Markets in Perfect Competition (I)

"There is always an opportunity created by a new demand …"

Supply and Demand: A story of blue jeans

- You may have been surprised by the increase in the price of blue jeans in 2011.
- Cotton, an input of this cloth, was three times the price that it was two years earlier.
- Why? The supply of cotton had fallen because of poor weather and the demand for cotton had risen because consumers increased their purchases (crisis recovery).
- Both the increase in demand and the decrease in supply contributed to the increase in the price of cotton.

Topic 3

What you will learn in Topic 3

1. What a **competitive market** is and how it is described by the **supply and demand model**
2. The **demand curve**
3. The difference between **movements along a curve** and **shifts of a curve**
4. The **supply curve**
5. How the **supply and demand curves determine a market's equilibrium price and quantity**
6. **A shortage** or **surplus** and **how price moves the market** back to equilibrium
7. And more …

A Model of Competitive Market

- **In a competitive market:**
  - There are *many* buyers and sellers.
  - Sellers offer the *same* good or service
  - No individual's actions have a noticeable effect on the price at which the good or service is sold.
  - In other words: *no one party can influence price*.
- **This type of market behavior is described by supply and demand (in a competitive market)**

Topic 3

The Supply and Demand Model …
(or how a competitive market works)

• There are five key elements in the supply and demand model:

- The *demand curve*
- The *supply curve*
- The set of factors that causes the demand curve to shift, and the set of factors that causes the supply curve to shift
- The market *equilibrium*
- The way the equilibrium price changes when the supply or demand curves shift

The Demand Curve

Understanding Shifts of the Demand Curve

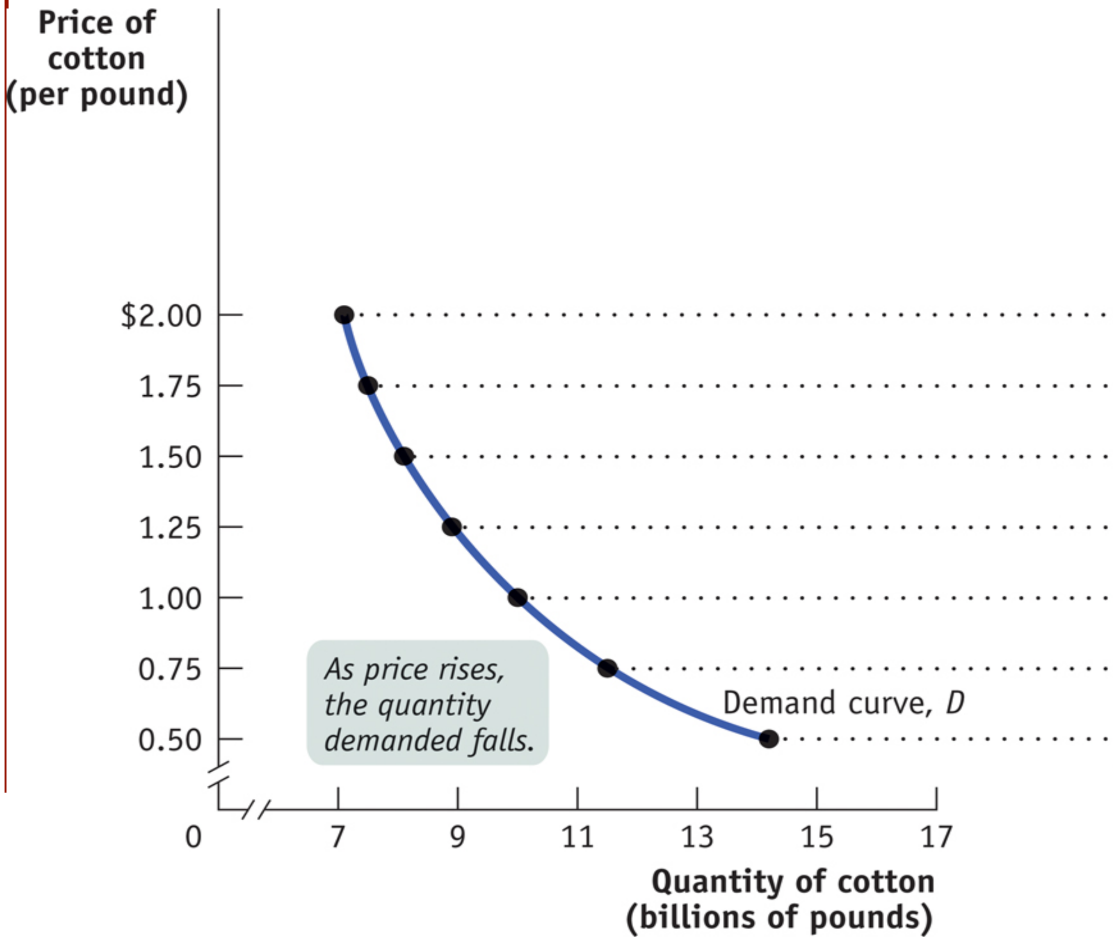
- **A *demand*** *curve* is the graphical representation of the demand schedule**.**

  - It shows how much of a good or service consumers want to buy at any given price.

- **Law of Demand:** A higher a price for a good, *other things equal*, leads people to demand smaller quantities of that good.

