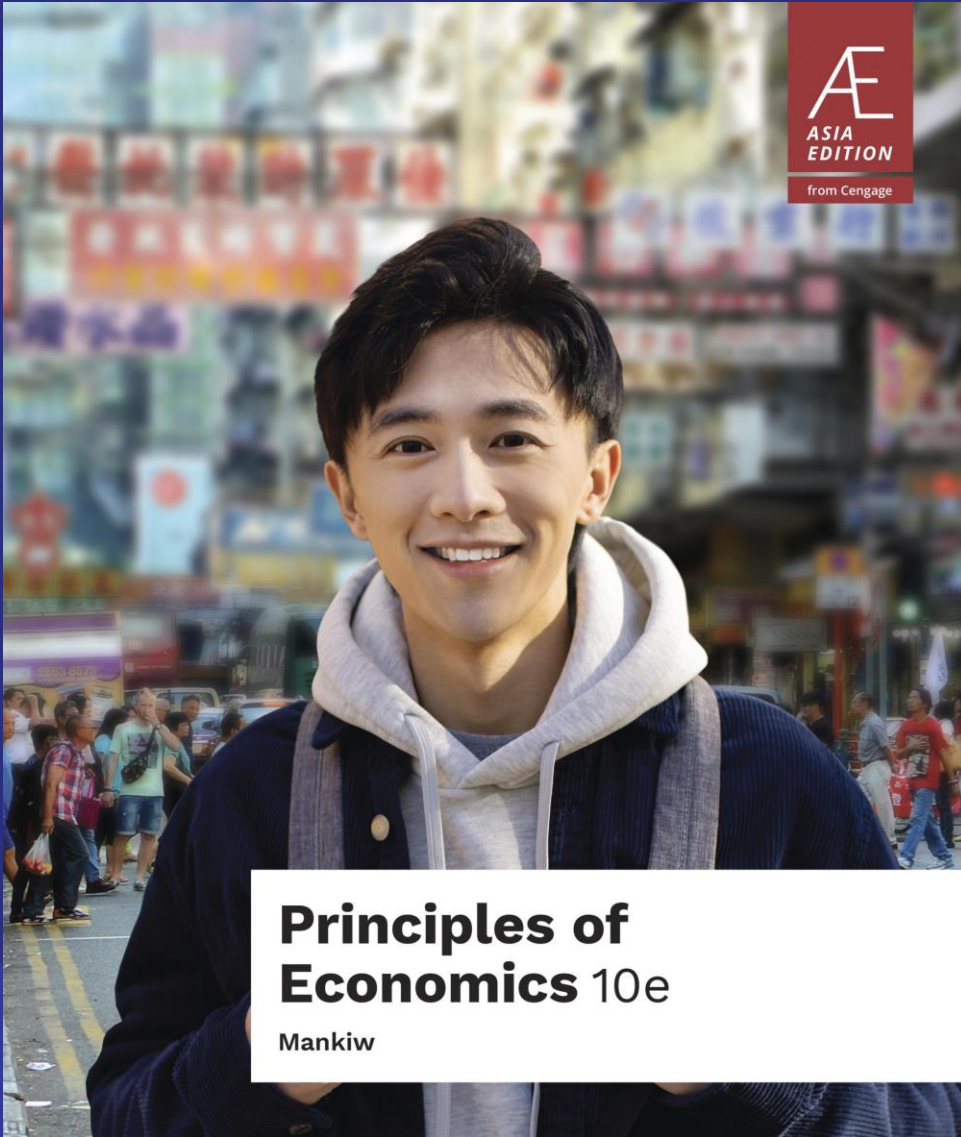


Icebreaker Activity: Economy and Economics

1. Break up into groups of two and introduce yourselves to each other.
2. What does the word “economy” mean? Do you know its origin and how its meaning has evolved over time? Do you know why its Chinese translation is “经济”?
3. What do you know about “economics”? Why do you want to learn it?



Principles of Economics, 10e

Chapter 1: Ten Principles of Economics

Chapter Objectives

By the end of this chapter, you should be able to:

- Explain how scarcity influences decisions.
- Explain how individuals evaluate opportunity costs to make decisions.
- Explain how marginal analysis influences decision making.
- Apply basic, economic principles of individual decision making that determine how an economy generally works.
- Explain how the terms of trade can lead to gains.
- Given a scenario, identify the distribution system being used.

1-1

How People Make Decisions

Ten Principles of Economics (1 of 3)

- **Scarcity***
 - Resources are scarce
 - Society has limited resources and, therefore, cannot produce all the goods and services people want
- **Economics***
 - The study of how society manages its scarce resources

*Words accompanied by an asterisk are key terms from the chapter.

Ten Principles of Economics (2 of 3)

- Economists examine how people make choices
 - How much they work, what they buy, how much they save, how they invest their savings
- Economists study how people interact with one another
 - How buyers and sellers together determine the price at which a good is sold and the quantity that is sold

Ten Principles of Economics (3 of 3)

- Economists analyze forces and trends that affect the overall economy
 - The growth in average income, the fraction of the population that cannot find work, and the rate at which prices are rising

Principle 1: People Face Trade-Offs (1 of 4)

- No free lunch
 - To get one thing you want, you usually must give up another thing you want
- Making decisions
 - Trading off one goal against another

Principle 1: People Face Trade-Offs (2 of 4)

- People
 - How to allocate time
 - How to spend income
 - For example
 - Working longer hours, less time for leisure
- Society
 - For example, protecting the environment
 - Resources could be used to produce consumer goods

Principle 1: People Face Trade-Offs (3 of 4)

- **Efficiency***

- Society is getting the most it can from its scarce resources
- The size of the economic pie

- **Equality***

- Distributing economic prosperity uniformly among the members of society
- How evenly the pie is divided into individual slices

*Words accompanied by an asterisk are key terms from the chapter.

Principle 1: People Face Trade-Offs (4 of 4)

- Trade-off
 - To achieve greater equality, redistribute income
 - But this reduces incentive to work and produce, shrinking size of economic pie

Principle 2: The Cost of Something Is What You Give Up to Get It

People face trade-offs and need to:

- Compare costs and benefits of alternatives
- Include opportunity costs

Opportunity cost*

- Whatever must be given up to obtain some item

*Words accompanied by an asterisk are key terms from the chapter.

Principle 3: Rational People Think at the Margin

- **Rational people***
 - Systematically and purposefully do the best they can to achieve their goals, given the available opportunities
 - Make decisions by evaluating costs and benefits of marginal changes
 - **Marginal change***: Small incremental adjustment to a plan of action
 - Take action if
 - Marginal benefits > Marginal costs

*Words accompanied by an asterisk are key terms from the chapter.

Active Learning 1: Thinking at the Margin

You pay \$8/month for access to Disney Plus, regardless of how many movies or TV shows you watch in a month. Should you watch one more movie (or episode)? Why?

Active Learning 1: Answers

Disney Plus

- Marginal benefit of watching one more movie
 - The enjoyment you get from watching the movie
- Marginal cost of watching one more movie
 - Monetary cost = \$0
 - Opportunity cost of time
- Decision
 - If the marginal benefit exceeds the marginal cost, watch the movie

Principle 4: People Respond to Incentives

- **Incentive***
 - Something that induces a person to act
 - Can have unintended consequences
 - For example, at a higher price buyers consume less, sellers produce more
- People respond to incentives
 - Because rational people make decisions by comparing costs and benefits

*Words accompanied by an asterisk are key terms from the chapter.

Active Learning 2: Applying the Principles

You are selling your black 1967 Chevy Impala. You have already spent \$2,000 on repairs. At the last minute, the transmission dies. You can pay \$1,400 to have it repaired or sell the car “as is.”

In each of the following scenarios, should you have the transmission repaired?

- A. Blue book value (what you could get for the car) is \$14,500 if transmission works, \$11,200 if it doesn't
- B. Blue book value is \$12,300 if transmission works, \$11,000 if it doesn't

Active Learning 2: Answers

A. Blue book value is \$14,500 if transmission works, \$11,200 if it doesn't

- Benefit of fixing transmission = \$3,300 ($\$14,500 - \$11,200$)
- Get the transmission fixed

B. Blue book value is \$12,300 if transmission works, \$11,000 if it doesn't

- Benefit of fixing the transmission = \$1,300 ($\$12,300 - \$11,000$)
- Do not pay \$1,400 to fix it

1-2

How People Interact

Principle 5: Trade Can Make Everyone Better Off

- People benefit from trade
 - People can buy a greater variety of goods and services at lower cost
- Countries benefit from trade
 - Allows countries to specialize in what they do best
 - Enjoy a greater variety of goods and services

Principle 6: Markets Are Usually a Good Way to Organize Economic Activity (1 of 4)

- Most countries that once had centrally planned economies have now shifted toward market economies
- In a **market economy***
 - The decisions of a central planner are replaced by those of millions of firms and households
 - Firms decide whom to hire and what to make
 - Households decide where to work and what to buy with their incomes

*Words accompanied by an asterisk are key terms from the chapter.

Principle 6: Markets Are Usually a Good Way to Organize Economic Activity (2 of 4)

- Firms and households interact in the marketplace, where prices and self-interest guide their decisions
 - Adam Smith's 1776 book, *An Inquiry into the Nature and Causes of the Wealth of Nations*: Firms and households in competitive markets act as if they are guided by an “invisible hand” that leads them to desirable outcomes

Principle 6: Markets Are Usually a Good Way to Organize Economic Activity (3 of 4)

- Prices are the instrument with which the invisible hand directs economic activity
- In a competitive market:
 - Sellers look at the price when deciding how much to supply
 - Buyers look at the price when deciding how much to demand
- As a result of their decisions, price reflects both the sellers' costs of production and the value of the good to the buyers

Principle 6: Markets Are Usually a Good Way to Organize Economic Activity (4 of 4)

- Important corollary to Smith's insight:
 - When a government prevents prices from adjusting to supply and demand, it impedes the invisible hand's ability to coordinate the decisions of the firms and households that make up an economy
- Helps to explain the adverse effect of most taxes on the allocation of resources

Principle 7: Governments Can Sometimes Improve Market Outcomes (1 of 3)

- Government is needed to
 - Enforce rules and institutions
 - Enforce **property rights***
 - Ability of an individual to own and exercise control over scarce resources
 - Promote efficiency
 - Promote equality

*Words accompanied by an asterisk are key terms from the chapter.

Principle 7: Governments Can Sometimes Improve Market Outcomes (2 of 3)

- **Market failure***
 - Situation in which a market left on its own does not allocate resources efficiently
 - Causes could include externality or market power
- **Externality***
 - Impact of one person's actions on the well-being of a bystander

*Words accompanied by an asterisk are key terms from the chapter.

Principle 7: Governments Can Sometimes Improve Market Outcomes (3 of 3)

- **Market power***
 - Ability of a single economic actor (or small group of actors) to have a substantial influence on market prices

*Words accompanied by an asterisk are key terms from the chapter.

Active Learning 3: The Government

- In each of the following situations, what is the government's role?
- Does the government's intervention improve the outcome?
 - Public schools for K-12 (kindergarten to 12th grade)
 - Workplace safety regulations
 - Public highways
 - Patent laws

1-3

How the Economy as a Whole Works

Principle 8: A Country's Standard of Living Depends on Its Ability to Produce Goods and Services (1 of 2)

- Large differences in living standards around the world
 - For example, 2019 average income is \$65,000 in the U.S., \$17,000 in China, and only \$5,000 in Nigeria
- Large changes in living standards over time
 - For example, U.S. standard of living today is eight times greater than that 100 years ago
- Almost all variation is attributable to differences in countries' productivity

Principle 8: A Country's Standard of Living Depends on Its Ability to Produce Goods and Services (2 of 2)

- **Productivity***
 - Quantity of goods and services produced from each unit of labor input
- Higher productivity
 - Higher standard of living
- Growth rate of nation's productivity
 - Determines growth rate of its average income

*Words accompanied by an asterisk are key terms from the chapter.

Principle 9: Prices Rise When the Government Prints Too Much Money (1 of 2)

- **Inflation***

- An increase in the overall level of prices in the economy
- High inflation
 - Imposes various costs on society
- Goal of economic policymakers
 - Keep inflation at a reasonable rate

*Words accompanied by an asterisk are key terms from the chapter.

Principle 9: Prices Rise When the Government Prints Too Much Money (2 of 2)

- In the long run
 - Inflation is almost always caused by excessive growth in the quantity of money, which causes the value of money to fall
 - The faster the government creates money, the greater the inflation rate

Principle 10: Society Faces a Short-Run Trade-Off between Inflation and Unemployment (1 of 2)

- Short-run effects of increasing money growth
 - Stimulates the overall level of spending and demand for goods and services
 - Higher demand causes firms to raise prices, hire more workers, and produce a larger quantity of goods and services
 - More hiring means lower unemployment

Principle 10: Society Faces a Short-Run Trade-Off between Inflation and Unemployment (2 of 2)

- Short-run trade-off between unemployment and inflation
 - Many economic policies push unemployment and inflation in opposite directions
 - Key role in analysis of business cycle
- **Business cycle***
 - Fluctuations in economic activity, such as employment and production

*Words accompanied by an asterisk are key terms from the chapter.

