UNIT 1

Basic Economic Concepts

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1 Basic Economic Concepts

M1: Ten Principles of Economics

I. Introduction

A. The word "economy" comes from the Greek word *oikonomos* meaning "one who manages a household."

B. This makes some sense because in the economy we are faced with many decisions (just as a household is).

C. Definition of economics: **the study of how society manages its scarce resources.**

D. Fundamental economic problem: **resources are scarce.**

E. Resources (**Factors of Production**): land/ labor/ capital/ entrepreneur

F. Definition of scarcity: **the limited nature of society's resources.**

II. How People Make Decisions

A. Principle #1: People Face Trade-offs

1. "There ain't no such thing as a free lunch." Making decisions requires trading one goal for another.
2. Examples include how students spend their time, how a family decides to spend its income, how the U.S. government spends tax dollars, and how regulations may protect the environment at a cost to firm owners.
3. An important trade-off that society faces is the trade-off between efficiency and equality.
   a. Definition of efficiency: **the property of society getting the most it can from its scarce resources.**
   b. Definition of equality: **the property of distributing economic prosperity uniformly among the members of society.**
   c. For example, tax dollars paid by wealthy Americans and then distributed to those less fortunate may improve equality but lower the return to hard work and therefore reduce the level of output produced by our resources.
   d. This implies that the cost of this increased equality is a reduction in the efficient use of our resources.
4. Recognizing that trade-offs exist does not indicate what decisions should or will be made.

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

1. Making decisions requires individuals to consider the benefits and costs of some action.

2. What are the costs of going to college?

   a. We should not count room and board (unless they are more expensive at college than elsewhere) because the student would have to pay for food and shelter even if she were not in school.

   b. We should count the value of the student's time because she could be working for pay instead of attending classes and studying.

3. Definition of **opportunity cost**: whatever must be given up in order to obtain some item.

C. Principle #3: Rational People Think at the Margin

1. Economists generally assume that people are rational.

   a. Definition of **rational people**: people who systematically and purposefully do the best they can to achieve their objectives.

   b. Consumers want to purchase the goods and services that allow them the greatest level of satisfaction given their incomes and the prices they face.

   c. Firm managers want to produce the level of output that maximizes the profits the firms earn.

2. Many decisions in life involve incremental decisions: Should I remain in school this semester? Should I take another course this semester? Should I study another hour for tomorrow's exam?

   a. Definition of **marginal change**: a small incremental adjustment to a plan of action.

   b. Suppose that flying a 200-seat plane across the country costs the airline $100,000, which means that the average cost of each seat is $500. Suppose that the plane is minutes from departure and a passenger is willing to pay $300 for a seat. Should the airline sell the seat for $300? In this case, the marginal cost of an additional passenger is very small.

3. A rational decision maker takes an action if and only if the marginal benefit is at least as large as the marginal cost.

D. Principle #4: People Respond to Incentives

1. Definition of **incentive**: something that induces a person to act.

2. Because rational people make decisions by **weighing costs and benefits**, their decisions may change in response to incentives.

   a. When the price of a good rises, consumers will buy less of it because its cost has risen.

   b. When the price of a good rises, producers will allocate more resources to the production of the good because the benefit from producing the good has risen.

3. Many public policies change the costs and benefits that people face. Sometimes policymakers fail to understand how policies alter incentives and behavior and a policy may lead to unintended consequences.

III. How People Interact

A. Principle #5: Trade Can Make Everyone Better Off

1. Trade is not like a sports contest, where one side gains and the other side loses.

2. Consider trade that takes place inside your home. Your family is likely to be involved in trade with other families on a daily basis. Most families do not build their own homes, make their own clothes, or grow their own food.

3. Countries benefit from trading with one another as well.

4. Trade allows for specialization in products that countries (or families) can do best.

B. Principle #6: Markets Are Usually a Good Way to Organize Economic Activity

1. Definition of market economy: an economy that allocates resources through the decentralized decisions of many firms and households as they interact in markets for goods and services.

2. Market prices reflect both the value of a product to consumers and the cost of the resources used to produce it.

3. When a government interferes in a market and prevents price from adjusting, household and firm decisions become distorted.

4. Centrally planned economies failed because they did not allow the market to work.

C. Principle #7: Governments Can Sometimes Improve Market Outcomes

1. The invisible hand will only work if the government enforces property rights.

   a. Definition of property rights: the ability of an individual to own and exercise control over scarce resources.

2. There are two broad reasons for the government to interfere with the economy: the promotion of efficiency and equality.

3. Government policy can improve efficiency when there is market failure.

   a. Definition of market failure: a situation in which a market left on its own fails to allocate resources efficiently.

IV. How the Economy as a Whole Works

A. Principle #8: A Country's Standard of Living Depends on Its Ability to Produce Goods and Services

1. Differences in living standards from one country to another are quite large.

2. Changes in living standards over time are also great.

3. The explanation for differences in living standards lies in differences in productivity.

4. Definition of productivity: the quantity of goods and services produced by each unit of labor input.

5. High productivity implies a high standard of living.

6. Thus, policymakers must understand the impact of any policy on our ability to produce goods and services.

B. Principle #9: Prices Rise When the Government Prints "Too Much Money"

1. Definition of inflation: an increase in the overall level of prices in the economy.

2. When the government creates a large amount of money, the value of money falls, leading to price increases.

3. Examples: Germany after World War I (in the early 1920s) and the United States in the 1970s.

C. Principle #10: Society Faces a Short-Run Trade-off between Inflation and Unemployment

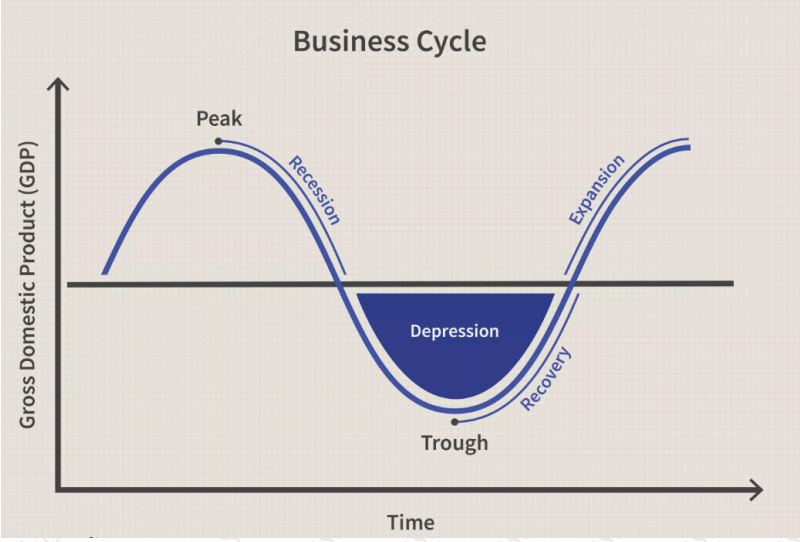
1. Most economists believe that the short-run effect of a monetary injection is lower unemployment and higher prices.

   a. An increase in the amount of money in the economy stimulates spending and increases the quantity of goods and services sold in the economy. The increase in the quantity of goods and services sold will cause firms to hire additional workers.

   b. An increase in the demand for goods and services leads to higher prices over time.

