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**Course „Economics and Business Management“  
Prof. Dr. Marius Dannenberg**

**Chapter 4**

**Supply, Demand, and Market Equilibrium**

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**Syllabus: “Economics and Business Management”**

**Chapter 1 Introduction – Understanding the contemporary economics and business environment**

**Chapter 2 Key Principles of Economics**

**Chapter 3 Markets and Government in the Global Economy**

 **Chapter 4 Supply, Demand, and Market Equilibrium**

**Chapter 5 Understanding Entrepreneurship and Ownership**

**Chapter 6 Conducting Business Ethically and Responsibly**

**Chapter 7 Understanding the Business of Managing**

**Chapter 8 Organizing the Business Enterprise**

**Chapter 9 Understanding Principles of Marketing**

**Chapter 10 Developing and Pricing Products**

**Chapter 11 Designing and Managing Marketing Channels**

## The Basic Decision-Making Units

- A *firm* is an organization that transforms resources (inputs) into products (outputs). Firms are the primary producing units in a market economy.
- An *entrepreneur* is a person who organizes, manages, and assumes the risks of a firm, taking a new idea or a new product and turning it into a successful business.
- *Households* are the consuming units in an economy.

## Perfectly Competitive Market

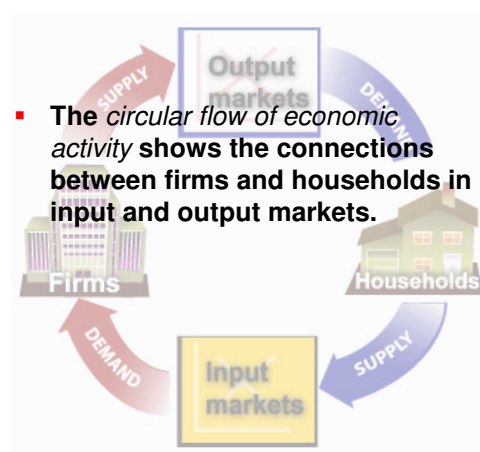
- A key assumption in the study of supply and demand is that all input and output markets are perfectly competitive.
- The model of supply and demand will be used to explain how a perfectly competitive market operates.
- A perfectly competitive market is a market with a very large number of firms, each of which produces the same standardized product and is so small that it does not affect the market price of the good it produces.

## Perfect Knowledge

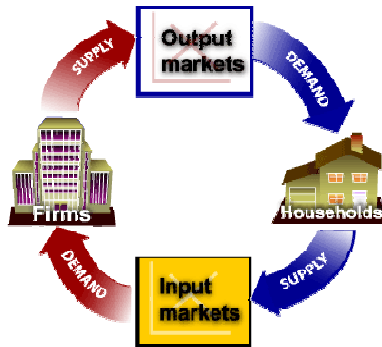
We also assume that households and firms possess all the information they need to make market choices:

- *Perfect knowledge* is the assumption that households possess a knowledge of the qualities and prices of everything available in the market, and that firms have all available information concerning wage rates, capital costs, and output prices.

## The Circular Flow of Economic Activity



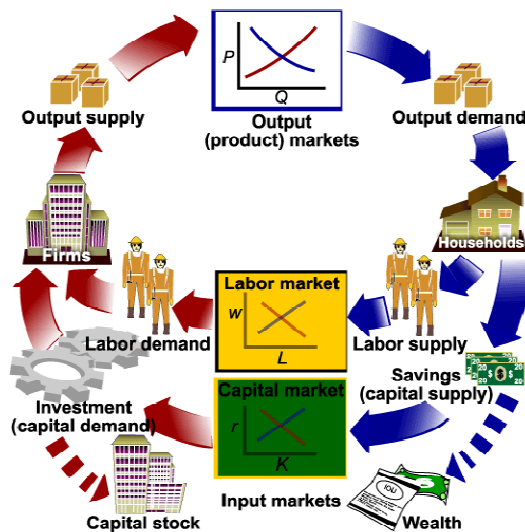
### Input Markets and Output Markets



- *Output, or product, markets are the markets in which goods and services are exchanged.*
- *Input markets are the markets in which resources—labor, capital, and land—used to produce products, are exchanged.*

- Payments flow in the opposite direction as the physical flow of resources, goods, and services (counterclockwise).