1-4

Conclusion

Conclusion

- In the coming chapters
 - We will develop specific insights about people, markets, and economies
 - We will refer to the Ten Principles of Economics introduced in this chapter

Ten Principles of Economics

How People Make Decisions	How People Interact	How the Economy as a Whole Works
1. People face trade-offs.	5. Trade can make everyone better off.	8. A country's standard of living depends on its ability to produce goods and services.
2. The cost of something is what you give up to get it.	6. Markets are usually a good way to organize economic activity.	9. Prices rise when the government prints too much money.
3. Rational people think at the margin.	7. Governments can sometimes improve market outcomes.	10. Society faces a short-run trade-off between inflation and unemployment.
4. People respond to incentives.		

Think-Pair-Share Activity

Your university decides to reduce the price of a parking permit on campus from \$250 per semester to \$10 per semester.

- A. The number of students desiring to park their cars on campus will _____.
- B. The amount of time it would take to find a parking place will _____.
- C. Will the lower price of a parking permit necessarily lower the true cost of parking? (Hint: opportunity cost)
- D. Would the opportunity cost of parking be the same for students with no outside employment and students with jobs earning \$15 per hour?

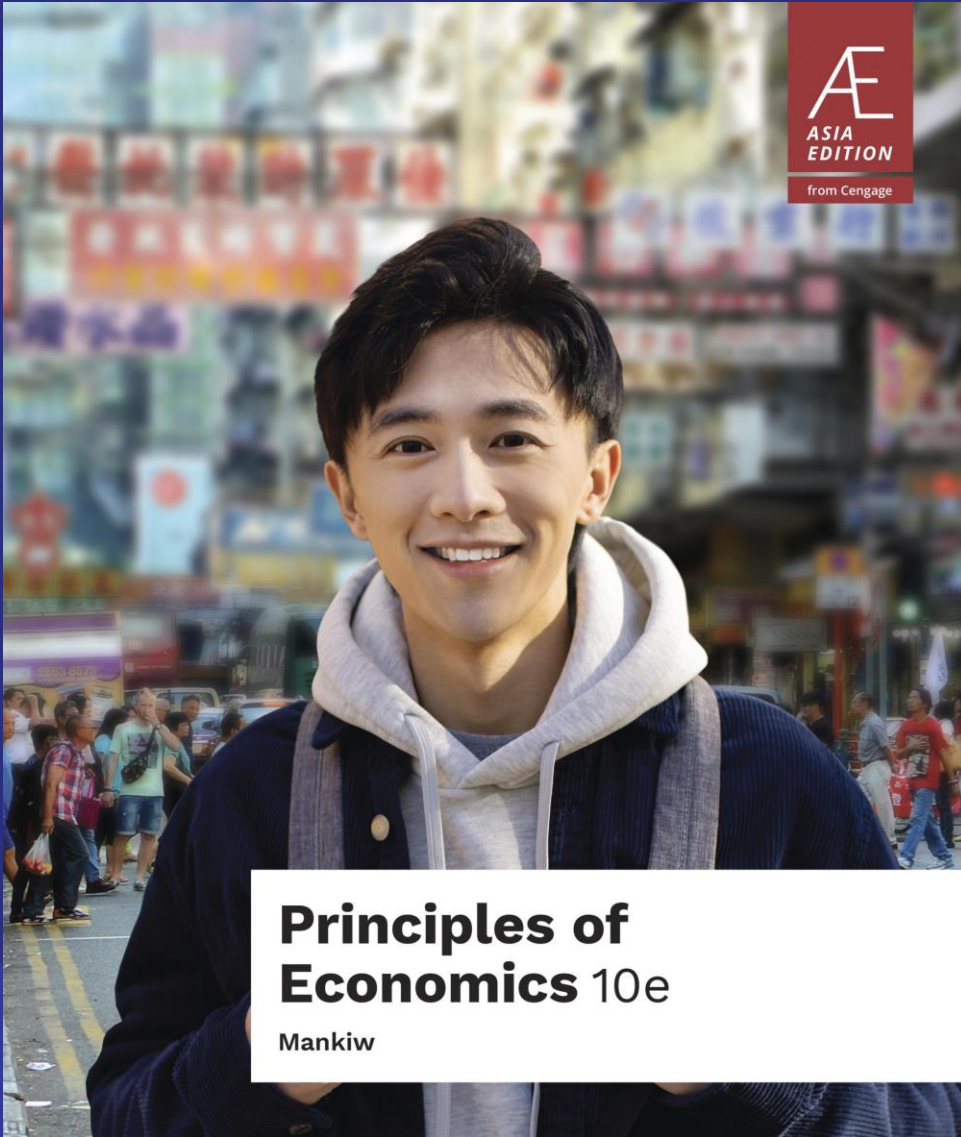
Self-Assessment

- What is economics all about?
- Which of the *Ten Principles of Economics* relates to decision making for your daily life?

Summary

Click the link to review the objectives for this presentation.

[Link to Objectives](#)



Principles of Economics, 10e

Chapter 2: Thinking Like an Economist

Chapter Objectives (1 of 2)

By the end of this chapter, you should be able to:

- Explain how the circular flow diagram explains the economy.
- Describe how the production possibilities frontier explains aggregate production.
- Determine if an output level is exhibiting allocative or productive efficiency.
- Describe opportunity cost in the context of the production possibilities frontier.
- Describe the factors that cause the production possibilities frontier to shift.

Chapter Objectives (2 of 2)

- Contrast macroeconomic concepts versus microeconomic concepts.
- Contrast when an economist acts as a policy adviser and when an economist acts as a scientist.

2-1

The Economist as Scientist

Economics Is a Science

- Economists are scientists
 - Devise theories
 - Collect data
 - Analyze the data to verify or refute their theories
- Essence of science is the scientific method

The Scientific Method: Observation, Theory, and More Observation

- Scientific method
 - Development and testing of theories about how the world works
- Conducting experiments in economics is often impractical
- Substitute for experiments by paying close attention to the natural experiments offered by history

The Role of Assumptions

- Assumptions
 - Can simplify the complex world and make it easier to understand
 - The art in scientific thinking is deciding which assumptions to make
- Economists use different assumptions
 - For different questions
 - For different time horizons

Economic Models

- Economists use models
- Economic models
 - Are diagrams and equations
 - Omit many details
 - Are built with assumptions
 - Simplify reality
 - Are subject to revision

Our First Model: The Circular-Flow Diagram (1 of 3)

- **Circular-flow diagram***
 - Visual model of the economy
 - Shows how dollars flow through markets among households and firms

*Words accompanied by an asterisk are key terms from the chapter.

Our First Model: The Circular-Flow Diagram (2 of 3)

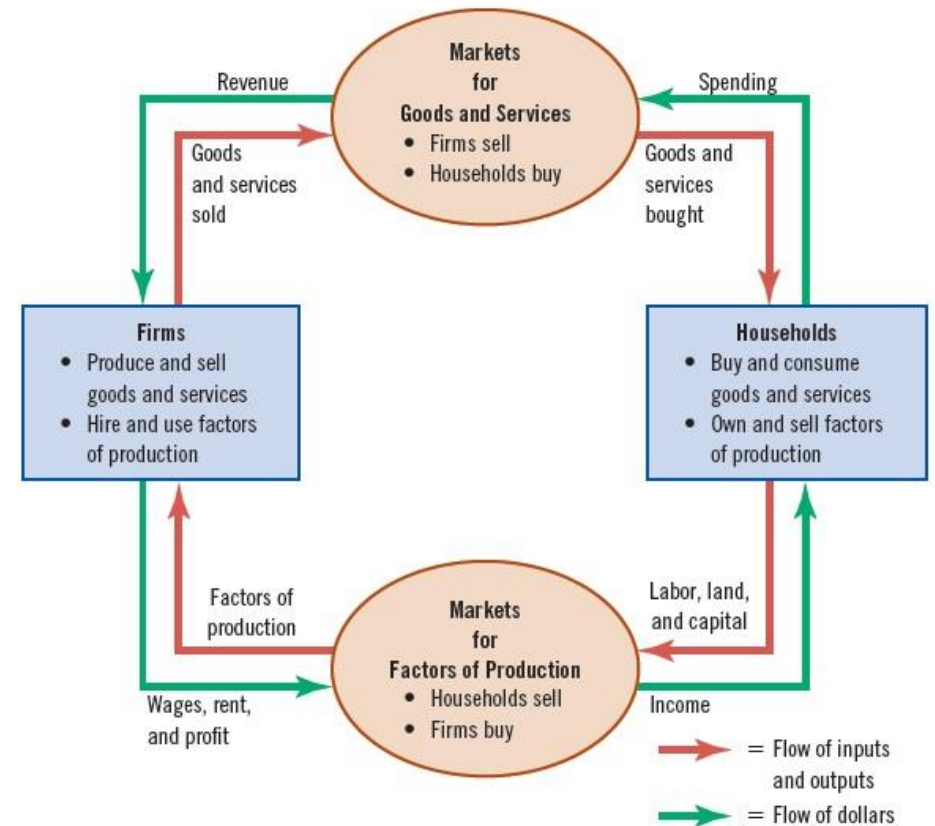
- Firms
 - Produce goods and services
 - Use factors of production (inputs)
- Households
 - Own factors of production
 - Consume goods and services

Our First Model: The Circular-Flow Diagram (3 of 3)

- Markets for goods and services
 - Households are buyers
 - Firms are sellers
- Markets for factors of production
 - Households are sellers
 - Firms are buyers

Figure 1 The Circular Flow

- This diagram is a schematic representation of the organization of the economy.
- Decisions are made by households and firms.
- Households and firms interact in the markets for goods and services (where households are buyers and firms are sellers) and in the markets for the factors of production (where firms are buyers and households are sellers).
- The outer set of arrows shows the flow of dollars, and the inner set of arrows shows the corresponding flow of inputs and outputs.



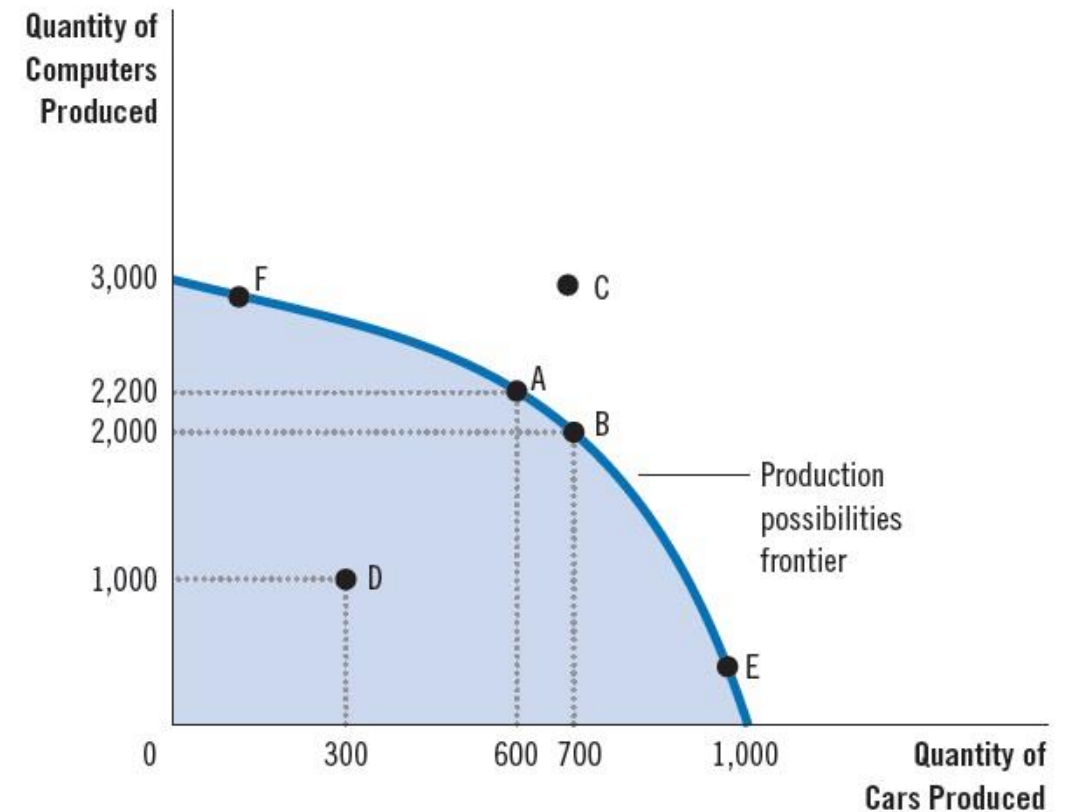
Our Second Model: The Production Possibilities Frontier

- The **production possibilities frontier*** (PPF) is a graph that shows the various combinations of outputs that the economy can possibly produce with the available
 - Factors of production
 - Production technology

*Words accompanied by an asterisk are key terms from the chapter.