2. The short-run trade-off between inflation and unemployment plays a key role in the analysis of the business cycle.

3. Definition of business cycle: fluctuations in economic activity, such as employment and production.



4. The stages in the business cycle include expansion, peak, recession or contraction, depression, trough, and recovery.

   a. Expansion
   This is the first stage. When the expansion occurs, there is an increase in employment, incomes, production, and sales.

   b. Peak
   The second stage is a peak when the economy hits a snag, having reached the maximum level of. growth. Prices hit their highest level, and economic indicators stop growing.

   c. Recession
   These are periods of contraction. During a recession, unemployment rises, production slows down, sales start to drop because of a decline in demand, and incomes become stagnant or decline.

d. Depression
Economic growth continues to drop while unemployment rises and production plummets.

e. Trough
This period marks the end of the depression, leading an economy into the next step: recovery.

f. Recovery
In this stage, the economy starts to turn around. Low prices spur an increase in demand, employment and production start to rise, and lenders start to open up their credit coffers. This stage marks the end of one business cycle.

M2: Economic Models

I. Our First Model: **The Circular Flow Diagram**

A. Economists Follow the Scientific Method.

1. Observations help us to develop theory.

2. Data can be collected and analyzed to evaluate theories.

3. Using data to evaluate theories is more difficult in economics than in physical science because economists are unable to generate their own data and must make do with whatever data are available.

B. Assumptions Make the World Easier to Understand.

1. Example: to understand international trade, it may be helpful to start out assuming that there are only two countries in the world producing only two goods. Once we understand how trade would work between these two countries, we can extend our analysis to a greater number of countries and goods.

2. One important role of a scientist is to understand which assumptions one should make.

3. Economists often use assumptions that are somewhat unrealistic but will have small effects on the actual outcome of the answer.

C. Economists Use Economic Models to Explain the World around Us.

1. Most economic models are composed of diagrams and equations.

2. The goal of a model is to simplify reality in order to increase our understanding. This is where the use of assumptions is helpful.

D. Our First Model: The Circular Flow Diagram

1. Definition of circular-flow diagram: a visual model of the economy that shows how dollars flow through markets among households and firms.

2. This diagram is a very simple model of the economy. Note that it ignores the roles of government and international trade.

   a. There are two decision makers in the model: households and firms.

   b. There are two markets: the market for goods and services and the market for factors of production.

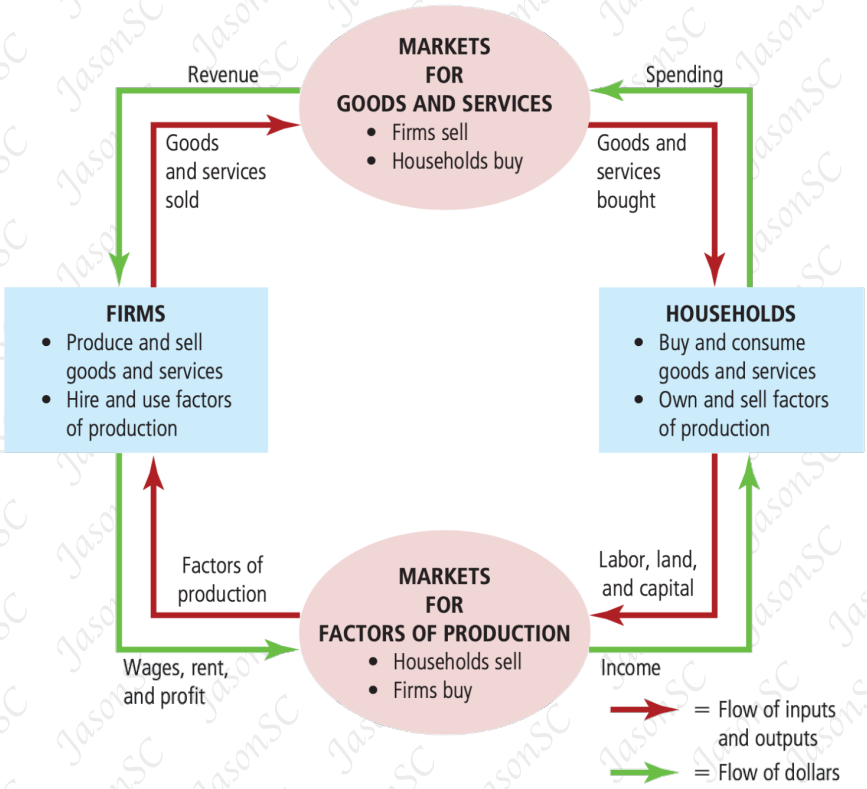
c. Firms are sellers in the market for goods and services and buyers in the market for factors of production.

d. Households are buyers in the market for goods and services and sellers in the market for factors of production.

e. The inner loop represents the flows of inputs and outputs between households and firms.

f. The outer loop represents the flows of dollars between households and firms.

Figure 1 The Circular Flow Diagram



II. Our Second Model: **The Production Possibilities Frontier/Curve**

A. The Production Possibilities Frontier/ Curve

1. Definition of production possibilities frontier: a graph that shows the combinations of output that the economy can possibly produce given the available factors of production and the available production technology.

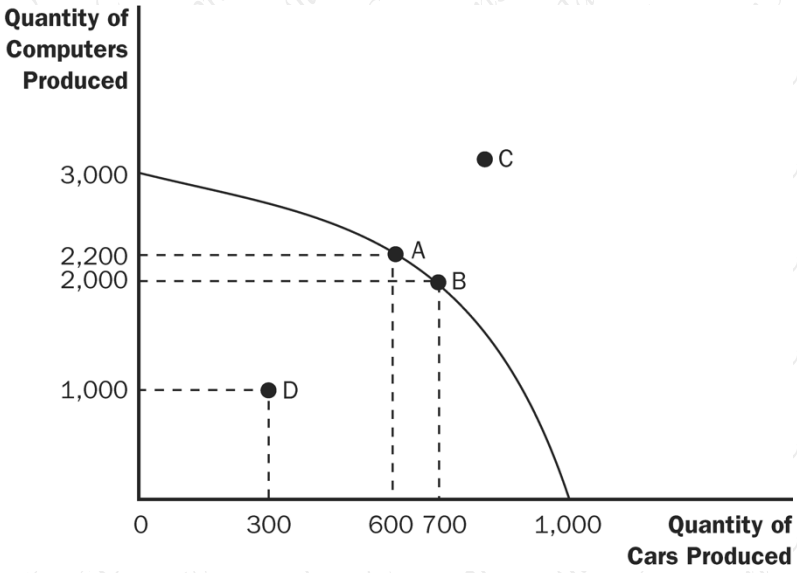
2. Example: an economy that produces two goods, cars and computers.

a. If all resources are devoted to producing cars, the economy would produce 1,000 cars and zero computers.

b. If all resources are devoted to producing computers, the economy would produce 3,000 computers and zero cars.

c. More likely, the resources will be divided between the two industries, producing some cars and some computers. The feasible combinations of output are shown on the production possibilities frontier.