### Firms and Household Decisions



## Input Markets

Input markets include:

- The *labor market*, in which households supply work for wages to firms that demand labor.
- The *capital market*, in which households supply their savings, for interest or for claims to future profits, to firms that demand funds to buy capital goods.
- The *land market*, in which households supply land or other real property in exchange for rent.

## Determinants of Household Demand

A household's decision about the quantity of a particular output to demand depends on:

- The *price of the product* in question.
- The *income* available to the household.
- The household's amount of *accumulated wealth*.
- The *prices of related products* available to the household.
- The household's *tastes and preferences*.
- The household's *expectations* about future income, wealth, and prices.

## Quantity Demanded

- *Quantity demanded* is the amount (number of units) of a product that a household would buy in a given time period if it could buy all it wanted at the current market price.

## The Demand Curve

Here is a list of variables that affect a consumer's decision, using the pizza market as an example:

- The price of the product, for example, the price of pizza
- Consumer income
- The price of substitute goods such as tacos or sandwiches
- The price of complementary goods such as beer or lemonade
- Consumer tastes and advertising
- Consumer expectations about future prices

## The Individual Demand Curve and the Law of Demand

Price (\$)	Quantity of pizzas per month
2	13
4	10
6	7
8	4
10	1

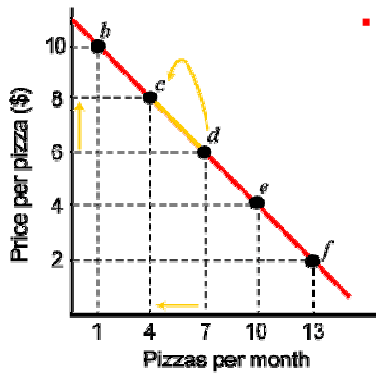
- The demand schedule is a table of numbers that shows the relationship between price and quantity demanded by a consumer, *ceteris paribus* (everything else held fixed).

## The Individual Demand Curve and the Law of Demand



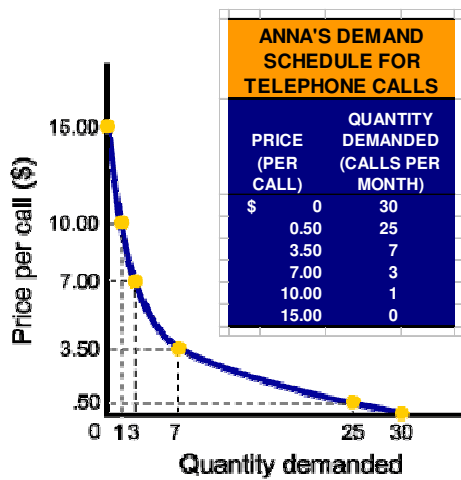
- The individual demand curve shows the relationship between the price of a good and the quantity that a single consumer is willing to buy, or quantity demanded.
- The law of demand states that the higher the price, the smaller the quantity demanded, *ceteris paribus* (everything else held fixed).

### The Individual Demand Curve and the Law of Demand



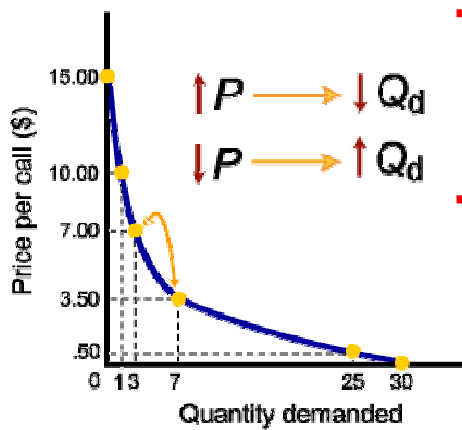
- A change in quantity demanded is a change in the amount of a good demanded resulting from a change in the price of the good, represented graphically by a movement along the demand curve.