Figure 2 The Production Possibilities Frontier

- The production possibilities frontier shows the combinations of output—in this case, cars and computers—the economy can produce.
- Any point on or beneath the curve is a possible output combination in this economy.
- 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.



Efficient Outcomes

- Points on the PPF are efficient
 - The economy is getting all it can from the scarce resources it has available
- Trade-off that society faces at an efficient point
 - The only way to produce more of one good is to produce less of the other
 - For example, moving from point A to point B, society produces 100 more cars at the expense of producing 200 fewer computers

Opportunity Costs

- Opportunity cost of producing one good is to give up producing units of the other good
- Point A
 - Opportunity cost of 100 cars is 200 computers
 - Opportunity cost of each car is 2 computers
 - Equals slope of PPF

Inefficient Outcomes

- Points inside PPF are inefficient
 - At point D economy is producing less than it could from the resources it has available
 - If source of the inefficiency is eliminated, economy can increase its production of both goods

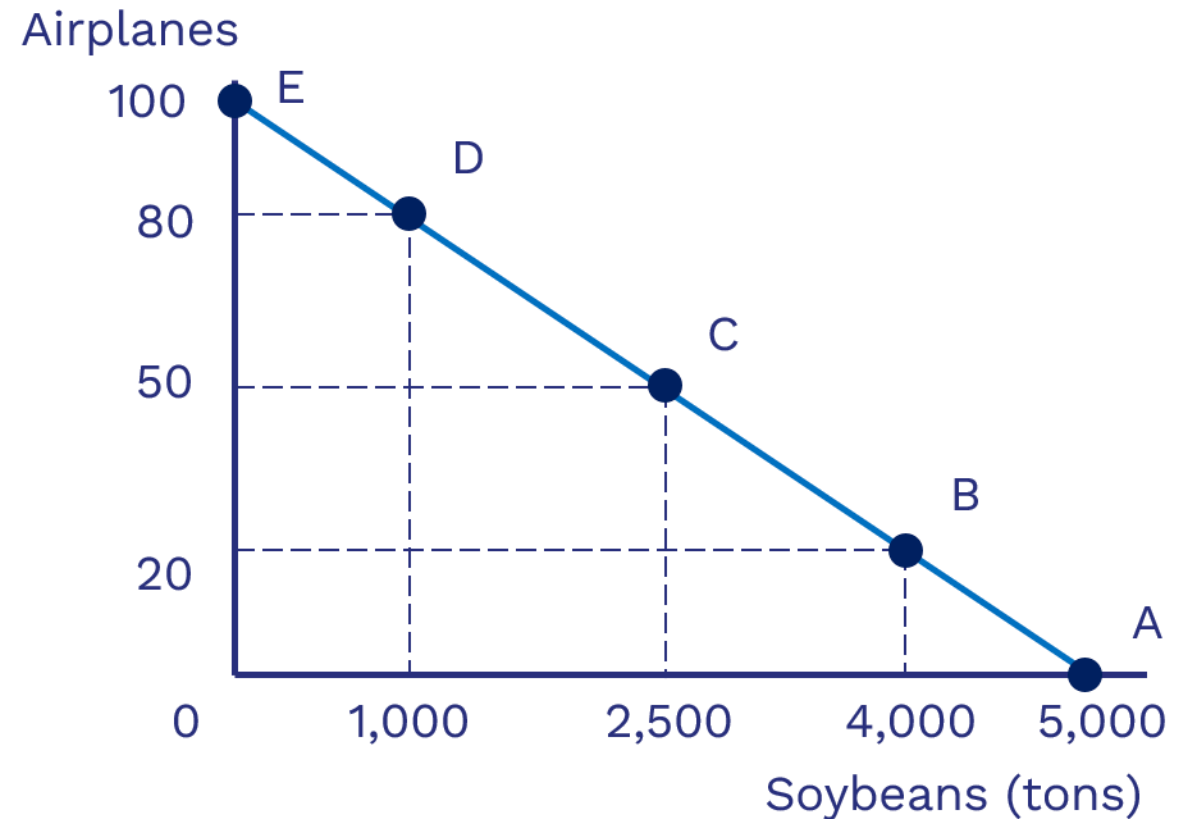
Active Learning 1: Points off the PPF

- Graph the PPF
- Would it be possible for the economy to produce the following combinations of the two goods?
 - Point F: 80 airplanes and 4,000 tons of soybeans
 - Point G: 30 airplanes and 2,500 tons of soybeans

	Airplanes	Tons of Soybeans
A	0	5,000
B	20	4,000
C	50	2,500
D	80	1,000
E	100	0

Active Learning 1: Answers

- Point F (80 airplanes, 4,000 tons of soybeans)
 - Not possible
- Point G (30 airplanes, 2,500 tons of soybeans)
 - Possible but not efficient (can produce more)



Shape of the PPF (1 of 3)

- The opportunity cost is not constant and depends on how many cars and computers the economy is producing
- Reflected in the shape of the production possibilities frontier

Shape of the PPF (2 of 3)

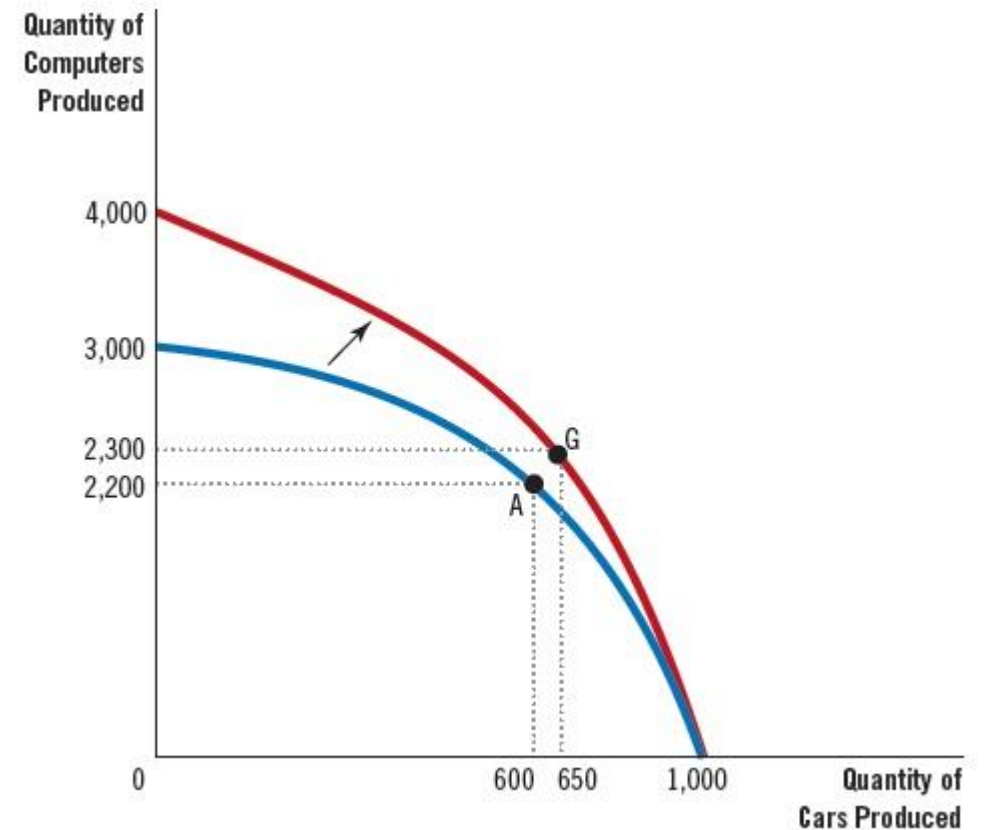
- Bowed outward production possibilities frontier
 - Opportunity cost of a car is highest
 - When the economy is producing many cars and fewer computers
 - Opportunity cost of a car is lower
 - When the economy is producing fewer cars and many computers
- Resource specialization

Shape of the PPF (3 of 3)

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

Figure 3 A 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, the production of both cars and computers increases.



Microeconomics and Macroeconomics

- **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, and economic growth

*Words accompanied by an asterisk are key terms from the chapter.

2-2

The Economist as Policy Adviser

Scientists or Policy Advisers?

- Economists are scientists
 - Explain the causes of economic events
- Economists are policy advisers
 - Recommend policies to improve economic outcomes

Positive versus Normative Analysis (1 of 2)

- Two people are discussing minimum-wage laws.
 - Prisha: Minimum-wage laws cause unemployment.
 - Noah: The government should raise the minimum wage.
- Prisha is speaking like a scientist: She is describing how the world works.
- Noah is speaking like a policy adviser: He is talking about how he would like to change the world.

Positive versus Normative Analysis (2 of 2)

- **Positive statements*** are descriptive
 - Make a claim about how the world is
 - Can be confirmed or refuted positive by examining evidence
- **Normative statements*** are prescriptive
 - Make a claim about how the world ought to be
 - Evaluation involves values as well as facts

*Words accompanied by an asterisk are key terms from the chapter.

Why Economists' Advice Is Often Not Followed

- The president receives advice from
 - Economic advisers
 - Communication advisers
 - Press advisers
 - Legislative affairs advisers
 - Political advisers
- The president makes the decision

2-3

Why Economists Disagree

Differences in Scientific Judgments

- Economists may disagree about the validity of alternative positive theories of how the world works.
 - Different hunches about the validity of alternative theories
 - Different judgments about the size of the parameters that measure how economic variables are related
- For example, economists debate whether the government should tax a household's income or its consumption (spending)
 - Different positive views about how much saving responds to tax incentives leads to different normative views about the tax system

Differences in Values

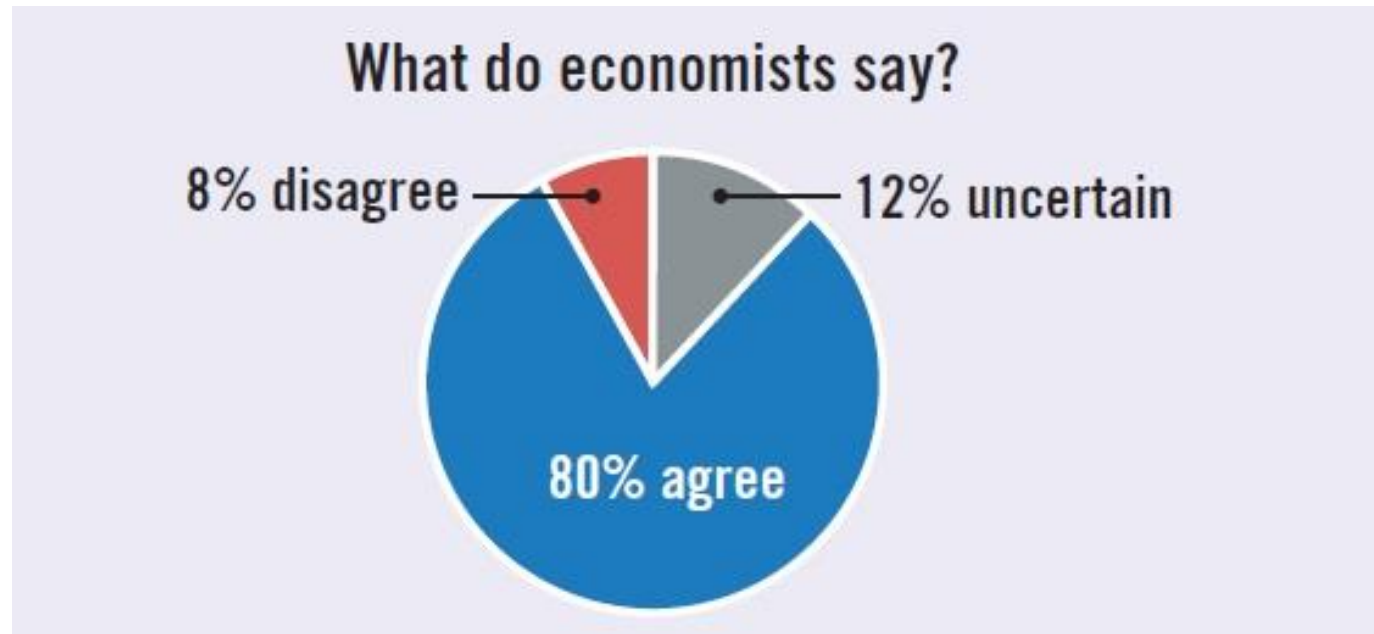
- Economists sometimes disagree about public policy and give conflicting advice because of different values or political philosophies
 - May have different values and, therefore, different normative views about what policy should try to accomplish
- Policies cannot be judged on scientific grounds alone.

Perception versus Reality

- Economists agree with one another more often than is sometimes understood
- Why do policies persist if the experts are united in their opposition?
 - May be that the realities of the political process stand as immovable obstacles
 - May be that economists have not yet convinced enough of the public that these policies are undesirable

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.”



Source: IGM Economic Experts Panel, April 16, 2012.

2-4

Let's Get Going

Some Advice

- As you proceed through this book, you will be asked to draw on many intellectual skills
- With practice, you will become more and more accustomed to thinking like an economist

Think-Pair-Share Activity

You are watching two economists debating in a live stream the pros and cons of free trade, one in support of it and one opposed.

