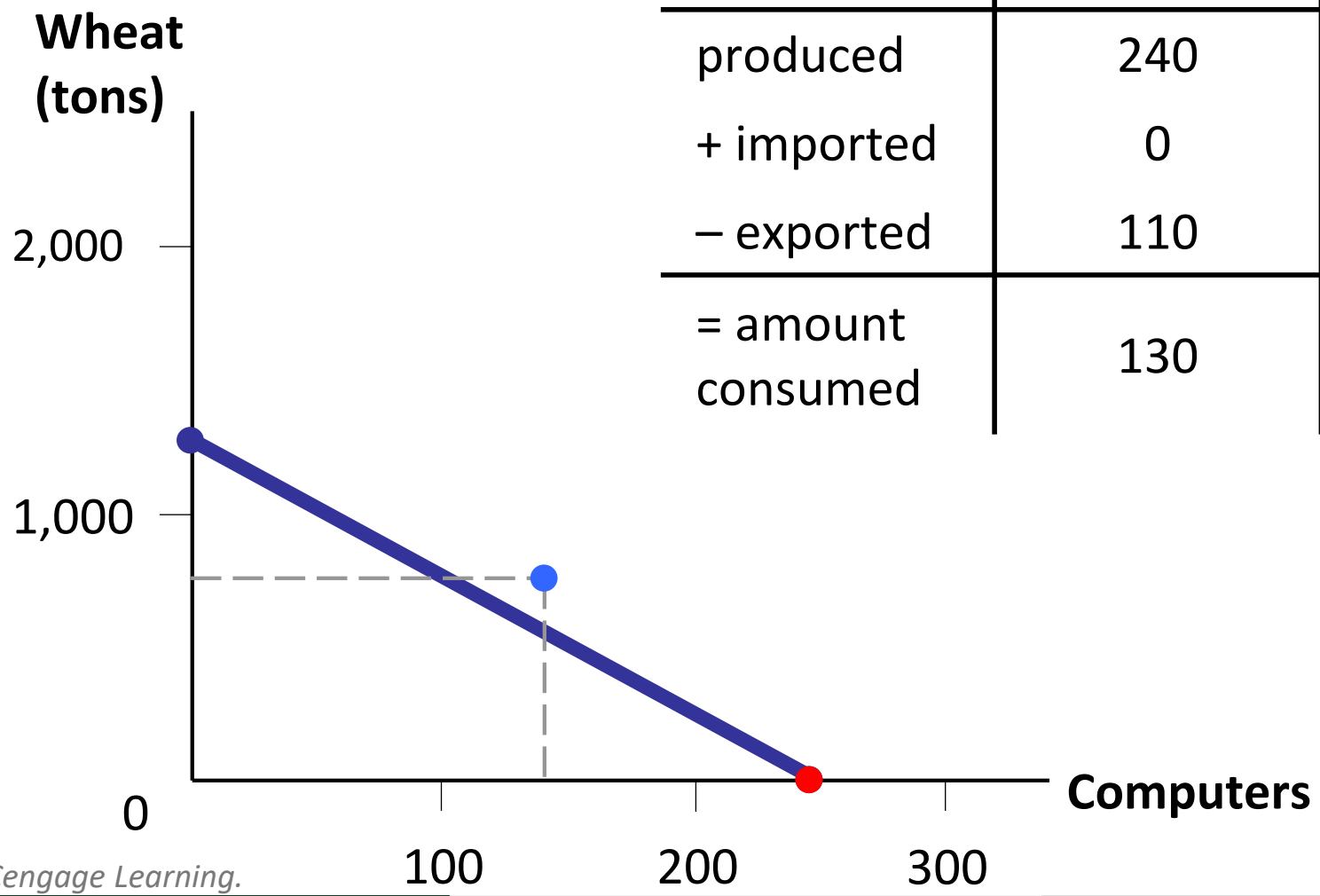
	computers	wheat
produced	160	3400
+ imported	110	0
– exported	0	700
= amount consumed	270	2700



Japan's Consumption With Trade

Assumption: *Suppose Japan imports 700 tons wheat and exports 110 computers.*

	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	
wheat	2500	2700	

Japan			
	consumption without trade	consumption with trade	gains from trade
computers	120	130	
wheat	600	700	

Comparative Advantage and Gains from Trade

Where Do These Gains Come From?

Theory of Comparative Advantage:
It makes sense to produce the things you're especially good at producing… and buy everything else from others

Origin of the Idea
David Ricardo (1772–1823)

Principle(Law) of Comparative Advantage:
An individual, firm, or country with
the _____ opportunity cost
of producing a particular good (service)
should _____ in that good (service)

Comparative vs. Absolute Advantage

An individual has a comparative advantage in producing a good or service if the opportunity cost of producing the good is _____ for that individual than for other people

e.g., In the example, the opportunity cost of a computer is 10 tons of wheat in the U.S. and 5 tons of wheat in Japan so Japan has a comparative advantage in computers.

An individual has an _____ in an activity if he or she can do it better than other people (can produce a good using fewer inputs than others)

e.g., In the example, the U.S. has an absolute advantage in both goods!