The Demand Curve

Understanding Shifts of the Demand Curve

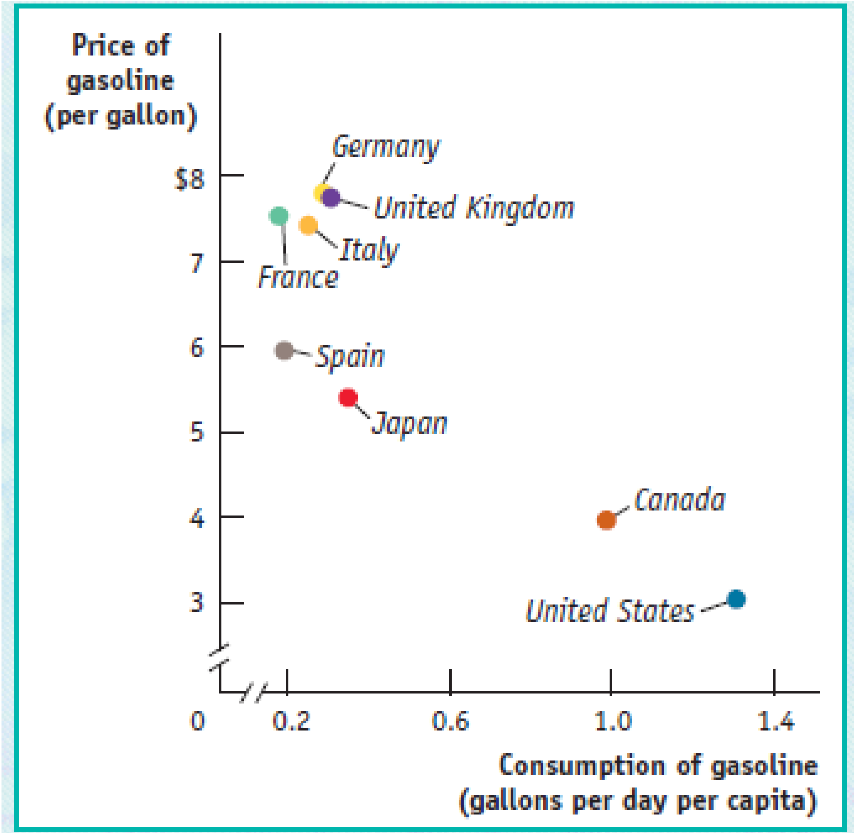


Demand Schedule for Cotton	
Price of cotton (per pound)	Quantity of cotton demanded (billions of pounds)
$2.00	7.1
1.75	7.5
1.50	8.1
1.25	8.9
1.00	10.0
0.75	11.5
0.50	14.2

The Demand Curve

An example

- Because of high taxes, gasoline and diesel fuel are more than twice as expensive in most European countries as in the United States.



The Demand Curve

An Increase in Demand (I)

- An increase in the population and other factors generate an increase in demand—*a rise in the quantity demanded at any given price.*

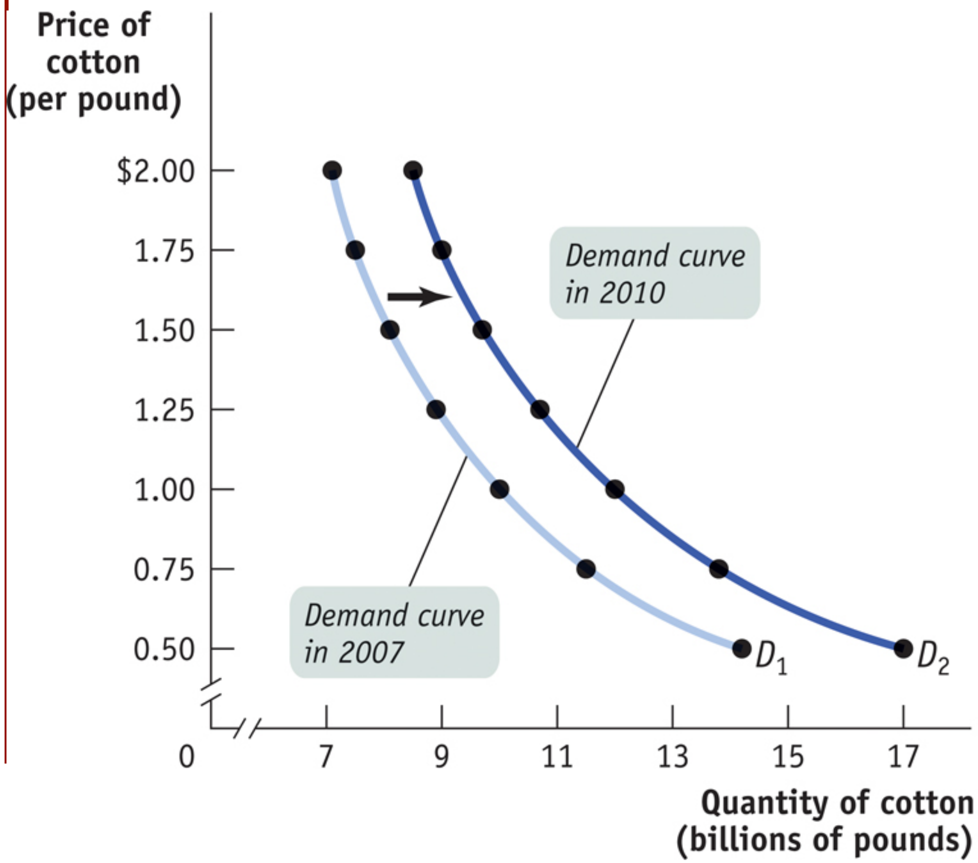
- This is represented by the two demand schedules—one showing demand in 2007, before the rise in population, and the other showing demand in 2010, after the rise in population.