Your roommate says, “Those economists have no idea what’s going on. They can’t agree on anything. One says free trade makes us rich. The other says it will drive us into poverty. If the experts don’t know, how is the average person ever going to know whether free trade is best?”

- A. Can you give your roommate any insight into why economists might disagree on this issue?
- B. Suppose you discover that 93 percent of economists believe that free trade is generally best. Could you now give a more precise answer as to why economists might disagree on this issue?

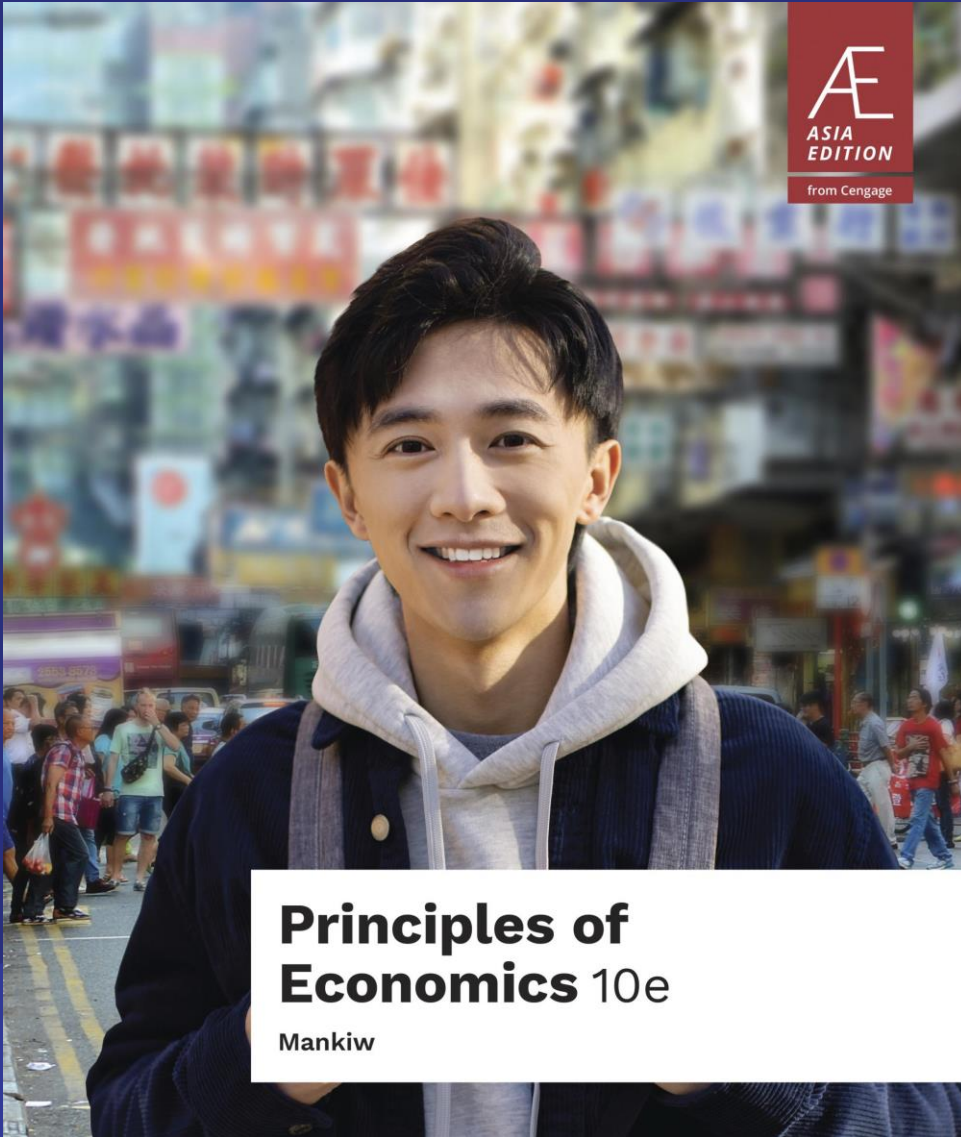
Self-Assessment

- Suppose you are trying to decide whether to buy a new laptop. How would you think like an economist when making that decision?

Summary

Click the link to review the objectives for this presentation.

[Link to Objectives](#)



Principles of Economics, 10e

Chapter 3: Interdependence and the Gains from Trade

Chapter Objectives (1 of 2)

By the end of this chapter, you should be able to:

- Explain how the terms of trade can lead to gains.
- Describe opportunity cost in the context of the production possibilities frontier.
- Describe how the production possibilities frontier explains aggregate production.
- Determine if an output level is exhibiting allocative or productive efficiency.
- Explain how comparative advantage determines trade.
- Describe absolute advantage in the context of trade.

Chapter Objectives (2 of 2)

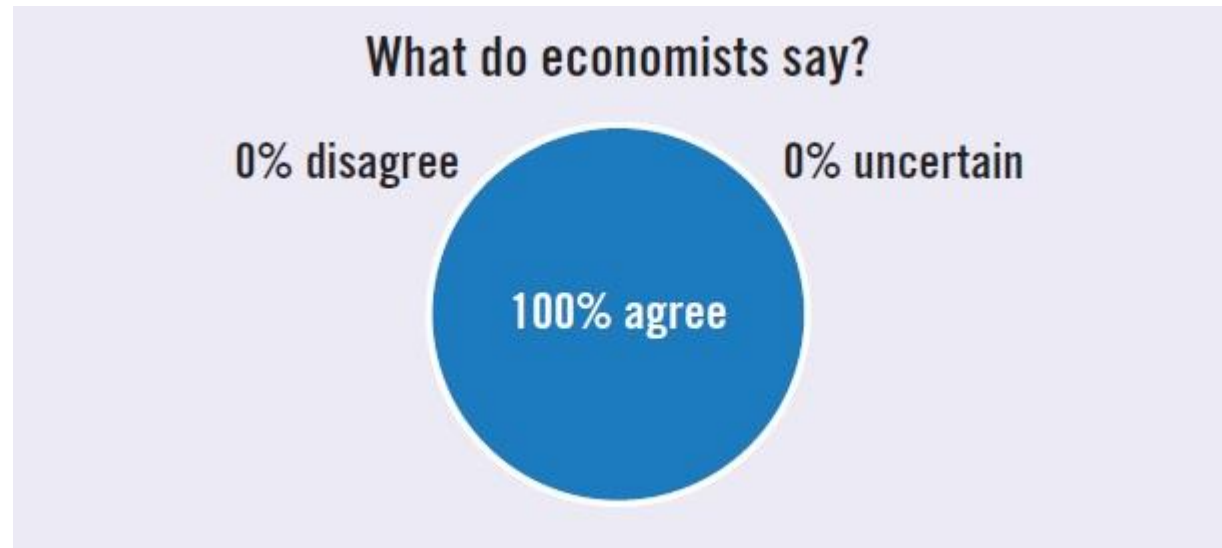
- Describe the factors that cause the production possibilities frontier to shift.
- Determine whether a country will be an importer or exporter of a good if the country opens up to international trade.

3-1

A Parable for the Modern Economy

Ask the Experts: Trade between China and the United States - A

“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.”



Source: IGM Economic Experts Panel, June 19, 2012.

Economic Interdependence

- “Trade can make everyone better off”
 - One of the Ten Principles of Economics
- We now examine this principle more closely
 - What exactly do people gain when they trade with one another?
 - Why do people become interdependent?

A Simple Economy

- Only two goods
 - Meat
 - Potatoes
- Only two people
 - A cattle rancher named Ruby
 - A potato farmer named Frank
- Both would like to eat both meat and potatoes

Production Possibilities

- If Ruby produces only meat and Frank produces only potatoes
 - Both gain from trade
- If both Ruby and Frank produce both meat and potatoes
 - Both gain from specialization and trade
- Production possibilities frontier
 - Various mixes of output that an economy can produce

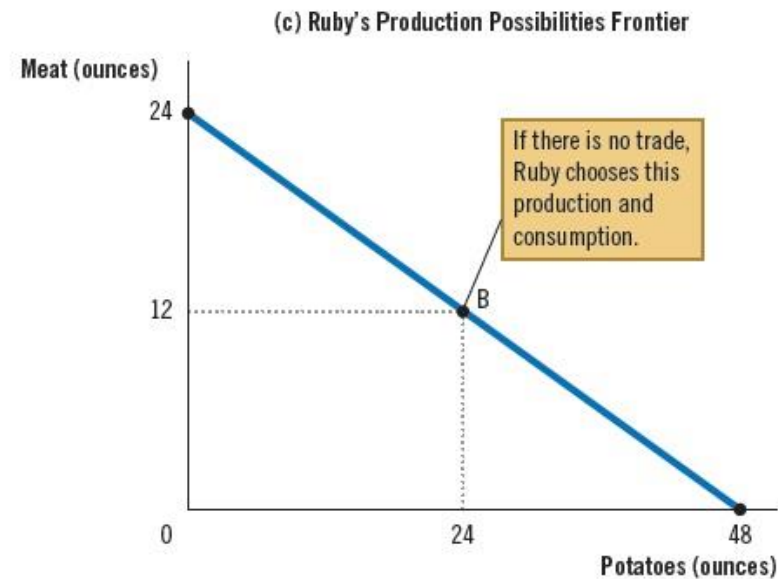
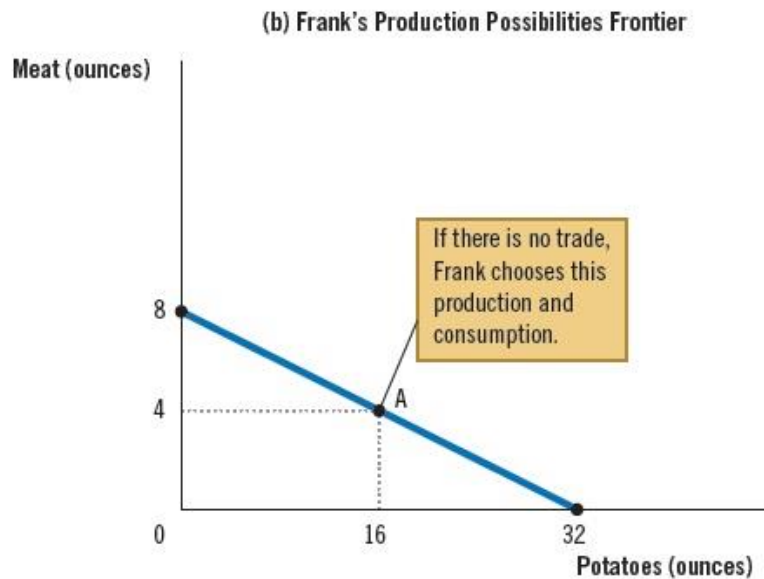
Figure 1 The Production Possibilities Frontier (1 of 2)

Panel (a) shows the production opportunities available to Frank the farmer and Ruby the rancher.

(a) Production Opportunities				
	Minutes Needed to Make 1 Ounce of:		Amount Produced in 8 Hours	
	Meat	Potatoes	Meat	Potatoes
Frank the farmer	60 min/oz	15 min/oz	8 oz	32 oz
Ruby the rancher	20 min/oz	10 min/oz	24 oz	48 oz

Figure 1 The Production Possibilities Frontier (2 of 2)

Panel (b) shows the combinations of meat and potatoes that Frank can produce. Panel (c) shows the combinations of meat and potatoes that Ruby can produce. Both production possibilities frontiers assume that Frank and Ruby each work 8 hours per day. If there is no trade, their production possibilities frontiers are also their consumption possibilities frontiers.