Having an absolute advantage is not the same thing as having a comparative advantage. You can have an absolute advantage in both goods and still benefit from trade

Unanswered Questions…

- We made a lot of assumptions about the quantities of each good that each country produces, trades, and consumes, and the price at which the countries trade wheat for computers
- In the real world, these quantities and prices would be determined by the preferences of consumers and the technology and resources in both countries

We will begin to study this in the next chapter

For now, though, our goal was merely to see how ***trade can make everyone better off***

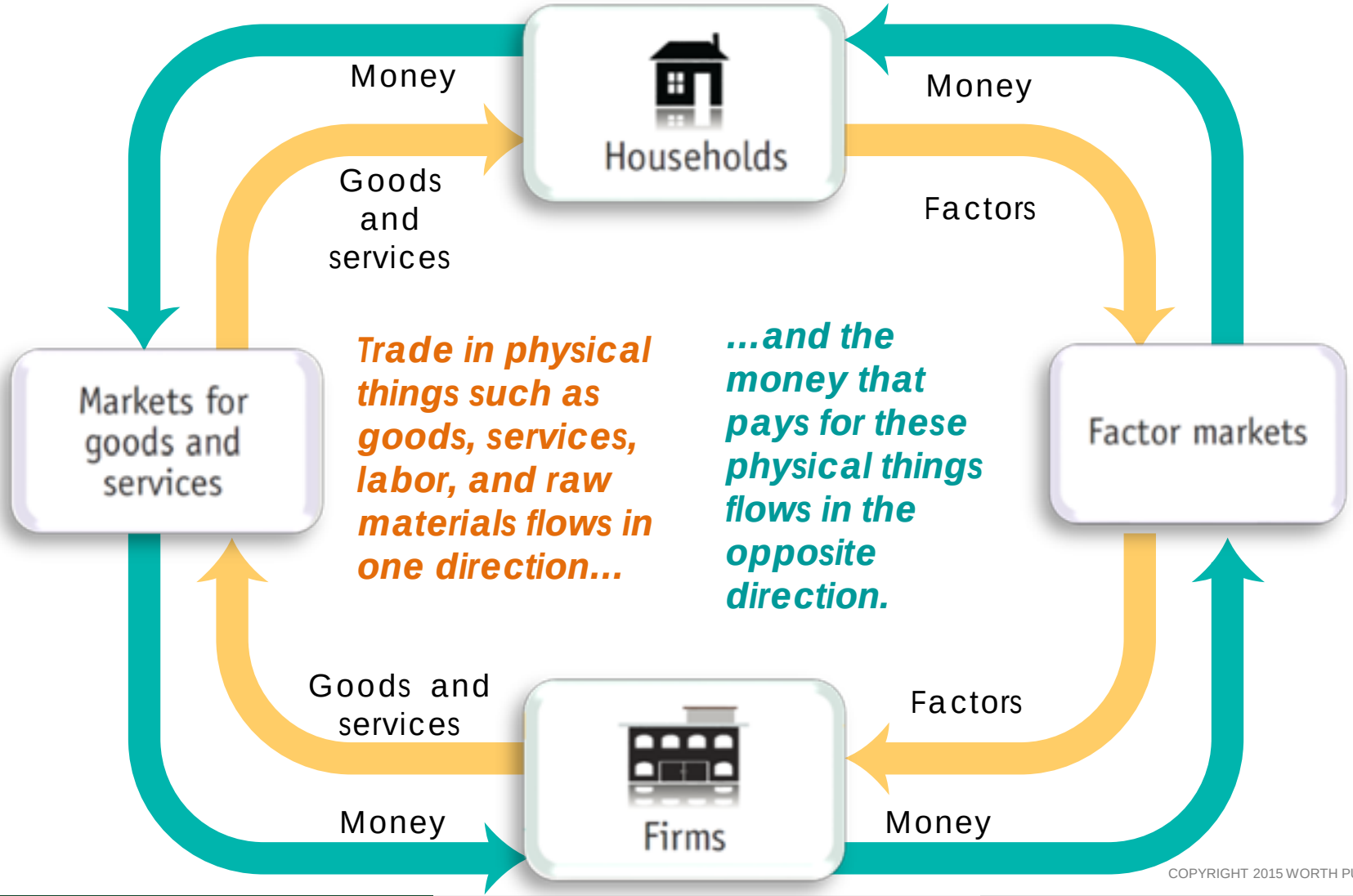
Transactions: The Circular-Flow Diagram

Trade takes the form of barter when people directly exchange goods or services they have for goods or services they want

The circular-flow diagram is a model that represents the transactions in an economy by flows around a circle

- Households buy goods and services from firms
- Firms buy factors of production from households
- _____ Flow represents the flow of goods and services
- Outer Flow represents the flow of _____

Production and trade in an economy can be represented by the circular-flow diagram:



Microeconomics and Macroeconomics

Microeconomics is the study of _____, specific markets, and industries

Examples of typical microeconomic questions:

- decisions on class attendance and part-time employment
- effects of ethanol subsidies on corn output and price

Macroeconomics is the study of the performance of the economy

_____

Examples of typical macroeconomic questions:

- effects of borrowing by federal government on interest rates
- impact of the U.S. dollar's depreciation on inflation

Using Models: Positive versus Normative Economics

Positive economics is the branch of economic analysis that describes the way the economy actually works. Statement of _____
"What is."

Normative economics makes prescriptions about the way the economy should work. Statement of opinion
"What ought to be."

A forecast is a simple prediction of the future.
Economists can determine correct answers for _____, but typically not for normative questions, which involve value judgments