Demand Schedules for Cotton

Price of cotton (per pound)	Quantity of cotton demanded (billions of pounds)	
	in 2007	in 2010
$2.00	7.1	8.5
1.75	7.5	9.0
1.50	8.1	9.7
1.25	8.9	10.7
1.00	10.0	12.0
0.75	11.5	13.8
0.50	14.2	17.0

The Demand Curve

An Increase in Demand (II)

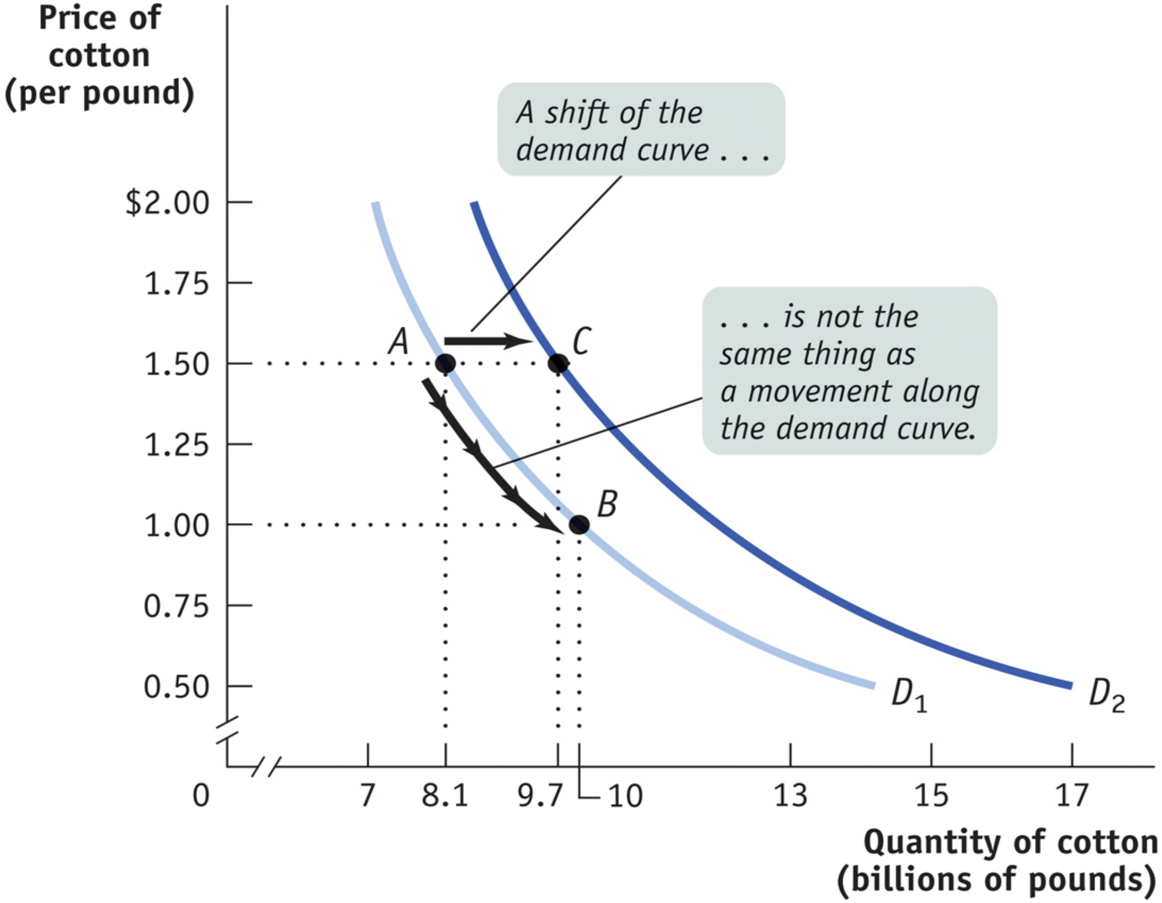


Demand Schedules for Cotton

Price of cotton (per pound)	Quantity of cotton demanded (billions of pounds) in 2007	in 2010
$2.00	7.1	8.5
1.75	7.5	9.0
1.50	8.1	9.7
1.25	8.9	10.7
1.00	10.0	12.0
0.75	11.5	13.8
0.50	14.2	17.0