Example 1: The U.S. PPF (1 of 3)

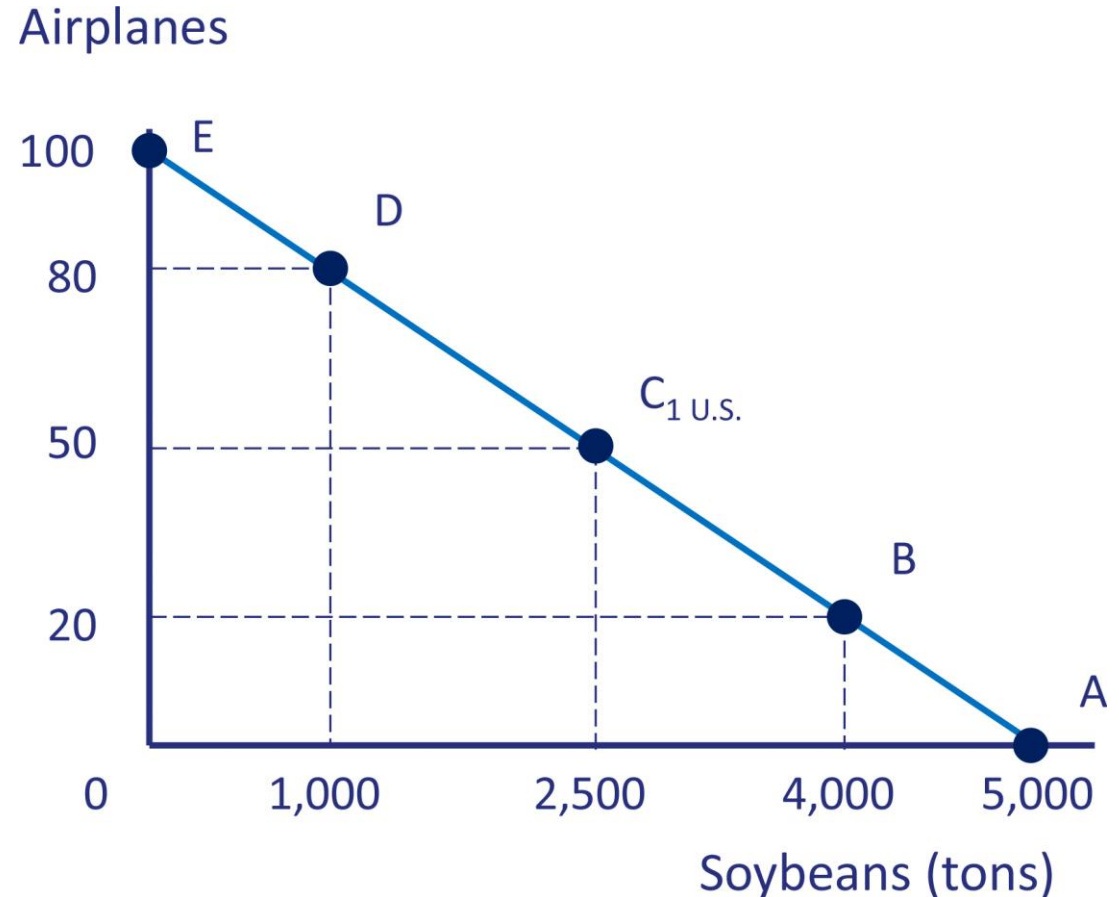
- The U.S. PPF
 - The U.S. economy has 50,000 labor hours per month available for production
 - Produces only two goods—airplanes and soybeans
 - To produce 1 airplane requires 500 labor hours
 - To produce 1 ton of soybeans requires 10 labor hours

Example 1: The U.S. PPF (2 of 3)

	Employment of Labor Hours	Employment of Labor Hours	Production	Production
	Airplanes	Soybeans	Airplanes	Soybeans
A	50,000	0	100	0
B	40,000	10,000	80	1,000
C	25,000	25,000	50	2,500
D	10,000	40,000	20	4,000
E	0	50,000	0	5,000

Example 1: The U.S. PPF (3 of 3)

- The United States has enough labor to produce any combination along the PPF
- Suppose the United States uses half its labor to produce each of the two goods
 - The U.S. production and consumption would be 50 airplanes and 2,500 tons of soybeans

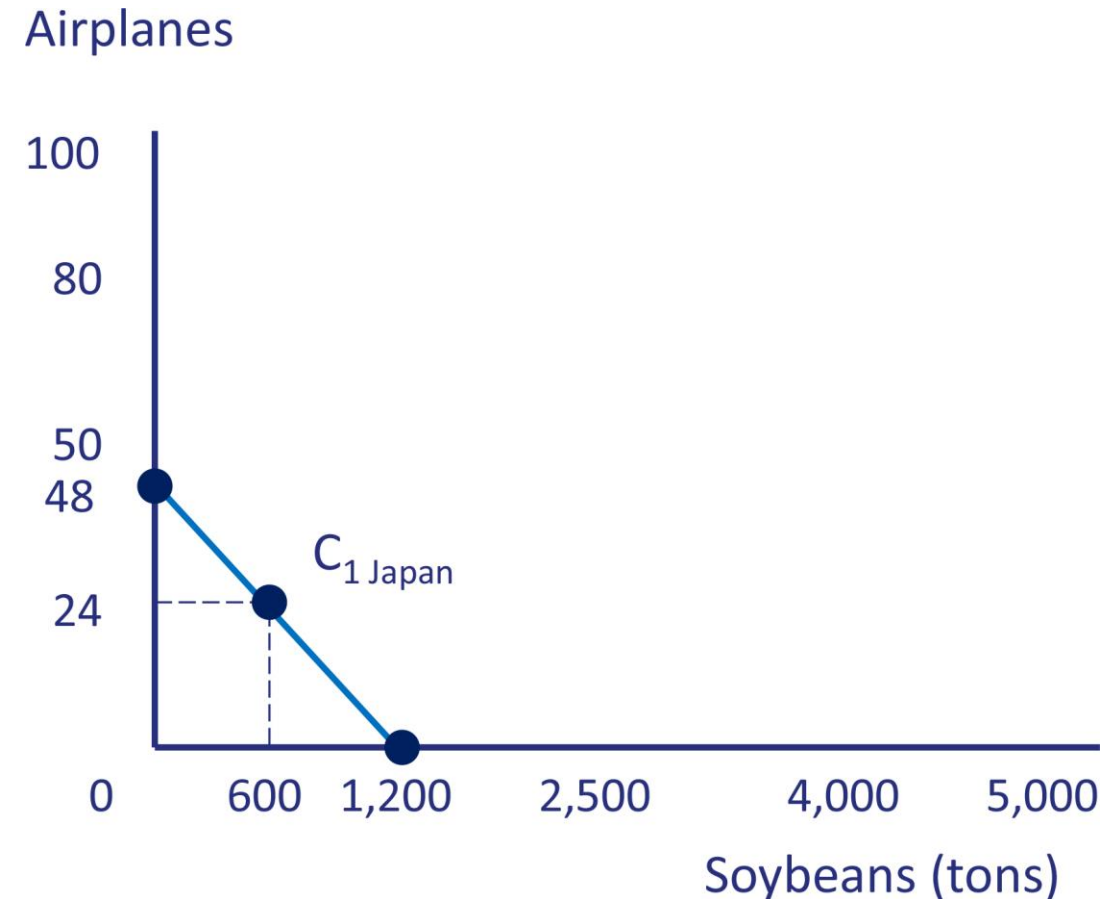


Active Learning 1: Japan's PPF

- Use the following information to draw Japan's PPF
 - Japan has 30,000 labor hours per month available for production
 - Produces only two goods—airplanes and soybeans
 - To produce 1 airplane requires 625 labor hours
 - To produce 1 ton of soybeans requires 25 labor hours
- Your graph should measure soybeans (tons) on the horizontal axis

Active Learning 1: Answers

- Japan has enough labor to produce any combination along the PPF
- Suppose Japan uses half its labor to produce each of the two goods
 - Japan's production and consumption would be 24 airplanes and 600 tons of soybeans



Specialization and Trade

- Farmer Frank specializes in growing potatoes
 - More time growing potatoes
 - Less time raising cattle
- Rancher Ruby specializes in raising cattle
 - More time raising cattle
 - Less time growing potatoes
- Trade: 5 oz of meat for 15 oz of potatoes

Figure 2 How Trade Expands the Set of Consumption Opportunities (1 of 2)

The proposed trade offers Frank and Ruby a combination of meat and potatoes that would be impossible without trade. In panel (a), Frank consumes at point A* rather than point A. In panel (b), Ruby consumes at point B* rather than point B. Trade allows each to consume more meat and more potatoes.

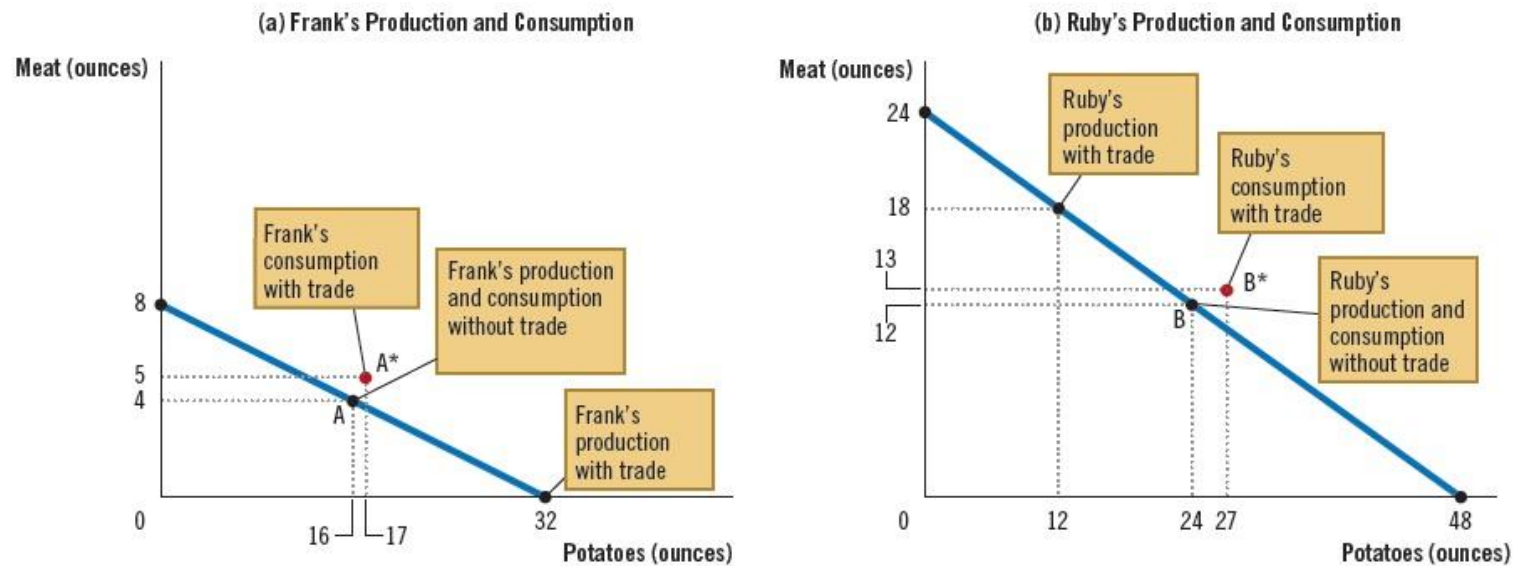


Figure 2 How Trade Expands the Set of Consumption Opportunities (2 of 2)

Trade allows each to consume more meat and more potatoes.

(c) The Gains from Trade: A Summary				
	Frank		Ruby	
	Meat	Potatoes	Meat	Potatoes
Without Trade:				
Production and Consumption	4 oz	16 oz	12 oz	24 oz
With Trade:				
Production	0 oz	32 oz	18 oz	12 oz
Trade	Gets 5 oz	Gives 15 oz	Gives 5 oz	Gets 15 oz
Consumption	5 oz	17 oz	13 oz	27 oz
GAINS FROM TRADE:				
Increase in Consumption	+1 oz	+1 oz	+1 oz	+3 oz

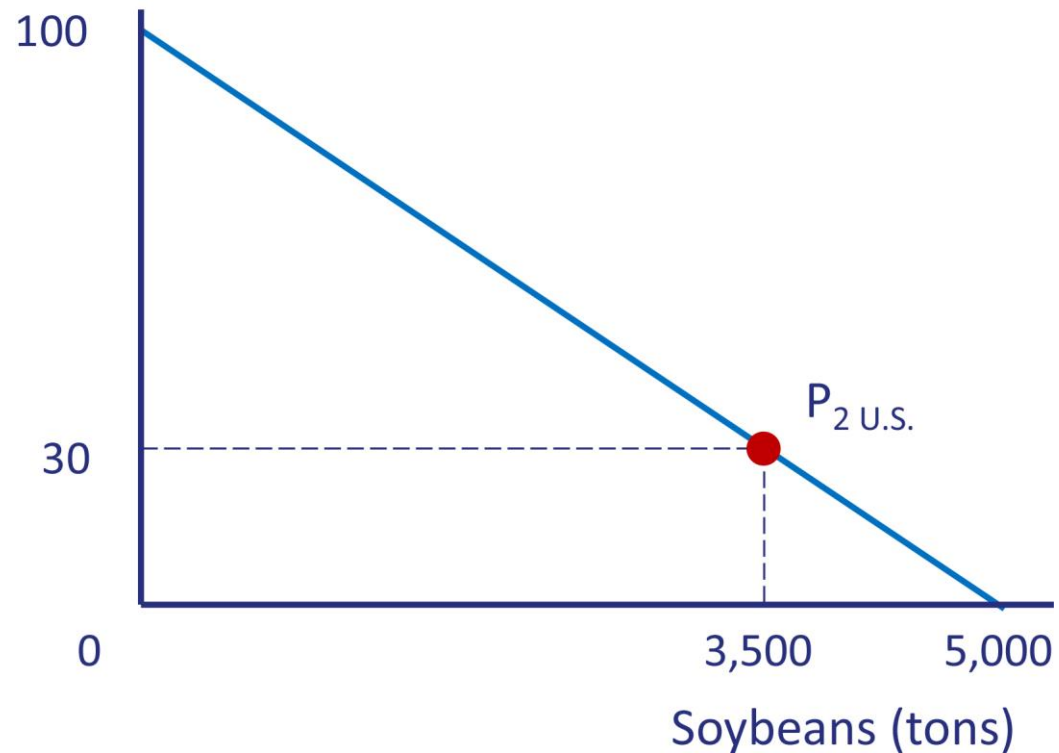
Active Learning 2: Production Under Trade

We continue Example 1 and Active Learning 1, but this time the two countries will choose different production points.