Figure 2 The Production Possibilities Frontier/ Curve



3. Because resources are scarce, not every combination of computers and cars is possible. Production at a point outside of the curve (such as C) is not possible given the economy's current level of resources and technology.

4. Production is **efficient** at points on the curve (such as A and B). This implies that the economy is getting all it can from the scarce resources it has available. There is no way to produce more of one good without producing less of another.

5. Production at a point inside the curve (such as D) is **inefficient**.

   a. This means that the economy is producing less than it can from the resources it has available.

   b. If the source of the inefficiency is eliminated, the economy can increase its production of both goods.

6. The production possibilities frontier reveals Principle #1: People face trade-offs.

   a. Suppose the economy is currently producing 600 cars and 2,200 computers.

   b. To increase the production of cars to 700, the production of computers must fall to 2,000.

7. Principle #2 is also shown on the production possibilities frontier: The cost of something is what you give up to get it (**opportunity cost**).

   a. The opportunity cost of increasing the production of cars from 600 to 700 is 200 computers.

   b. Thus, the opportunity cost of each car is two computers.

8. The opportunity cost of a car depends on the number of cars and computers currently produced by the economy.

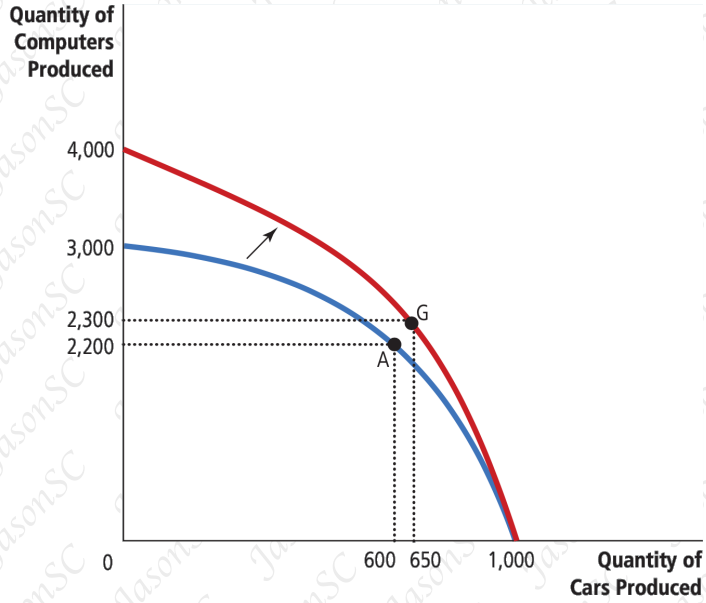
   a. The opportunity cost of a car is high when the economy is producing many cars and few computers.

   b. The opportunity cost of a car is low when the economy is producing few cars and many computers.

9. Economists generally believe that production possibilities frontiers often have this **bowed-out** shape because some resources are better suited to the production of cars than computers (and vice versa).

10. The production possibilities frontier can shift if resource availability or technology changes. Economic growth can be illustrated by an outward shift of the production possibilities frontier.

Figure 3 Economic Growth



B. Microeconomics and Macroeconomics

1. Economics is studied on various levels.

a. Definition of microeconomics: the study of how households and firms make decisions and how they interact in markets.

b. Definition of macroeconomics: the study of economy-wide phenomena, including inflation, unemployment, and economic growth.

2. Microeconomics and macroeconomics are closely intertwined because changes in the overall economy arise from the decisions of individual households and firms.

C. Positive versus Normative Analysis

1. Example of a discussion of minimum-wage laws: Polly says, "Minimum-wage laws cause unemployment." Norma says, "The government should raise the minimum wage."

2. Definition of positive statements: claims that attempt to describe the world as it is.

3. Definition of normative statements: claims that attempt to prescribe how the world should be.

4. Positive statements can be evaluated by examining data, while normative statements involve personal viewpoints.

5. Positive views about how the world works affect normative views about which policies are desirable.

6. Much of economics is positive; it tries to explain how the economy works. But those who use economics often have goals that are normative. They want to understand how to improve the economy.

M3: Interdependence and the Gains from Trade

I. Absolute Advantage

A. Example: two goods—meat and potatoes; and two people—a cattle rancher named Rose and a potato farmer named Frank (each of whom likes to consume both potatoes and meat).

1. The gains from trade are obvious if Frank can only grow potatoes and Rose can only raise cattle.

2. The gains from trade are also obvious if, instead, Frank can raise cattle as well as grow potatoes, but he is not as good at it and Rose can grow potatoes in addition to raising cattle, but her land is not well suited for it.