### The Demand Curve: Second Example



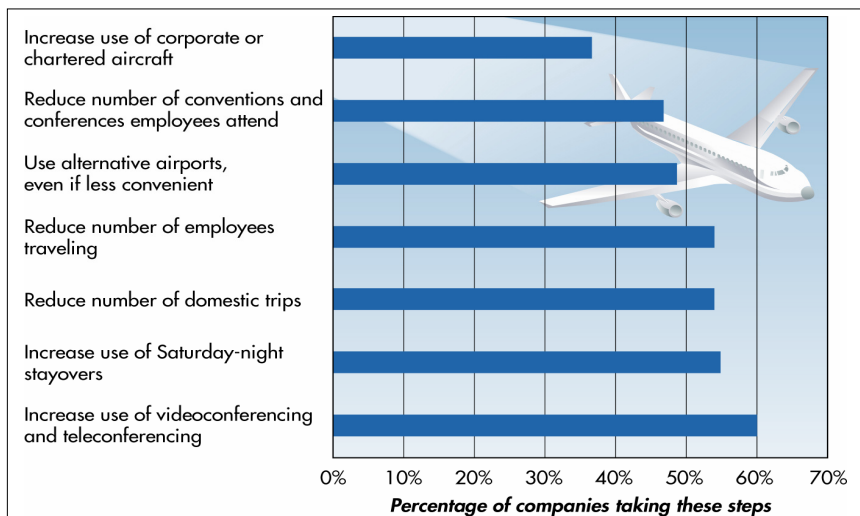
- The *demand curve* is a graph illustrating how much of a given product a household would be willing to buy at different prices.

### The Law of Demand



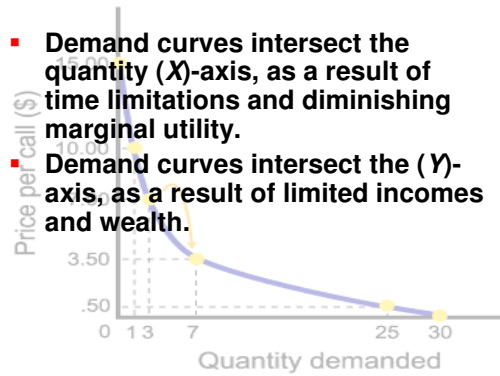
- The *law of demand* states that there is a **negative, or inverse, relationship** between price and the quantity of a good demanded and its price.
- This means that demand curves slope downward.

### Effects of Higher Air Fare on Demand



### Other Properties of Demand Curves

- Demand curves intersect the quantity (X)-axis, as a result of time limitations and diminishing marginal utility.
- Demand curves intersect the (Y)-axis, as a result of limited incomes and wealth.



### Income and Wealth

- *Income* is the sum of all households wages, salaries, profits, interest payments, rents, and other forms of earnings in a given period of time. It is a *flow* measure.
- *Wealth*, or *net worth*, is the total value of what a household owns minus what it owes. It is a *stock* measure.

### Related Goods and Services

- *Normal Goods* are goods for which demand goes up when income is higher and for which demand goes down when income is lower.
- *Inferior Goods* are goods for which demand falls when income rises.
- *Substitutes* are goods that can serve as replacements for one another; when the price of one increases, demand for the other goes up. *Perfect substitutes* are identical products.
- *Complements* are goods that “go together”; a decrease in the price of one results in an increase in demand for the other, and vice versa.

### The Substitution Effect

- The substitution effect is the change in consumption resulting from a change in the price of one good relative to the price of other goods.
- The lower the price of a good, the smaller the sacrifice associated with the consumption of that good.

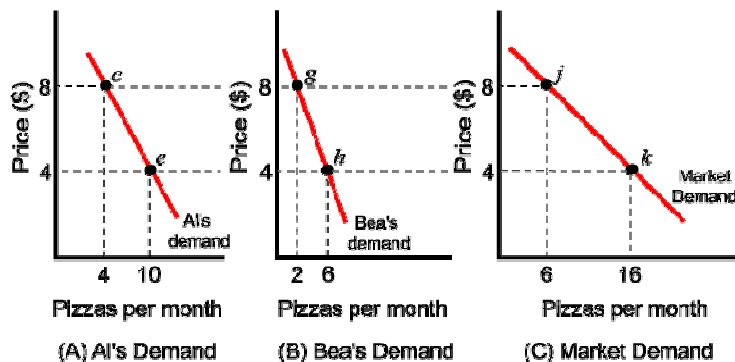
### The Income Effect

- The income effect describes the change in consumption resulting from an increase in the consumer’s real income, or the income in terms of the goods the money can buy.
- Real income is the consumer’s income measured in terms of the goods it can buy.