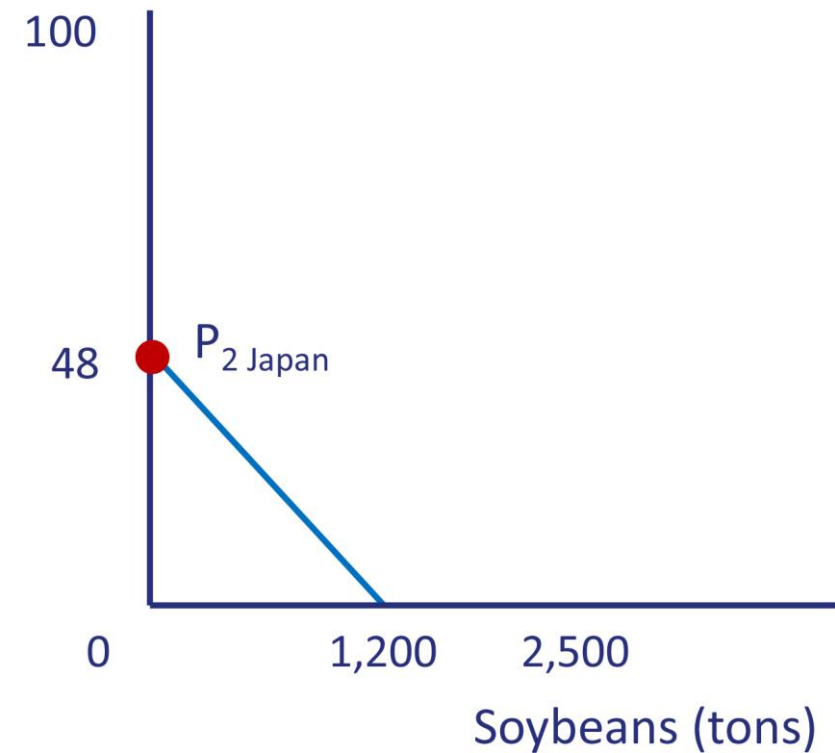
- A. The United States produces 3,500 tons of soybeans. How many airplanes can the United States produce with the remaining resources? Draw this point on the U.S. PPF.
- B. Japan produces 48 airplanes. How many tons of soybeans can Japan produce with the remaining resources? Draw this point on Japan's PPF.

Active Learning 2: Answers

Airplanes



Airplanes



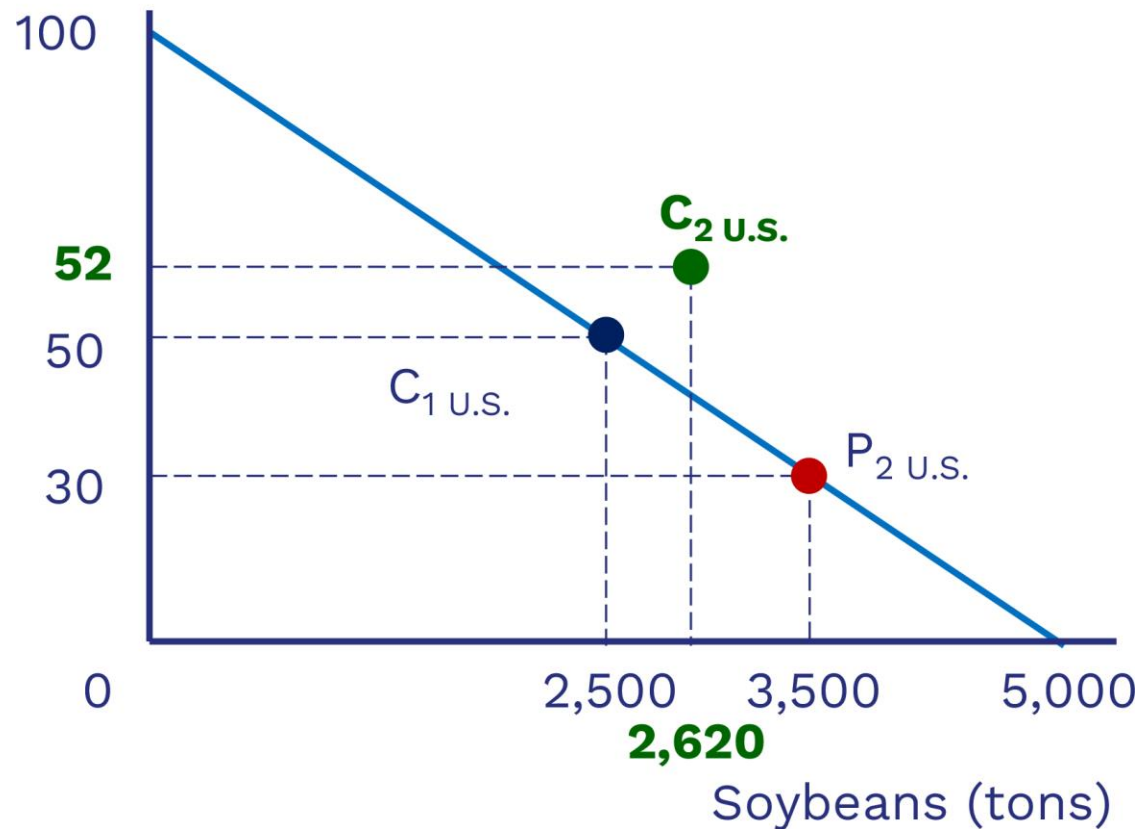
Active Learning 3: Consumption Under Trade

We continue Active Learning 2, but this time the two countries will be able to trade: 22 airplanes for 880 tons of soybeans

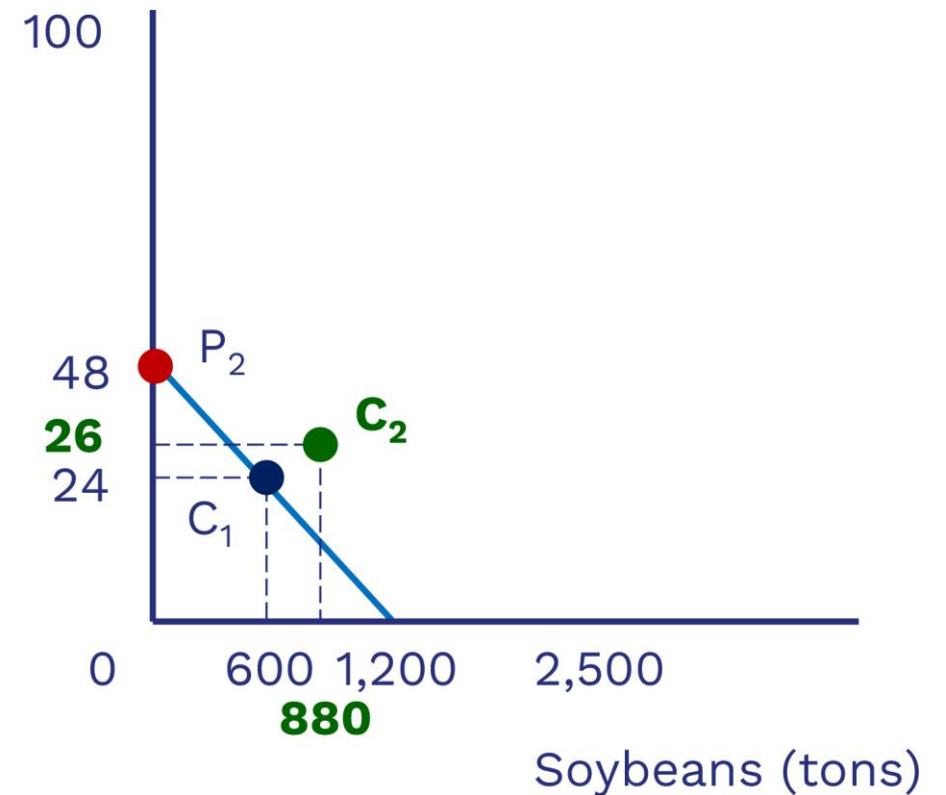
- A. The United States exports 880 tons of soybeans and imports 22 airplanes. How much of each good is consumed in the United States? Plot this combination on the U.S. PPF.
- B. Japan exports 22 airplanes and imports 880 tons of soybeans. How much of each good is consumed in Japan? Plot this combination on Japan's PPF.

Active Learning 3: Answers

Airplanes



Airplanes



3-2

Comparative Advantage: The Driving Force of Specialization

Absolute Advantage

- **Absolute advantage***
 - The ability to produce a good using fewer inputs than another producer
 - To produce 1 oz of meat—Ruby needs 20 minutes, Frank needs 60 minutes
 - To produce 1 oz of potatoes—Ruby needs 10 minutes, Frank needs 15 minutes
- Ruby has an absolute advantage in producing both meat and potatoes because she requires less time than Frank to produce a unit of either good

*Words accompanied by an asterisk are key terms from the chapter.

Opportunity Cost and Comparative Advantage

- **Opportunity cost***
 - Whatever must be given up to obtain some item
- Ruby—10 min. to grow 1 ounce of potatoes, 20 min. to produce 1 ounce of meat
 - Opportunity cost of producing 1 ounce of potatoes is $\frac{1}{2}$ ounce of meat
- Frank—15 min. to grow 1 oz potatoes, 60 min. to produce 1 oz meat
 - Opportunity cost of producing 1 ounce of potatoes is $\frac{1}{4}$ ounce of meat

*Words accompanied by an asterisk are key terms from the chapter.

Table 1 The Opportunity Cost of Meat and Potatoes

	Opportunity Cost	Opportunity Cost
	1 oz of Meat	1 oz of Potatoes
Frank the farmer	4 oz potatoes	$\frac{1}{4}$ oz meat
Ruby the rancher	2 oz potatoes	$\frac{1}{2}$ oz meat

Comparative Advantage (1 of 2)

- **Comparative advantage***
 - The ability to produce a good at a lower opportunity cost than another producer
- One person
 - Can have an absolute advantage in both goods
 - Cannot have a comparative advantage in both goods

*Words accompanied by an asterisk are key terms from the chapter.

Comparative Advantage (2 of 2)

- Opportunity cost of one good
 - Inverse of the opportunity cost of the other good
 - If a person's opportunity cost of one good is relatively high, opportunity cost of the other good must be relatively low
- For different opportunity costs
 - One person has comparative advantage in one good
 - The other person has comparative advantage in the other good

Comparative Advantage and Trade

- Gains from specialization and trade
 - Based on comparative advantage
 - Total production in economy rises
- Gains from trade
 - Reflected in the implicit prices that the trading partners pay each other
- Trade can benefit everyone because it allows people to specialize in the activities in which they have a comparative advantage

The Price of the Trade

- For both parties to gain from trade, the price at which they trade must lie between their opportunity costs

3-3

Applications of Comparative Advantage

Should the United States Trade with Other Countries? (1 of 4)

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

*Words accompanied by an asterisk are key terms from the chapter.