3. The gains from trade are not as clear if either Frank or Rose is better at producing both potatoes and meat.

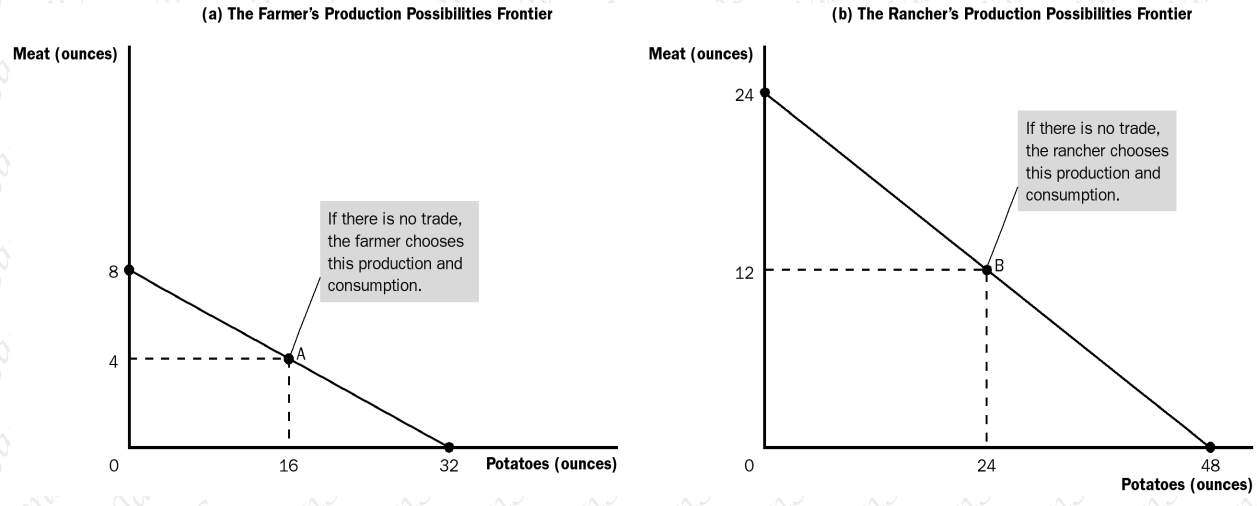
B. Production Possibilities

1. Frank and Rose both work eight hours per day and can use this time to grow potatoes, raise cattle, or both.

2. Figure 4 shows the amount of time each takes to produce one ounce of either good:

Figure 4 The Production Possibilities Frontier

	Minutes Needed to Make One Ounce of:		Amount Produced in Eight Hours	
	Meat	Potatoes	Meat	Potatoes
Frank the farmer	60 min./oz.	15 min./oz.	8/1=8 oz.	8/0.25=32 oz.
Rose the rancher	20 min./oz.	10 min./oz.	8/0.33=24 oz.	8/0.16=48 oz.



3. The production possibilities frontiers can also be drawn.

a. These production possibilities frontiers are drawn linearly instead of being bowed out. This assumes that Frank's and Rose's technology for producing meat and potatoes allows them to switch between producing one good and the other at a constant rate.

4. We will assume that Frank and Rose divide their time equally between raising cattle and growing potatoes.

   a. Frank produces (and consumes) at point A—16 ounces of potatoes and 4 ounces of meat.

   b. Rose produces (and consumes) at point B—24 ounces of potatoes and 12 ounces of meat.

C. Absolute Advantage

1. Definition of absolute advantage: the ability to produce a good using fewer inputs than another producer does.

2. Rose has an absolute advantage in the production of both potatoes and meat.

II. Comparative Advantage: The Driving Force of Specialization

A. Opportunity Cost and Comparative Advantage

1. Definition of opportunity cost: whatever must be given up to obtain some item.

   a. For Rose, it takes ten minutes to produce one ounce of potatoes. Those same ten minutes could be used to produce one-half ounce of meat. Thus, the opportunity cost of producing an ounce of potatoes is one-half ounce of meat.

   b. For Frank, it takes 15 minutes to produce one ounce of potatoes. Those same 15 minutes could be used to. produce one-fourth ounce of meat. Therefore, the opportunity cost of producing one ounce of potatoes is one-fourth ounce of meat.

   c. The opportunity cost of producing one ounce of meat is the inverse of the opportunity cost of producing one ounce of potatoes.

2. Definition of comparative advantage: the ability to produce a good at a lower opportunity cost than another producer.

   a. Frank has a lower opportunity cost of producing potatoes and therefore has a comparative advantage in the production of potatoes.

   b. Rose has a lower opportunity cost of producing meat and therefore has a comparative advantage in the production of meat.

3. Because the opportunity cost of producing one good is the inverse of the opportunity cost of producing the other, it is impossible for a person to have a comparative advantage in the production of both goods.

Table 1 The Opportunity Cost of Meat and Potatoes

	Opportunity Cost of:	
	1 oz of Meat	1 oz of Potatoes
Frank the farmer	4 oz potatoes	¼ oz meat
Rose the rancher	2 oz potatoes	½ oz meat

B. Specialization and Trade

1. Suppose Rose suggests that Frank specialize in the production of potatoes and then trade with her for meat.

   a. Rose will spend six hours a day producing meat (18 ounces) and two hours a week growing potatoes (12 ounces).

   b. Frank will spend eight hours a day growing potatoes (32 ounces).

   c. Rose will trade 5 ounces of meat for 15 ounces of potatoes.

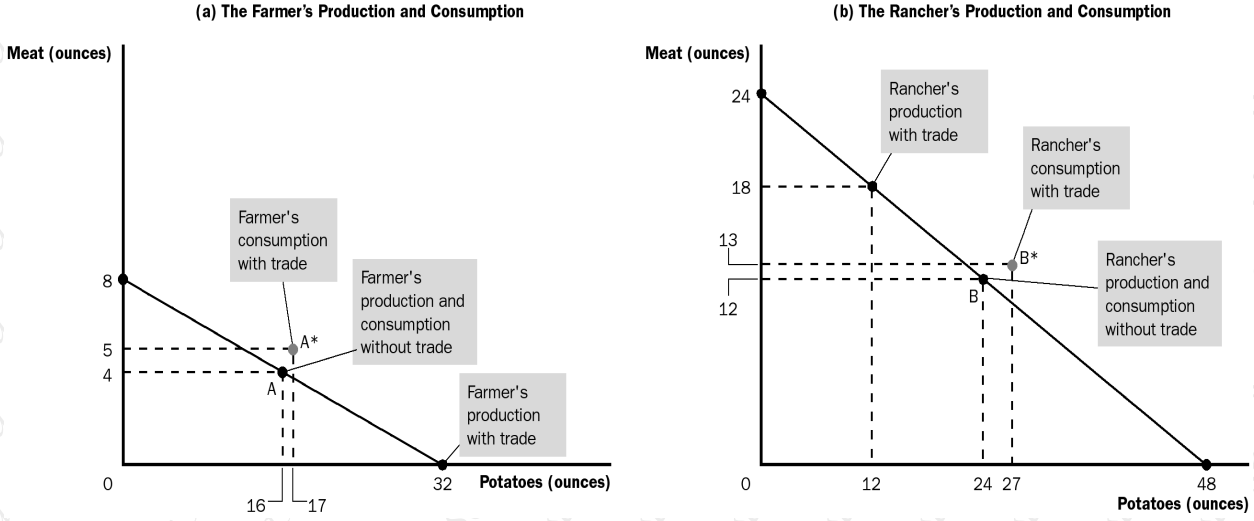
2. End results:

   a. Rose produces 18 ounces of meat and trades 5 ounces, leaving her with 13 ounces of meat. She also grows 12 ounces of potatoes and receives 15 ounces in the trade, leaving her with 27 ounces of potatoes.

   b. Frank produces 32 ounces of potatoes and trades 15 ounces, leaving him with 17 ounces. He also receives 5 ounces of meat in the trade with Rose.

3. In both cases, they are able to consume quantities of potatoes and meat after the trade that they could not reach before the trade.