**From Individual to Market Demand**



**From Individual to Market Demand**



## The Supply Curve

Here are the variables that affect the decisions of sellers, using the market for pizza as an example:

- The price of the product, such as the price of pizza
- The cost of the inputs used to produce the product, such as the wage paid to workers, the cost of electricity, and the cost of equipment
- The state of production technology, such as the knowledge used in making pizza

## The Supply Curve

Here are the variables that affect the decisions of sellers, using the market for pizza as an example:

- The number of producers, such as the number of pizzerias
- Producer expectations about future prices
- Taxes or subsidies from the government

## The Marginal Principle and the Output Decision

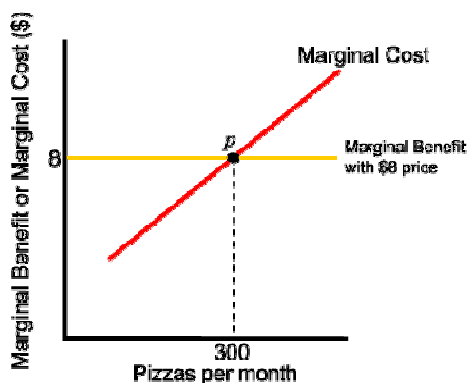
- The decision to produce a given quantity of output is based on the marginal principle.

### **Marginal PRINCIPLE**

Increase the level of an activity if its marginal benefit exceeds its marginal cost; reduce the level of an activity if its marginal cost exceeds its marginal benefit. If possible, pick the level at which the activity's marginal benefit equals its marginal cost.



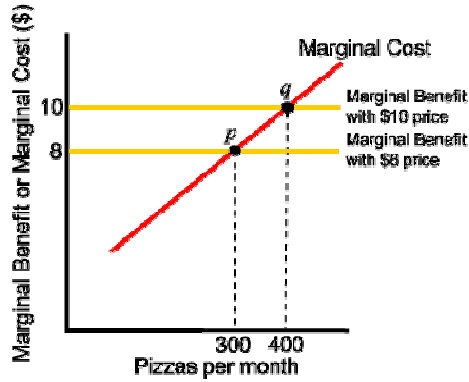
## The Marginal Principle and the Output Decision



- The marginal benefit curve is horizontal at the market price.

- To satisfy the marginal principle, the firm produces the quantity at which the marginal benefit equals the marginal cost.

### The Marginal Principle and the Output Decision



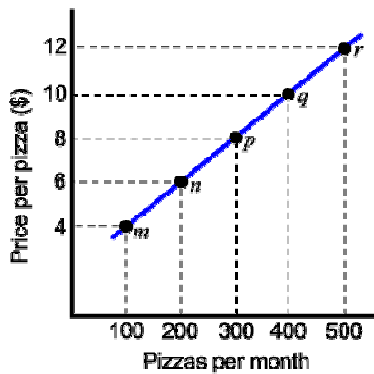
- An increase in the price shifts the marginal benefit curve upward and increases the quantity at which the marginal benefit equals the marginal cost.

### Individual Supply and the Law of Supply

<i>Nora's Schedule for Pizza</i>	
<i>Price (\$)</i>	<i>Quantity of pizzas per month</i>
4	100
6	200
8	300
10	400
12	500

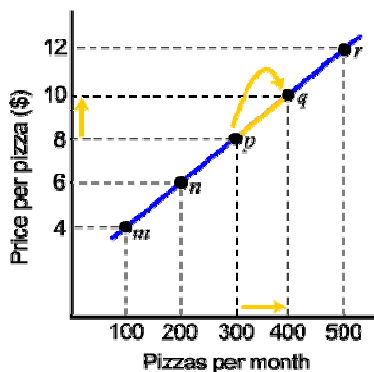
- A firm's supply schedule is a table of numbers that shows the relationship between price and quantity supplied, ceteris paribus (everything else held fixed).