The Demand Curve

Movement Along the Demand Curve



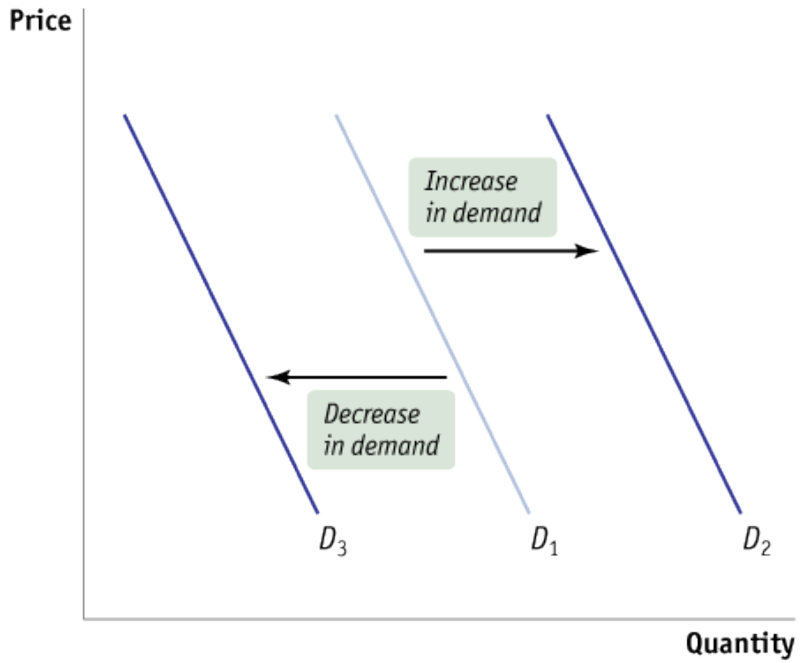
The Demand Curve

Understanding Shifts of the Demand Curve

• What causes a demand curve to shift?

• There are four principal factors (though, there are other possible causes)

- Changes in the prices of related goods
- Changes in income
- Changes in tastes (preferences)
- Changes in expectations
- Changes in the number of consumers



The Demand Curve

Changes in the Prices of Related Goods

• Two goods are **substitutes** if a fall in the price of one of the goods makes consumers less willing to buy the other good.

• Two goods are **complements** if a fall in the price of one good makes people more willing to buy the other good.

Changes in Income

• When a rise in income increases the demand for a good —the normal case— we say that the good is a **normal good.**

• When a rise in income decreases the demand for a good, it is an **inferior good**.

The Demand Curve

Changes in Tastes

• They are changes in the preferences (fashion, tastes, etc)

Changes in Expectations

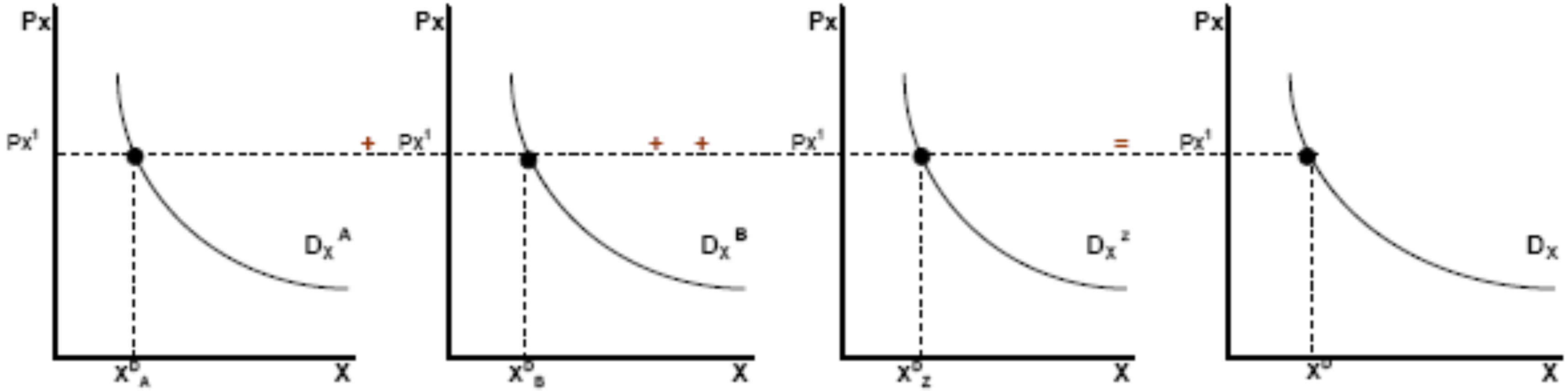
• If you expect to rise (reduce) your income in the future you will borrow (save) today and increase (decrease) your demand for some goods.

Topic 3

Getting the Demand Curve

Horizontal Addition

- **Horizontal Addition** is the method by which we can combine individual demand curves to find the total market demand curve.

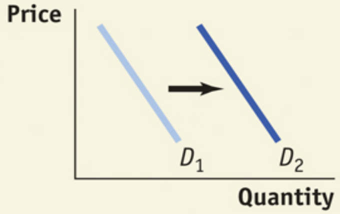
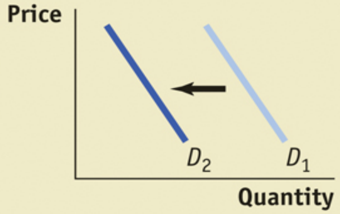
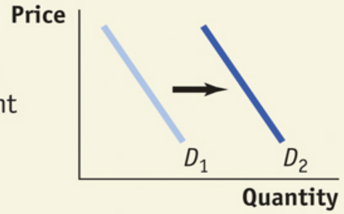
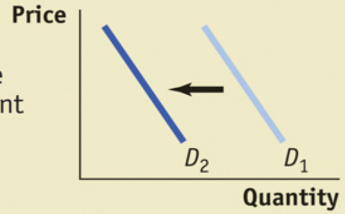
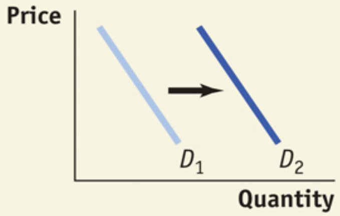
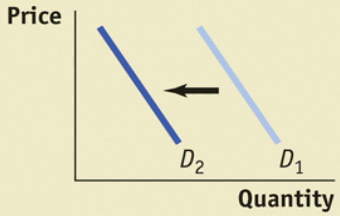


$$X_1^D = X_A^D + X_B^D + X_C^D + \ldots + X_Z^D\ .$$

Factors that Shift Demand

Some examples (I)