Figure 5 How Trade Expands the Set of Consumption Opportunities



C. The Price of the Trade

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

2. In our example, Frank and Rose must trade at the rate of between 2 and 4 ounces of potatoes for each of meat.

D. Applications of Comparative Advantage

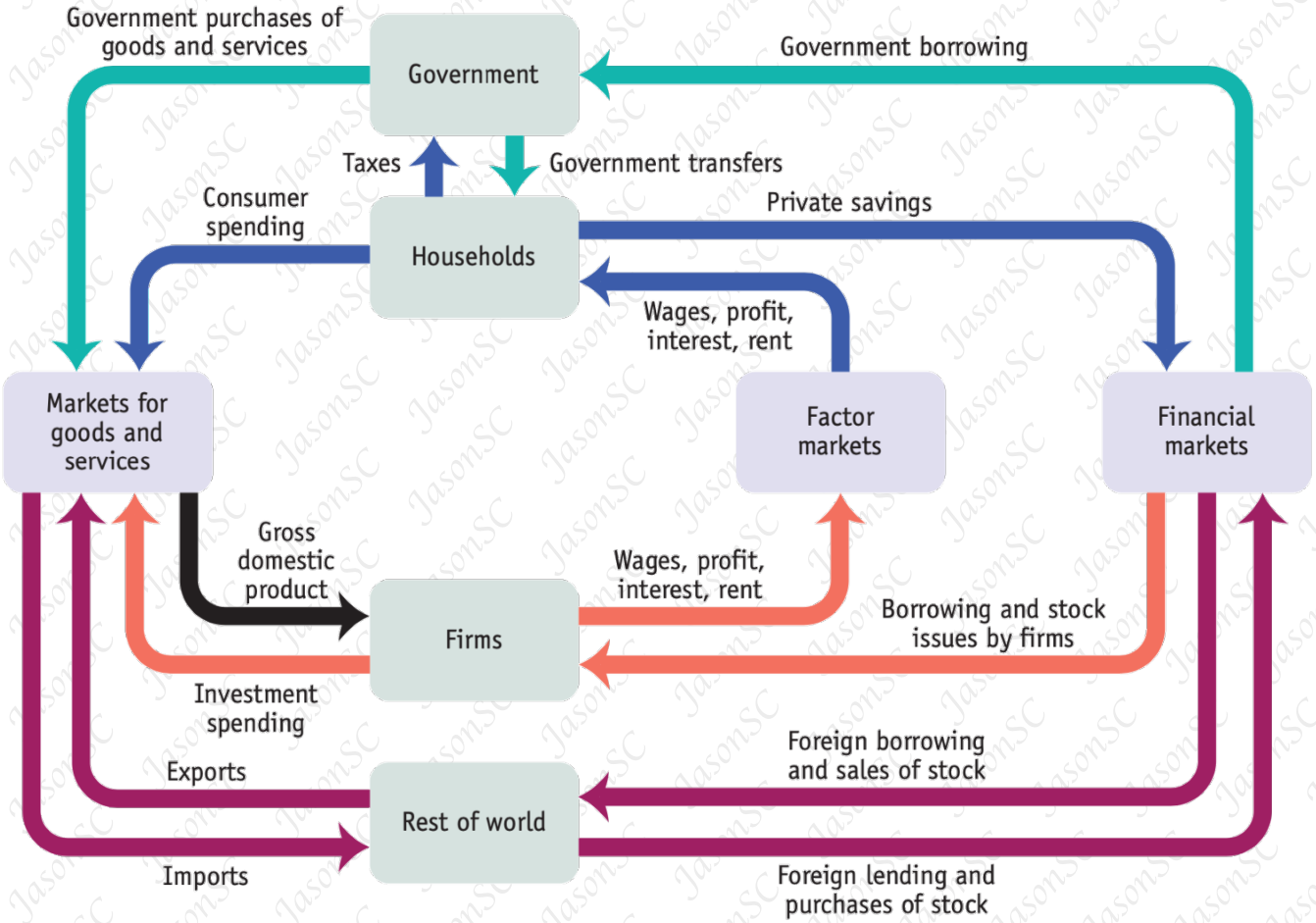
1. Definition of imports: goods produced abroad and sold domestically.

2. Definition of exports: goods produced domestically and sold abroad.

3. The principle of comparative advantage suggests that each good should be produced by the country with a comparative advantage in producing that good (smaller opportunity cost).

4. Through specialization and trade, countries can have more of all goods to consume.

Figure 6 The Expanded Circular-Flow Diagram:



M4: The Market Forces of Supply and Demand

I. Markets and Competition

A. What Is a Market?

1. Definition of market: a group of buyers and sellers of a particular good or service.

2. Markets can take many forms and may be organized (agricultural commodities) or less organized (ice cream)

B. What Is Competition?

1. Definition of competitive market: a market in which there are so many buyers and so many sellers that each has a negligible impact on the market price.

2. Each buyer knows that there are several sellers from which to choose. Sellers know that each buyer purchases only a small amount of the total amount sold.

C. In this unit, we will assume that markets are perfectly competitive.

1. Characteristics of a perfectly competitive market:

   a. The goods being offered for sale are exactly the same.

   b. The buyers and sellers are so numerous that no single buyer or seller has any influence over the market price.

2. Because buyers and sellers must accept the market price as given, they are often called "price takers."

II. Demand

A. The Demand Curve: The Relationship between Price and Quantity Demanded

1. Definition of quantity demanded: the amount of a good that buyers are willing and able to purchase.

2. One important determinant of quantity demanded is the price of the product.

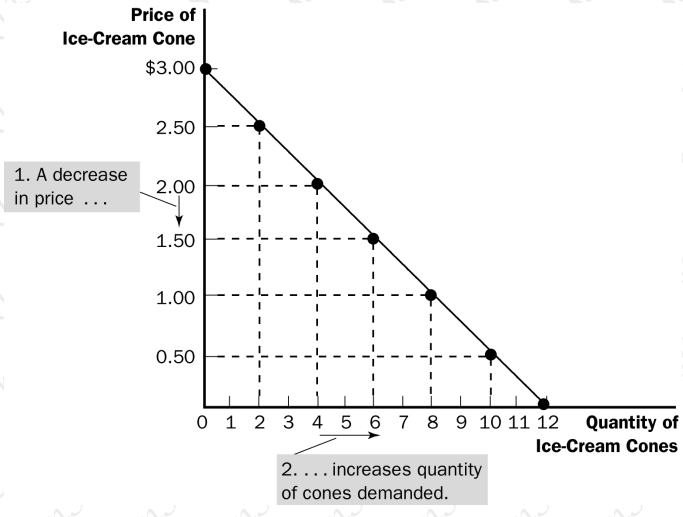
   a. Quantity demanded is negatively related to price. This implies that the demand curve is downward sloping.

   b. Definition of law of demand: the claim that, other things being equal, the quantity demanded of a good falls when the price of the good rises.

3. Definition of demand schedule: a table that shows the relationship between the price of a good and the quantity demanded.

Figure 6 Demand Schedule and Demand Curve

Price of Ice-Cream Cone	Quantity of Cones Demanded
$0.00	12
$0.50	10
$1.00	8
$1.50	6
$2.00	4
$2.50	2
$3.00	0



4. Definition of demand curve: a graph of the relationship between the price of a good and the quantity demanded.

   a. Price is generally drawn on the vertical axis.

   b. Quantity demanded is represented on the horizontal axis.