### Individual Supply and the Law of Supply



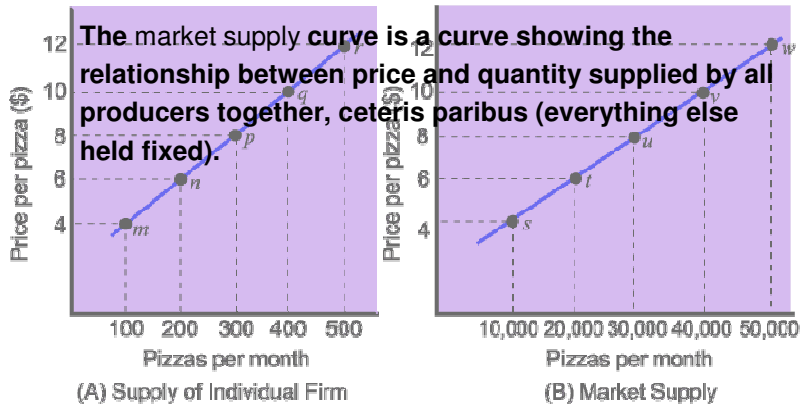
- The individual supply curve shows the relationship between the price and quantity supplied by a producer, ceteris paribus (everything else held fixed).
- The law of supply states that the higher the price, the larger the quantity supplied, ceteris paribus (everything else held fixed).

### Individual Supply and the Law of Supply

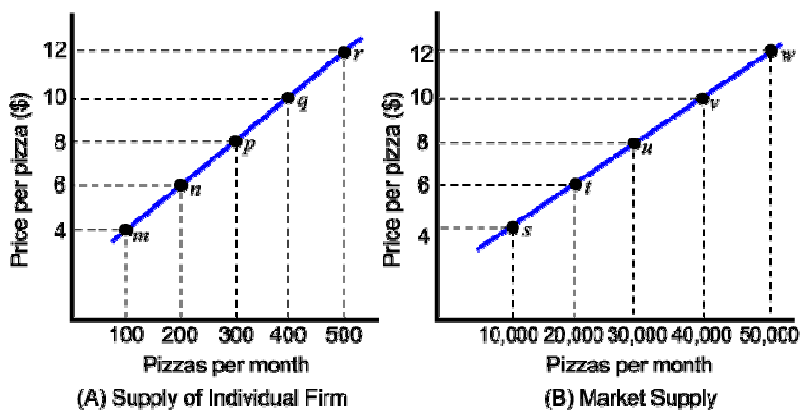


- A change in quantity supplied is a change in the amount of a good supplied resulting from a change in the price of the good, represented graphically by a movement along the supply curve.