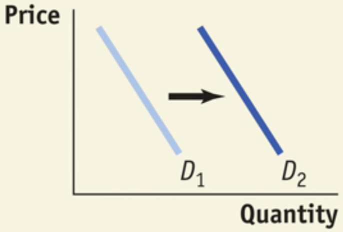
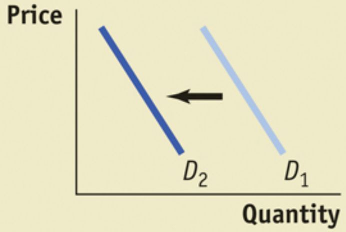
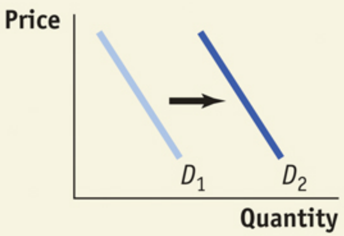
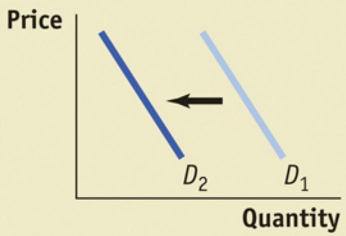
TABLE 3-1 Factors That Shift Demand

When this happens . . .	. . . demand increases		But when this happens . . .	. . . demand decreases	
When the price of a substitute rises . . .		. . . demand for the original good increases.	When the price of a substitute falls . . .		. . . demand for the original good decreases.
When the price of a complement falls . . .		. . . demand for the original good increases.	When the price of a complement rises . . .		. . . demand for the original good decreases.
When income rises . . .		. . . demand for a normal good increases.	When income falls . . .		. . . demand for a normal good decreases.

Factors that Shift Demand

Some examples (II)

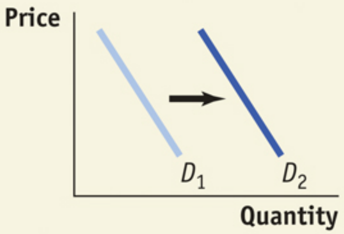
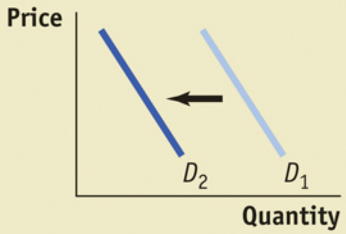
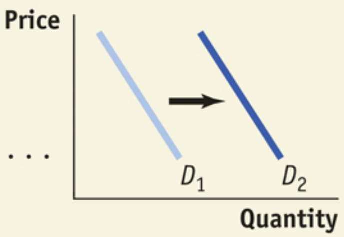
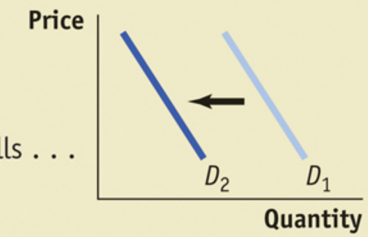
TABLE 3-1 Factors That Shift Demand

When this happens . . .	. . . demand increases		But when this happens . . .	. . . demand decreases	
When income falls . . .		. . . demand for an inferior good increases.	When income rises . . .		. . . demand for an inferior good decreases.
When tastes change in favor of a good . . .		. . . demand for the good increases.	When tastes change against a good . . .		. . . demand for the good decreases.

Factors that Shift Demand

Some examples (III)

TABLE 3-1 Factors That Shift Demand

When this happens . . .	. . . demand increases		But when this happens . . .	. . . demand decreases	
When the price is expected to rise in the future . . .	 	. . . demand for the good increases today.	When the price is expected to fall in the future . . .	 	. . . demand for the good decreases today.
When the number of consumers rises . . .	 	. . . market demand for the good increases.	When the number of consumers falls . . .	 	. . . market demand for the good decreases.

The Demand Curve: Check your understanding

Explain whether the following events represents (a) a shift of the demand curve or (b) a movement along the demand curve

A. A store owner finds that customers are willing to pay more for umbrellas on rainy days.

B. When Z Telecom, a long-distance telephone service provider, offered reduced rate on weekends, its volume of weekend calling increased sharply.

C. People buy more long-stem roses the week of Valentine's Day, even though the prices are higher than at other times during the year.

D. A sharp rise in the price of gasoline leads many commuters to join carpools in order to reduce their gasoline purchases.