B. Market Demand versus Individual Demand

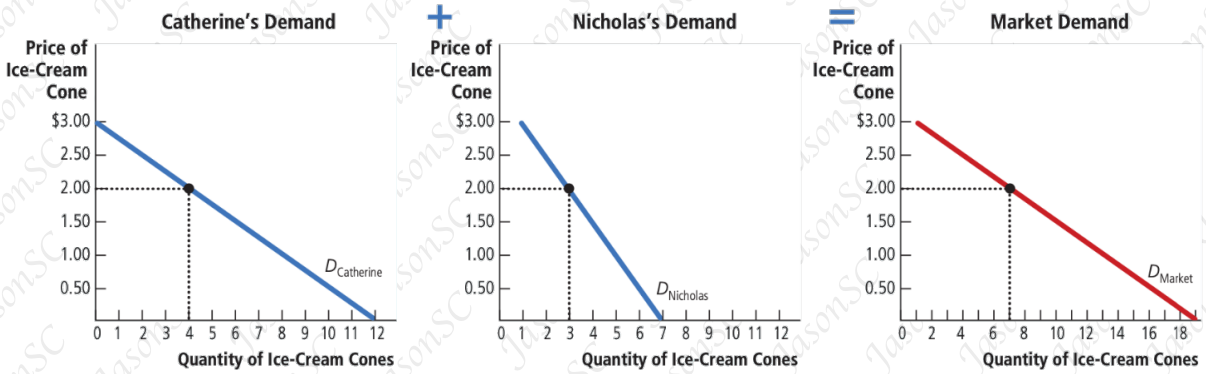
1. The market demand is the sum of all of the individual demands for a particular good or service.

2. The demand curves are summed horizontally—meaning that the quantities demanded are added up for each level of price.

3. The market demand curve shows how the total quantity demanded of a good varies with the price of the good, holding constant all other factors that affect how much consumers want to buy.

Figure 7 Market Demand and Individual Demand

Price of Ice-Cream Cone	Catherine		Nicholas		Market
$0.00	12	+	7	=	19 cones
0.50	10		6		16
1.00	8		5		13
1.50	6		4		10
2.00	4		3		7
2.50	2		2		4
3.00	0		1		1



C. Shifts in the Demand Curve

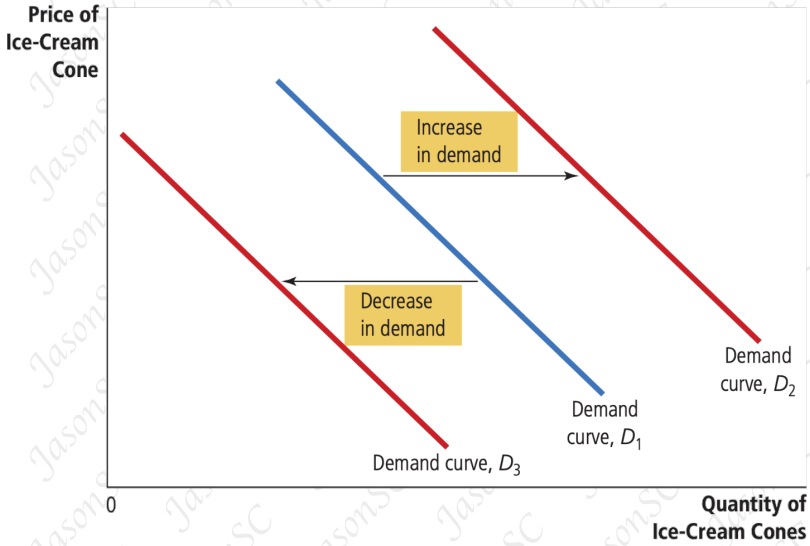
1. Because the market demand curve holds other things constant, it need not be stable over time.

2. If any of these other factors change, the demand curve will shift.

   a. An increase in demand is represented by a shift of the demand curve to the right.

   b. A decrease in demand is represented by a shift of the demand curve to the left.

Figure 8 Shifts in the Demand Curve



D. Determinants Can Cause the Demand Curve to Shift

1. Income

a. The relationship between income and quantity demanded depends on what type of good the product is.

b. Definition of normal good: a good for which, other things equal, an increase in income leads to an increase in demand.

c. Definition of inferior good: a good for which, other things equal, an increase in income leads to a decrease in demand.

2. Prices of Related Goods

a. Definition of substitutes: two goods for which an increase in the price of one good leads to an increase in the demand for the other.

b. Definition of complements: two goods for which an increase in the price of one good leads to a decrease in the demand for the other.

3. Tastes and Fashion

4. Expectations

a. Future income

b. Future prices

5. Number of Buyers

III. Supply

A. The Supply Curve: The Relationship between Price and Quantity Supplied

1. Definition of quantity supplied: the amount of a good that sellers are willing and able to sell.

   a. Quantity supplied is positively related to price. This implies that the supply curve will be upward sloping.

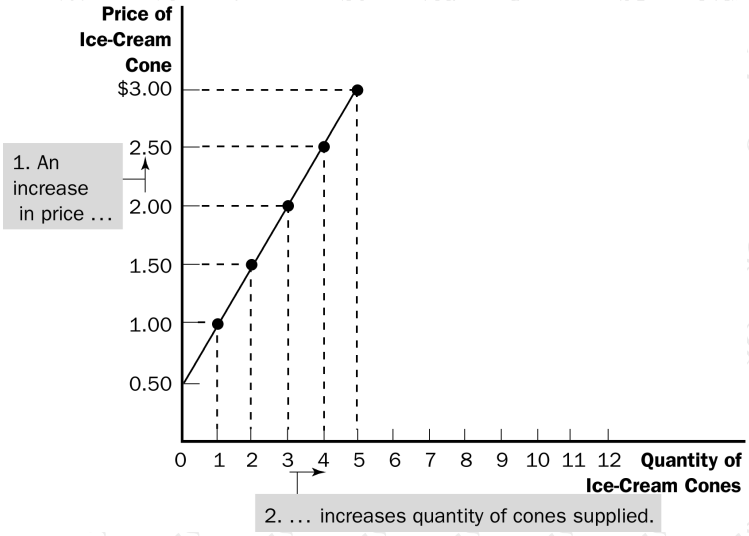
   b. Definition of law of supply: the claim that, other things equal, the quantity supplied of a good rises when the price of the good rises.

2. Definition of supply schedule: a table that shows the relationship between the price of a good and the quantity supplied.