Should the United States Trade with Other Countries? (2 of 4)

- United States and Japan
 - Each produces food and cars
 - One American worker, in one month, can produce
 - One car or 2 tons of food
 - One Japanese worker, in one month, can produce
 - One car or 1 ton of food

Should the United States Trade with Other Countries? (3 of 4)

- Opportunity cost of a car
 - 2 tons of food in the United States, 1 ton of food in Japan
 - Japan has a comparative advantage in producing cars
- Opportunity cost of a ton of food
 - 1 car in Japan, $\frac{1}{2}$ car in the United States
 - The United States has a comparative advantage in producing food

Should the United States Trade with Other Countries? (4 of 4)

- Principle of comparative advantage
 - Each good should be produced by the country with the smaller opportunity cost of producing that good
 - Japan should produce more cars than it wants for its own use and export some of them to the United States
 - The United States should produce more food than it wants to consume and export some to Japan
- Through specialization and trade, both countries have more food and more cars

3-4

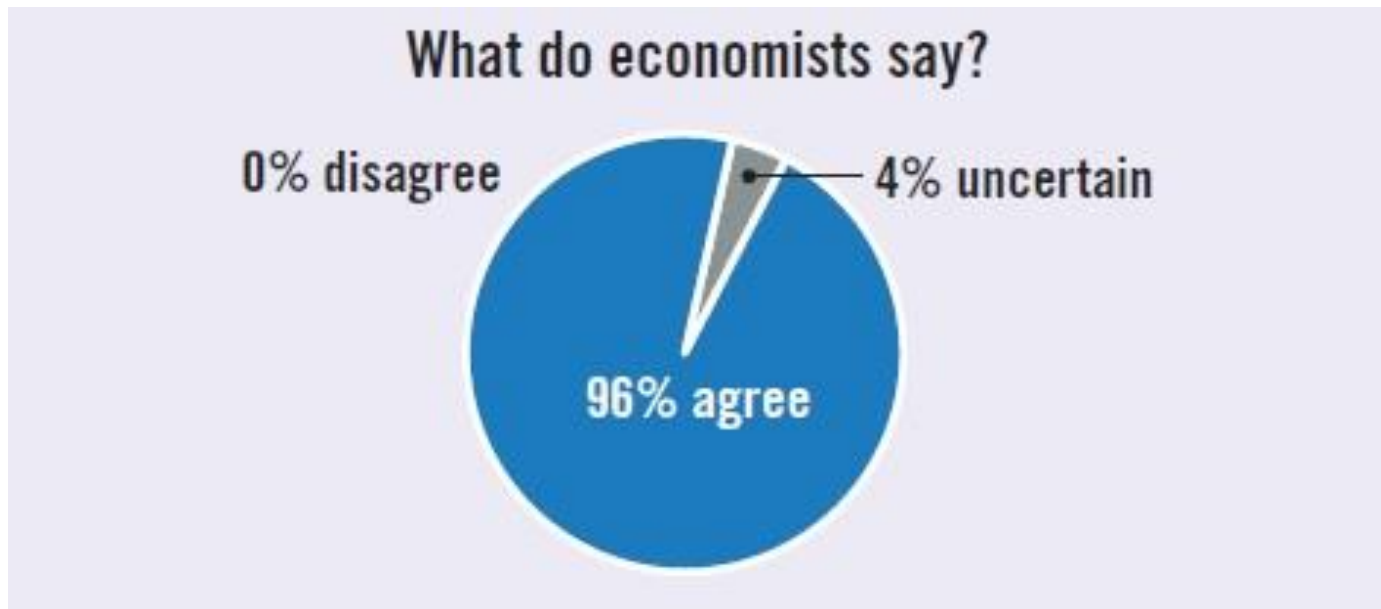
Conclusion

Conclusion

- The principle of comparative advantage shows that trade can make everyone better off
- How is it possible?
 - How do free societies coordinate the diverse activities of all the people involved in their economies?
 - What ensures that goods and services will get from those who should be producing them to those who should be consuming them?
- Most economies allocate resources using the market forces of supply and demand

Ask the Experts: Trade between China and the United States - B

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



Source: IGM Economic Experts Panel, June 19, 2012.

Think-Pair-Share Activity

- You are watching an election debate on television. A candidate says, “We need to stop the flow of foreign steel into our country. If we place a tariff on imports of steel, our domestic steel production will rise and the United States will be better off.”
 - A. Will the United States be better off if we limit steel imports? Explain.
 - B. Will anyone in the United States be better off if we limit steel imports? Explain.
 - C. In the real world, does every person in the country gain when restrictions on imports are reduced? Explain.

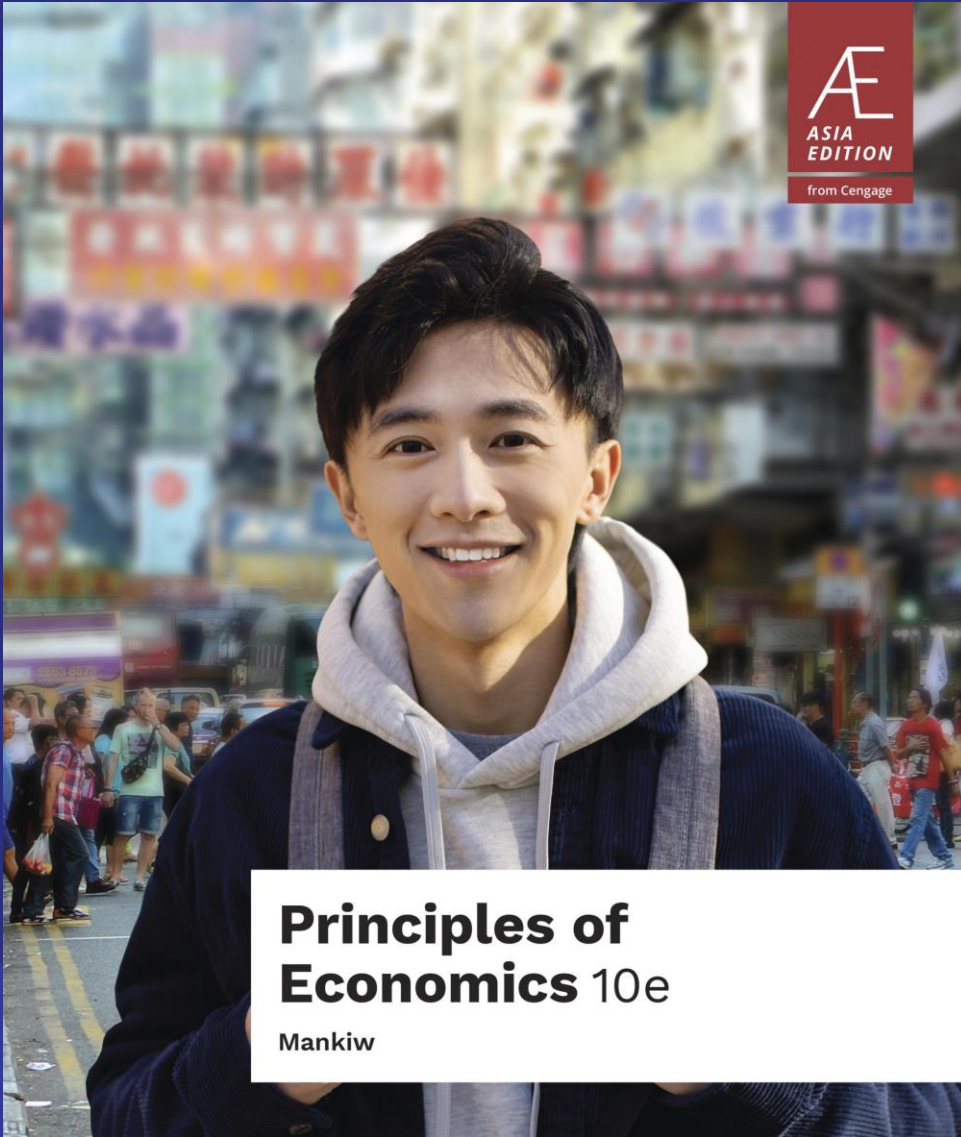
Self-Assessment

- What exactly do people gain when they trade with one another?
- Compared to a roommate, are there activities in which you have an absolute advantage? A comparative advantage?

Summary

Click the link to review the objectives for this presentation.

[Link to Objectives](#)



Principles of Economics, 10e

Chapter 2 Appendix

Graphing: A Brief Review

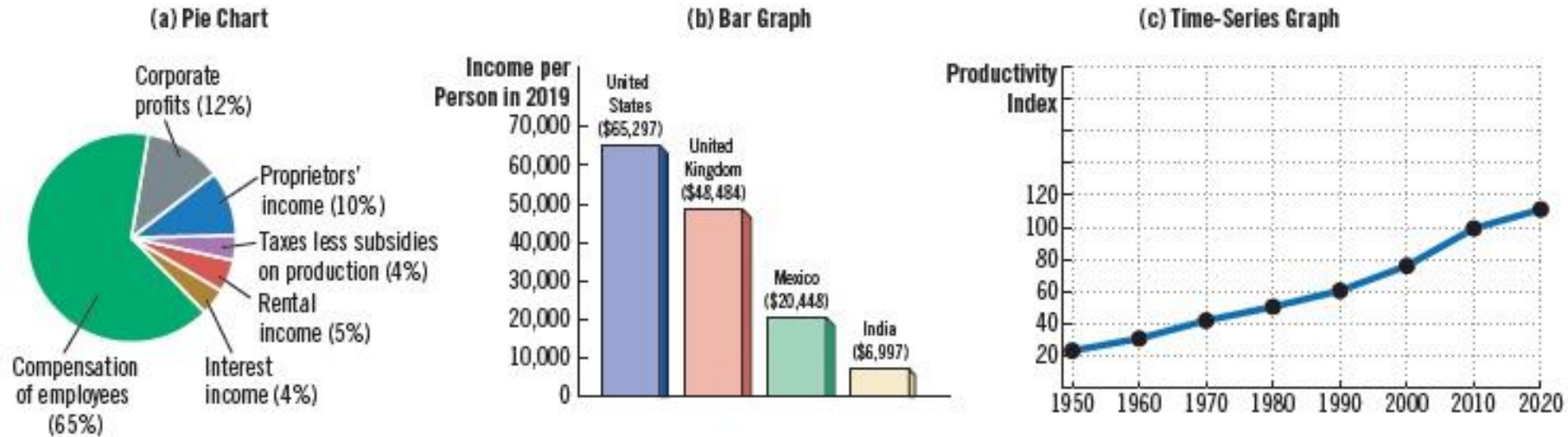
- Graphs serve two purposes
 - Visually express ideas that might be less clear if described with equations or words
 - Powerful way of finding and interpreting patterns

Graphs of a Single Variable

- Pie chart
- Bar graph
- Time-series graph

Figure A-1 Types of Graphs

The pie chart in panel (a) shows how U.S. national income in 2020 was derived from different sources. The bar graph in panel (b) compares the average income in four countries. The time-series graph in panel (c) shows labor productivity in U.S. businesses over time.



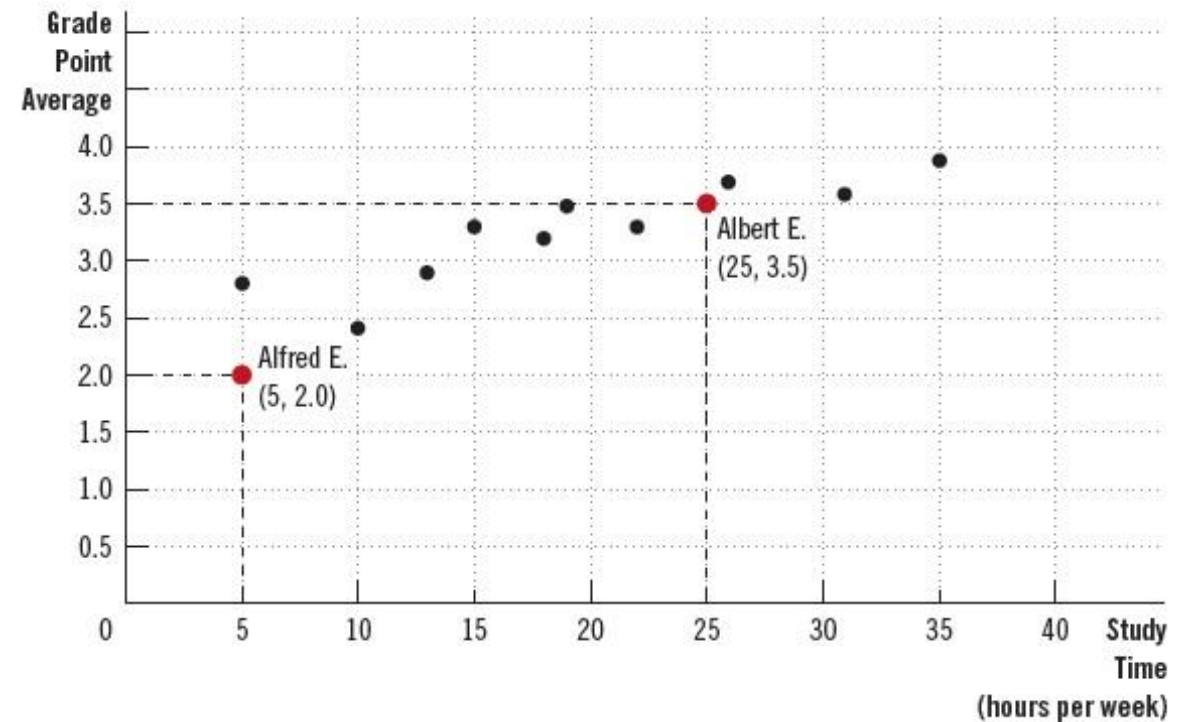
Source: U.S. Department of Commerce, The World Bank.

Graphs of Two Variables: The Coordinate System

- Display two variables on a single graph
- Scatterplot
- Ordered pairs of points
 - x -coordinate
 - Horizontal location
 - y -coordinate
 - Vertical location

Figure A-2 Using the Coordinate System

- Grade point average is measured on the vertical axis and study time on the horizontal axis.
- Albert E., Alfred E., and their classmates are represented by various points.
- The graph shows that students who study more tend to get higher grades.



Curves in the Coordinate System

- Data
 - Number of novels purchased
 - Price of novels and income
- Demand curve
 - Effect of a good's price
 - On the quantity of the good consumers want to buy
 - For a given income

Table A-1 Novels Purchased by Emma

- This table shows the number of novels Emma buys at various incomes and prices.
- For any given level of income, the data on price and quantity demanded can be graphed to produce Emma's demand curve for novels, as shown in Figures A-3 and A-4.