The Supply Curve

Introduction (I)

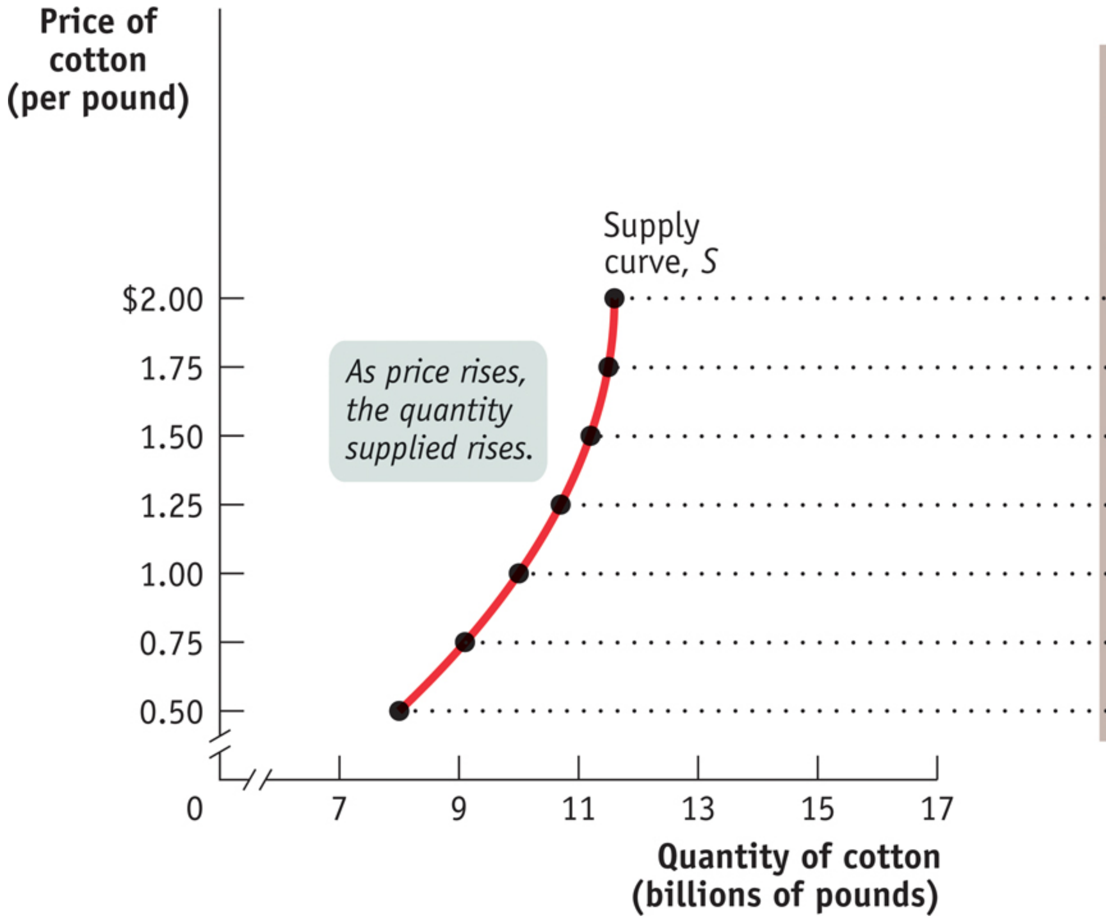
- A *supply curve* is the graphical representation of the supply schedule.

- The supply curve shows how much of a good or service producers are willing to sell at any given price.

- Law of Supply: *A higher price* for a good, *other things equal*, the greater the quantity of that good is produced.

The Supply Curve

Introduction (II)



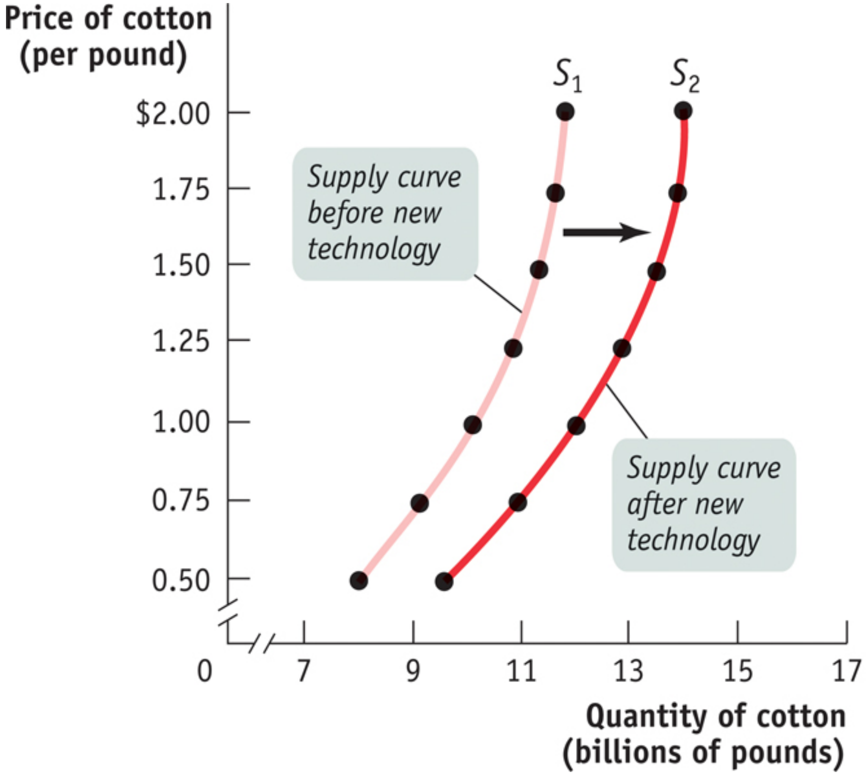
Supply Schedule for Cotton

Price of cotton (per pound)	Quantity of cotton supplied (billions of pounds)
$2.00	11.6
1.75	11.5
1.50	11.2
1.25	10.7
1.00	10.0
0.75	9.1
0.50	8.0