3. Definition of supply curve: a graph of the relationship between the price of a good and the quantity supplied.

Figure 9 Supply Schedule and Supply Curve

Price of Ice-Cream Cone	Quantity of Cones Supplied
$0.00	0
$0.50	0
$1.00	1
$1.50	2
$2.00	3
$2.50	4
$3.00	5



B. Market Supply versus Individual Supply

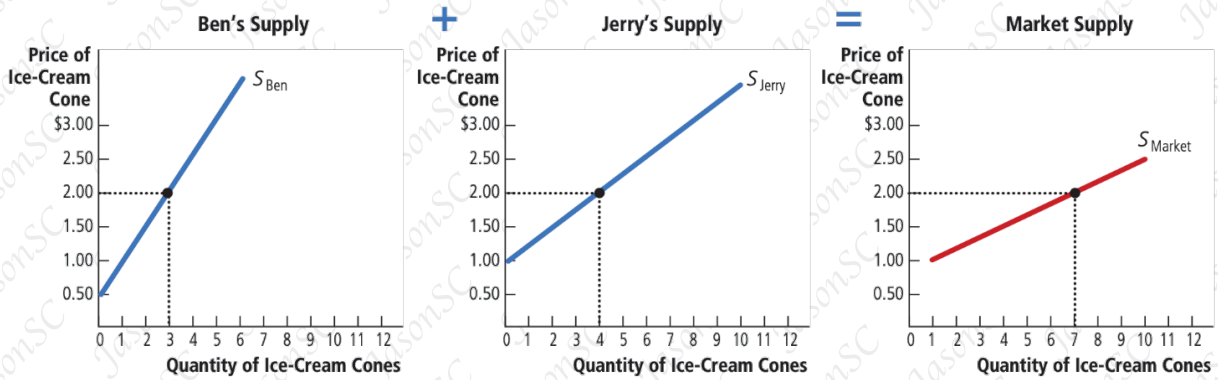
1. The market supply curve can be found by summing individual supply curves.

2. Individual supply curves are summed horizontally at every price.

3. The market supply curve shows how the total quantity supplied varies as the price of the good varies.

Figure 10 Market Supply and Individual Supply

Price of Ice-Cream Cone	Ben		Jerry		Market
$0.00	0	+	0	=	0 cones
0.50	0		0		0
1.00	1		0		1
1.50	2		2		4
2.00	3		4		7
2.50	4		6		10
3.00	5		8		13

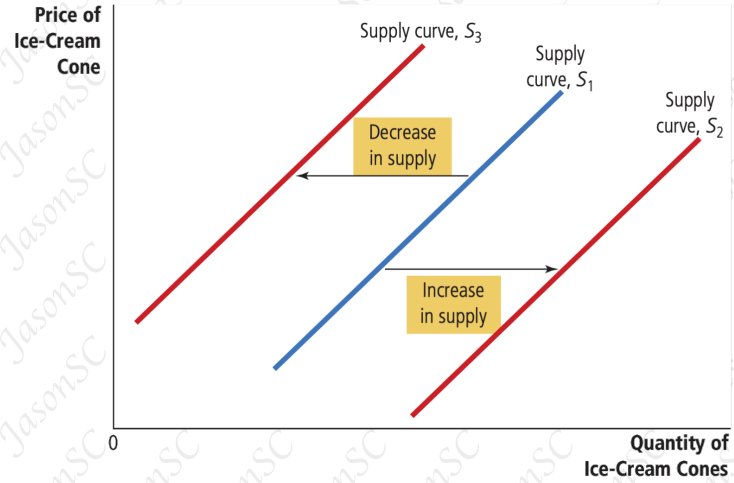


C. Shifts in the Supply Curve

1. Because the market supply curve holds other things constant, the supply curve will shift if any of these factors changes.

a. An increase in supply is represented by a shift of the supply curve to the right.
b. A decrease in supply is represented by a shift of the supply curve to the left.

Figure 11 Shifts in the Supply Curve



D. Determinants Can Cause the Supply Curve to Shift

1. Input Prices

2. Technology

3. Expectations

4. Number of Sellers

III. Supply and Demand Together

A. Equilibrium

1. The point where the supply and demand curves intersect is called the market's equilibrium.

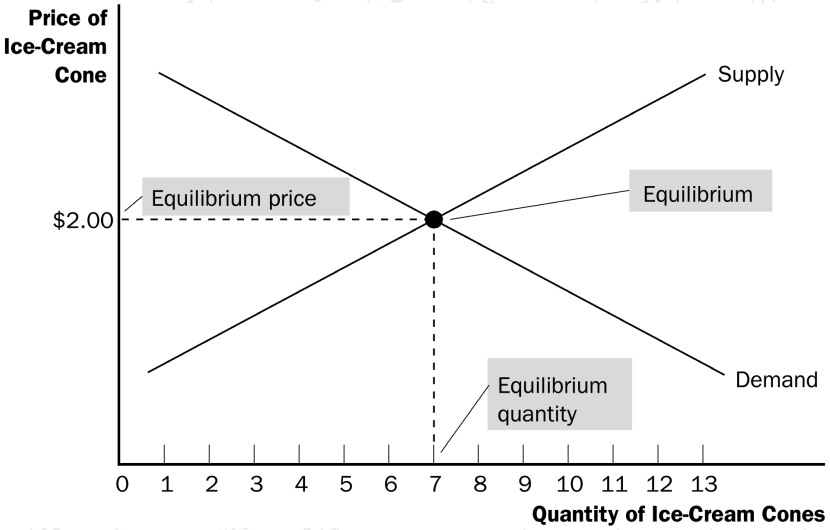
2. Definition of equilibrium: a situation in which the market price has reached the level at which quantity supplied equals quantity demanded.

3. Definition of equilibrium price: the price that balances quantity supplied and quantity demanded.

4. The equilibrium price is often called the "market-clearing" price because both buyers and sellers are satisfied at this price.

5. Definition of equilibrium quantity: the quantity supplied and the quantity demanded at the equilibrium price.

Figure 12 The Equilibrium of Supply and Demand



6. If the actual market price is higher than the equilibrium price, there will be a surplus of the good.

   a. Definition of surplus: a situation in which quantity supplied is greater than quantity demanded.

   b. To eliminate the surplus, producers will lower the price until the market reaches equilibrium.