Price	For \$30,000 Income	For \$40,000 Income	For \$50,000 Income
\$10	2 novels	5 novels	8 novels
9	6	9	12
8	10	13	16
7	14	17	20
6	18	21	24
5	22	25	28
	Demand curve, D_3	Demand curve, D_1	Demand curve, D_2

Demand Curve

- Negatively related variables
 - The two variables move in opposite direction
 - Downward-sloping curve
- Positively related variables
 - The two variables move in the same direction
 - Upward-sloping curve

Figure A-3 Demand Curve

- The line D_1 shows how Emma's purchases of novels depend on the price of novels when her income is held constant.
- Because the price and the quantity demanded are negatively related, the demand curve slopes down.

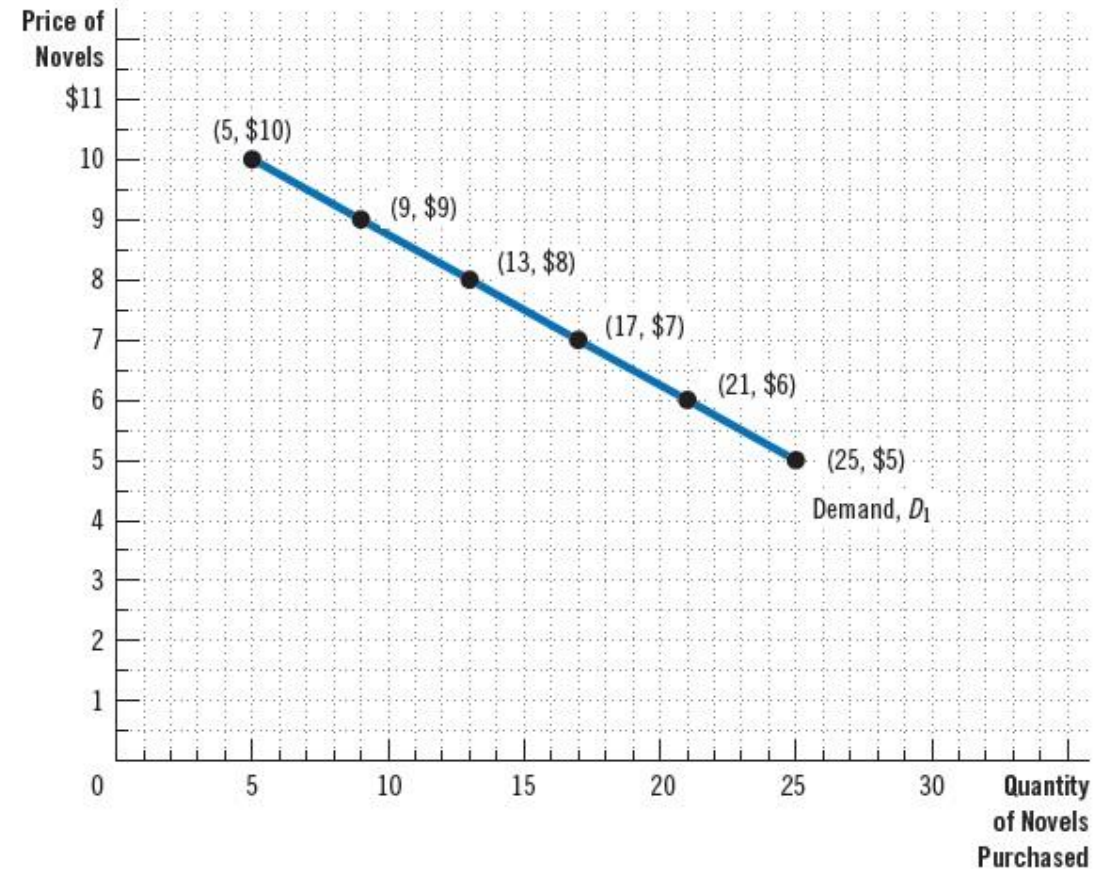
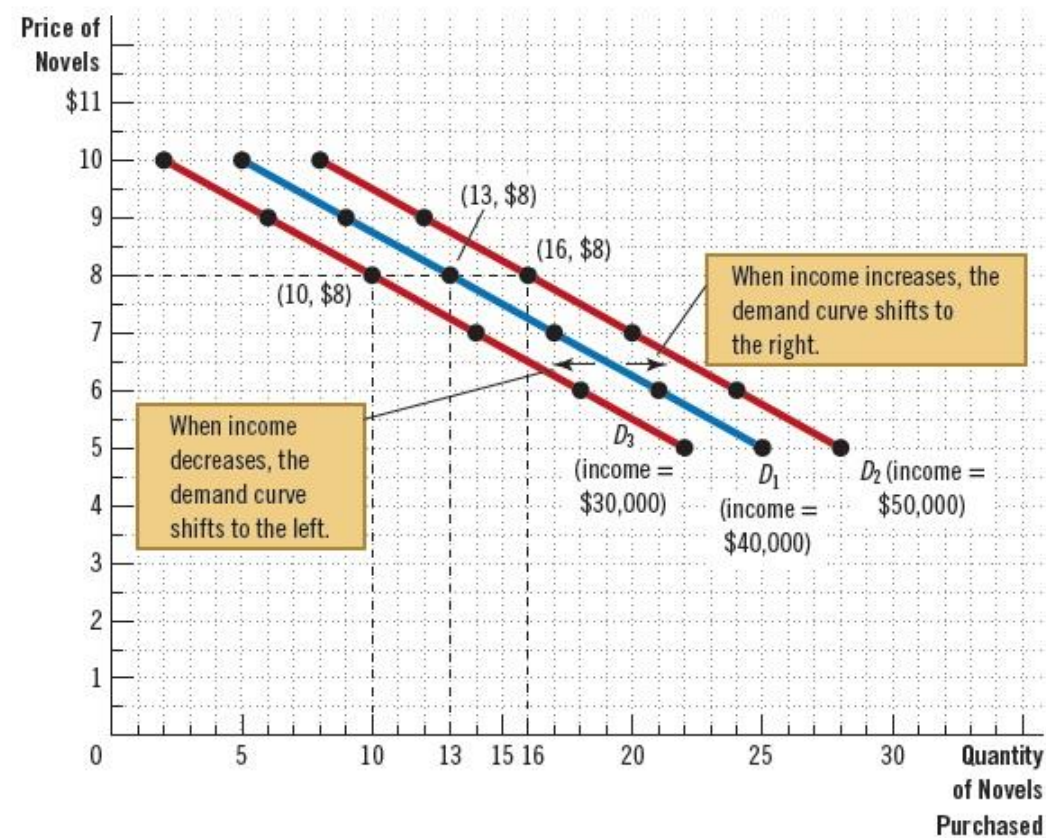


Figure A-4 Shifting Demand Curves

- The location of Emma's demand curve for novels depends on how much income she earns.
- The more she earns, the more novels she buys at any price, and the farther to the right her demand curve lies.
- Curve D_1 represents Emma's original demand curve, based on an income of \$40,000 per year.
- If her income rises to \$50,000 per year, her demand curve shifts to D_2 .
- If her income falls to \$30,000 per year, her demand curve shifts to D_3 .



Slope (1 of 2)

- Ratio of the vertical distance covered
- To the horizontal distance covered
- As we move along the line
 - Δ (delta) = Change in a variable
 - The “rise” (change in y) divided by the “run” (change in x)

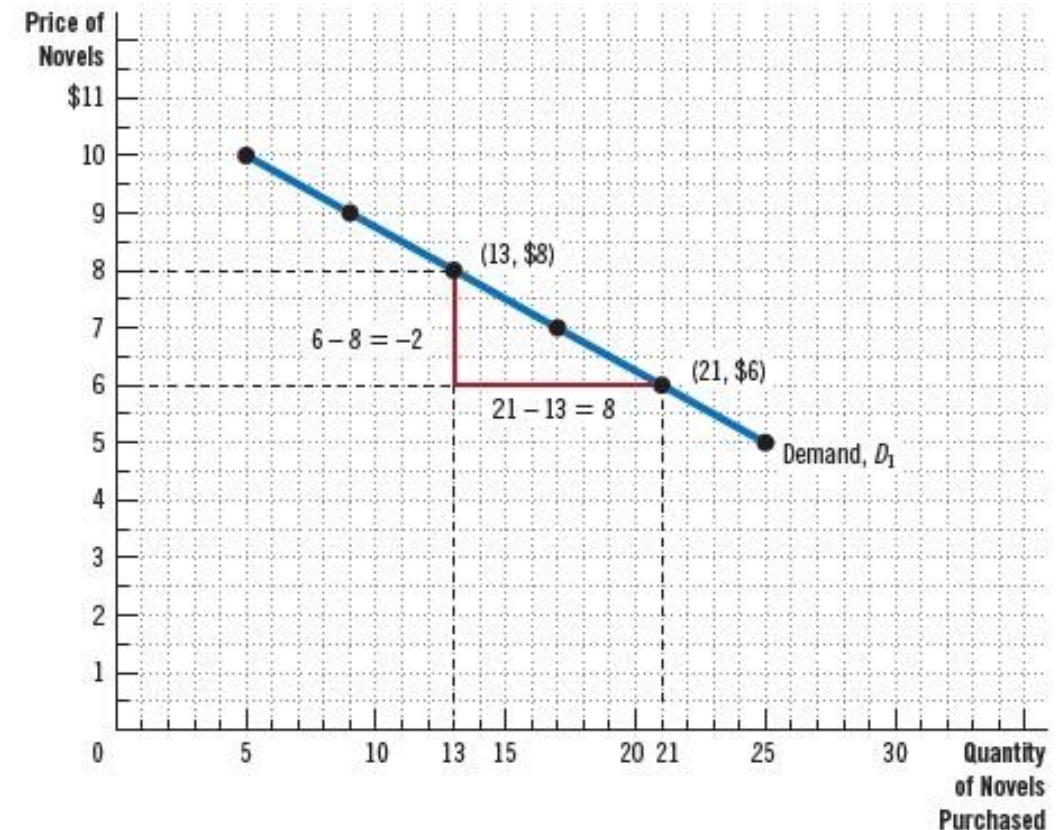
$$\text{slope} = \frac{\Delta y}{\Delta x}$$

Slope (2 of 2)

- Fairly flat upward-sloping line—slope is a small positive number
- Steep upward-sloping line—slope is a large positive number
- Downward-sloping line—slope is a negative number
- Horizontal line—slope is zero
- Vertical line—infinite slope

Figure A-5 Calculating the Slope of a Line

- To calculate the slope of the demand curve, look at the changes in the x - and y -coordinates as we move from the point (13 novels, \$8) to the point (21 novels, \$6).
- The slope of the line is the ratio of the change in the y -coordinate (-2) to the change in the x -coordinate ($+8$), which equals $-1/4$.

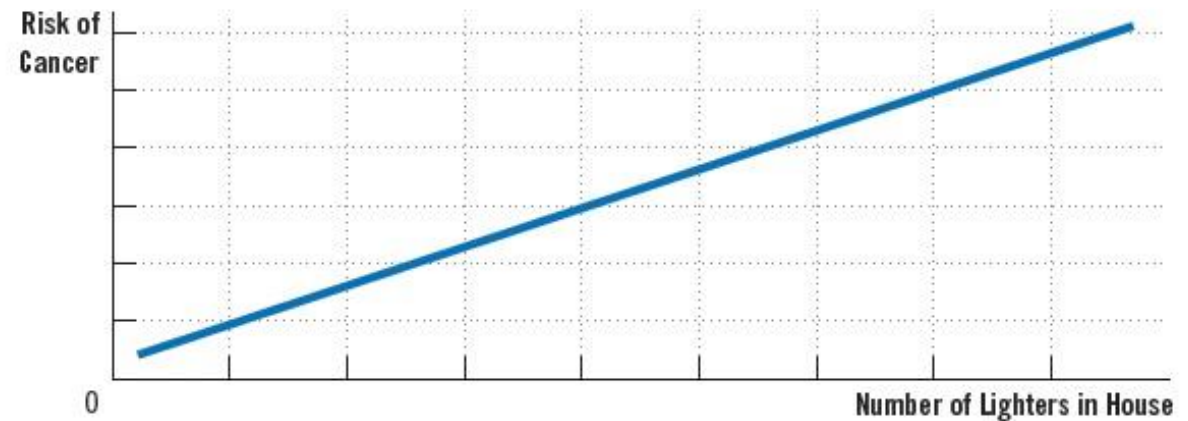


Cause and Effect

- One set of events
 - Causes another set of events
- Omitted variables
 - Lead to a deceptive graph

Figure A-6 Graph with an Omitted Variable

- The upward-sloping curve shows that members of households with more cigarette lighters are more likely to develop cancer.
- Yet we should not conclude that ownership of lighters causes cancer because the graph does not take into account the number of cigarettes smoked.



Reverse Causality

- Reverse causality
 - Decide that event A causes event B
 - Facts: event B causes event A

Figure A-7 Graph Suggesting Reverse Causality

- The upward-sloping curve shows that cities with a higher concentration of police are more dangerous.
- Yet the graph does not tell us whether police cause crime or crime-plagued cities hire more police.