Topic 3

The Supply Curve

An Increase in Supply



Supply Schedules for Cotton

Price of cotton (per pound)	Quantity of cotton supplied (billions of pounds)	
	Before new technology	After new technology
$2.00	11.6	13.9
1.75	11.5	13.8
1.50	11.2	13.4
1.25	10.7	12.8
1.00	10.0	12.0
0.75	9.1	10.9
0.50	8.0	9.6

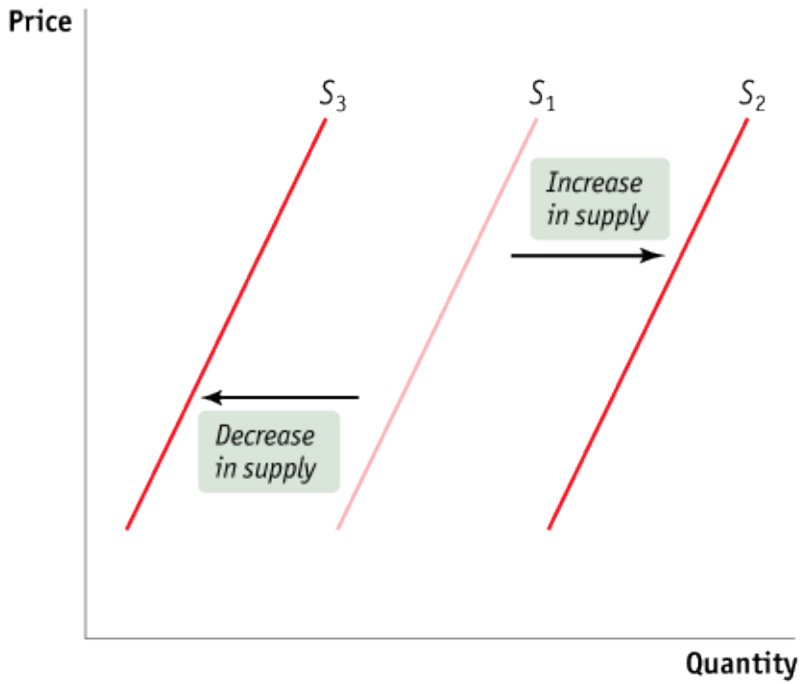
The Supply Curve

Understanding Shifts of the Supply Curve

• What causes a supply curve to shift?

• Shifts of supply curves are mainly the result of four factors (though, as in the case of demand, there are other possible causes):

- Changes in input prices
- Changes in technology
- Changes in expectations
- Changes in the number of firms



The Supply Curve

Changes in Input Prices

• Labor's price (wages), the price of the capital, etc …

Changes in Technology

• When a better technology becomes available that reduces the cost of production, supply increases, and the supply curve shifts to the right (due to the shift upwards of the production function).

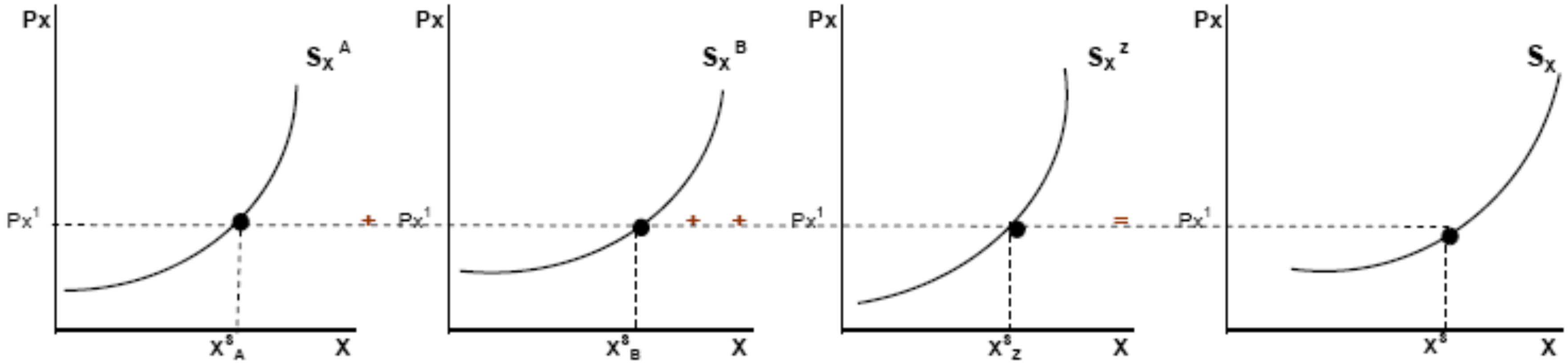
Changes in Expectations

• An expectation that the price of a good will be higher in the future causes supply to decrease today, but an expectation that the price of a good will be lower in the future causes supply to increase today.

Getting the Supply Curve

Horizontal Addition (# of firms)

• **Horizontal Addition** is the method by which we can combine individual supply curves to find the total market supply curve.