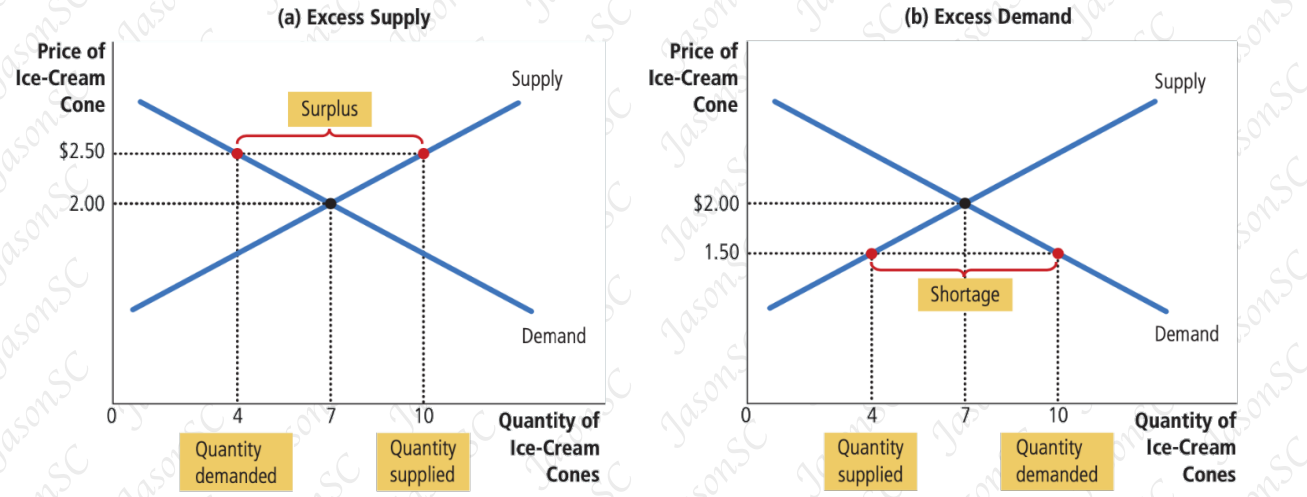
7. If the actual price is lower than the equilibrium price, there will be a shortage of the good.

   a. Definition of shortage: a situation in which quantity demanded is greater than quantity supplied.

   b. Sellers will respond to the shortage by raising the price of the good until the market reaches equilibrium.

8. Definition of the law of supply and demand: the claim that the price of any good adjusts to bring the supply and demand for that good into balance.

Figure 13 Markets Not in Equilibrium



B. Three Steps to Analyzing Changes in Equilibrium

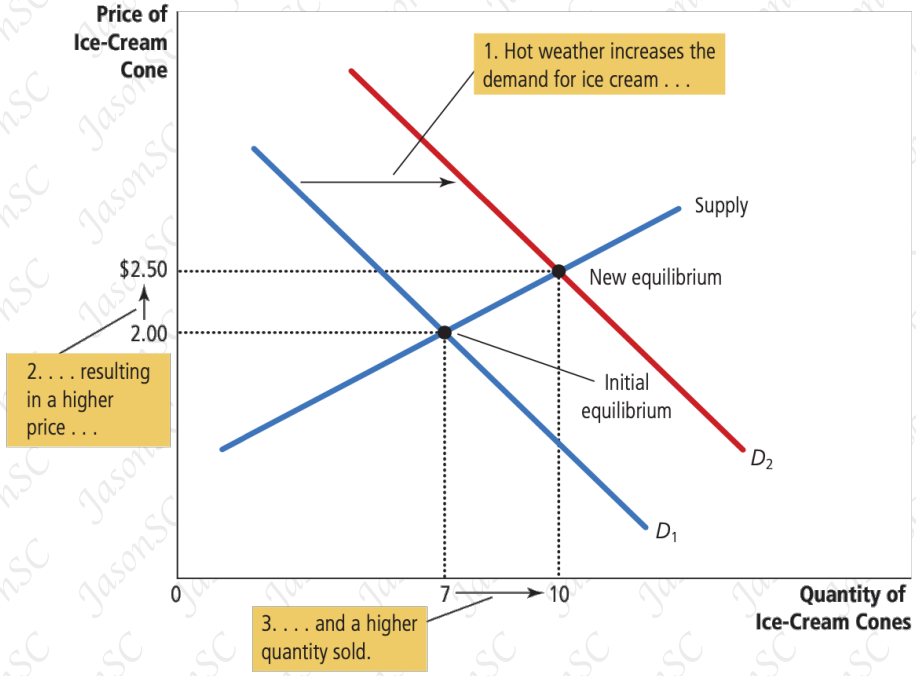
1. Decide whether the event shifts the supply or demand curve (or perhaps both).

2. Determine the direction in which the curve shifts.

3. Use the supply-and-demand diagram to see how the shift changes the equilibrium price and quantity.

C. Example: A change in market equilibrium due to a shift in demand—the effect of hot weather on the market for ice cream.

Figure 14 How an Increase in Demand Affects the Equilibrium



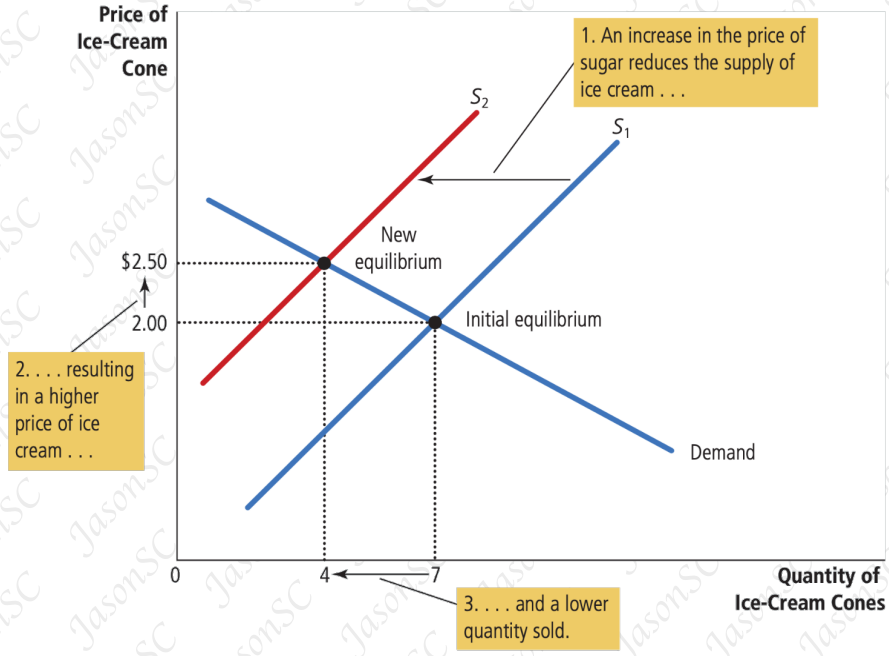
D. Shifts in Curves versus Movements along Curves

1. A shift in the demand curve is called a "change in demand." A shift in the supply curve is called a "change in supply."

2. A movement along a fixed demand curve is called a "change in quantity demanded." A movement along a fixed supply curve is called a "change in quantity supplied."

E. Example: A change in market equilibrium due to a shift in supply—the effect of a hurricane that destroys part of the sugar-cane crop and drives up the price of sugar.

Figure 15 How a Decrease in Supply Affects the Equilibrium



F. Example: Shifts in both supply and demand—the effect of hot weather and a hurricane that destroys part of the sugar cane crop.

Figure 16 A Shift in Both Supply and Demand