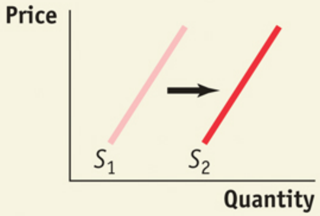
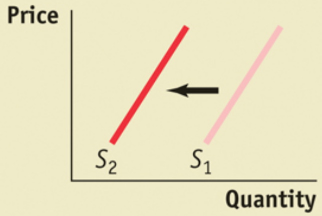
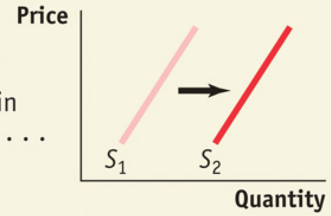
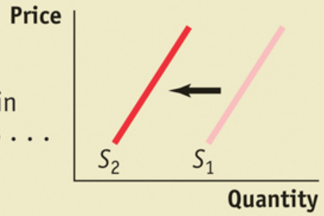
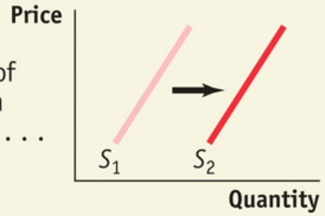
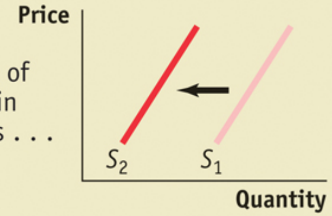


$$X_1^S = X_A^S + X_B^S + X_C^S + \ldots + X_Z^S .$$

Factors that Shift Supply

Some examples (I)

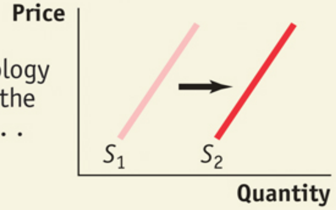
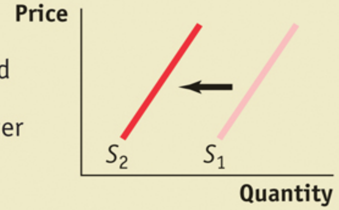
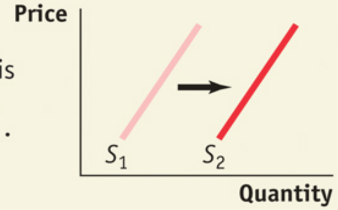
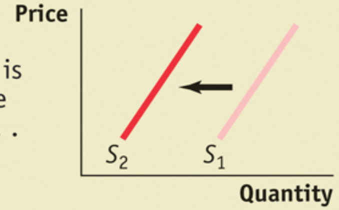
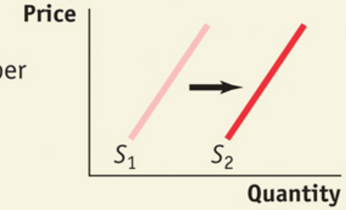
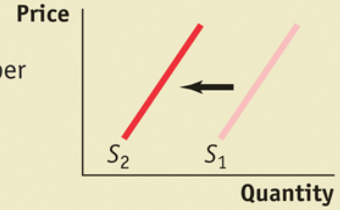
TABLE 3-2 Factors That Shift Supply

When this happens . . .	. . . supply increases		But when this happens . . .	. . . supply decreases	
When the price of an input falls . . .		. . . supply of the good increases.	When the price of an input rises . . .		. . . supply of the good decreases.
When the price of a substitute in production falls . . .		. . . supply of the original good increases.	When the price of a substitute in production rises . . .		. . . supply of the original good decreases.
When the price of a complement in production rises . . .		. . . supply of the original good increases.	When the price of a complement in production falls . . .		. . . supply of the original good decreases.

Factors that Shift Supply

Some examples (II)

TABLE **3-2** Factors That Shift Supply

When this happens . . .		. . . supply increases	But when this happens . . .		. . . supply decreases
When the technology used to produce the good improves . . .		. . . supply of the good increases.	When the best technology used to produce the good is no longer available . . .		. . . supply of the good decreases.
When the price is expected to fall in the future . . .		. . . supply of the good increases today.	When the price is expected to rise in the future . . .		. . . supply of the good decreases today.
When the number of producers rises . . .		. . . market supply of the good increases.	When the number of producers falls . . .		. . . market supply of the good decreases.

Topic 3

The Supply Curve: Check your understanding

Explain whether the following events represents (a) a shift of the demand curve or (b) a movement along the demand curve

A. More homeowners put their houses up for sale during a real estate boom that causes prices to rise.

B. Many strawberry farmers open temporary roadside stands during harvest season, even though prices are usually low at that time.

C. Immediately after the school year begins, fast-food chains must raise wages to attract workers.

D. Many construction workers temporarily move to areas that have suffered hurricane damage, lured by higher wages offered.

E. Since new technologies have made it possible to build larger ships (which are cheaper to run per passenger), Caribbean cruise lines have offered more berths, at lower prices, than before.

Topic 3

KEY TERMS

Supply and demand model
Demand curve
Quantity demanded
Shift of the demand curve
Substitutes
Complements
Normal good
Inferior good
Horizontal addition
Quantity supplied
Supply curve
Shift of the supply curve