### Individual Supply to Market Supply

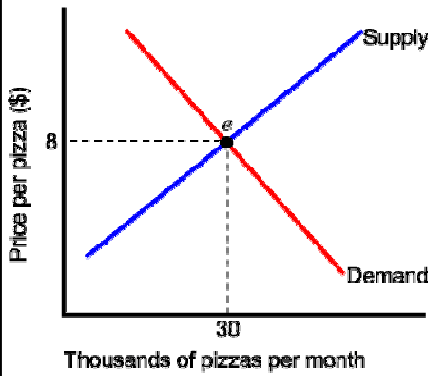


### Individual Supply to Market Supply



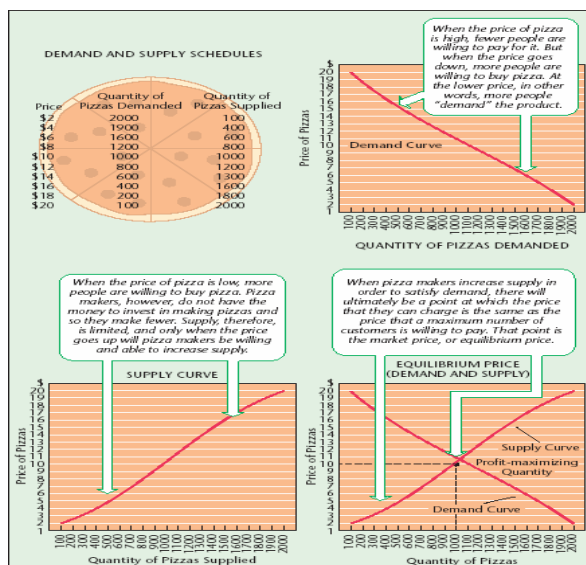
If there are 100 identical pizzerias, market supply equals 100 times the quantity supplied by a single firm at each price level.

### Market Equilibrium

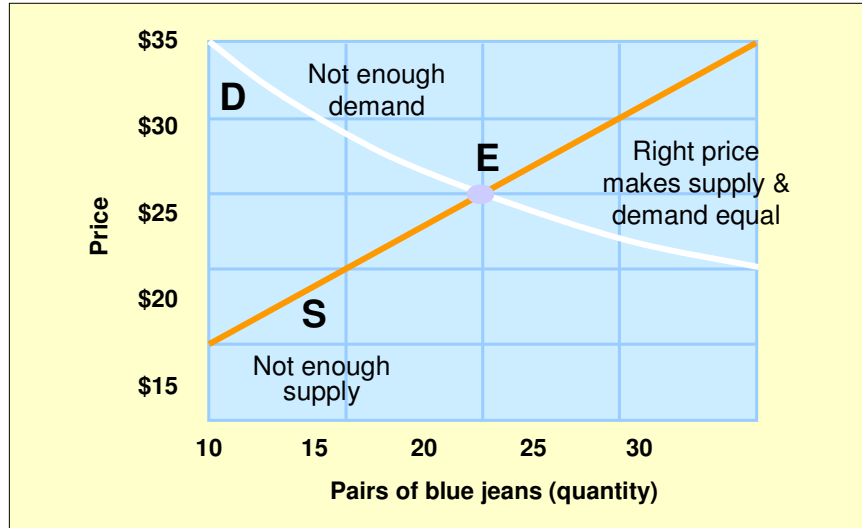


- Market equilibrium is a situation in which the quantity of a product demanded equals the quantity supplied, so there is no pressure to change the price.

### Demand and Supply and Market Equilibrium

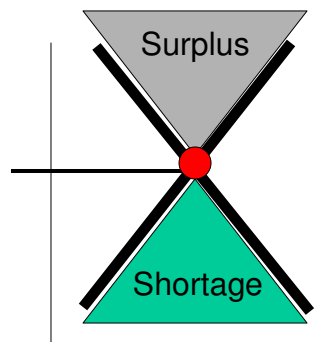


### Supply and Demand Relationship

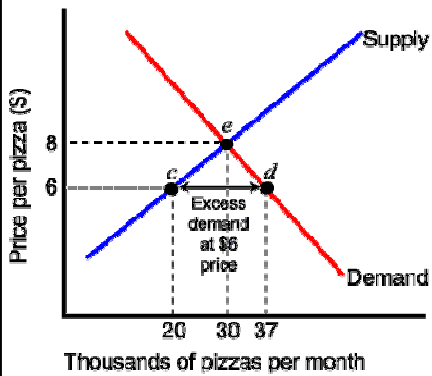


### Surpluses and Shortages

- Surplus is a situation in which quantity supplied exceeds quantity demanded
- Shortage is a situation in which quantity demanded exceeds quantity supplied

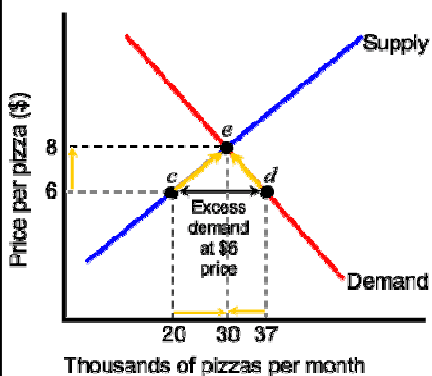


### Market Equilibrium



- Excess demand is a situation in which, at the prevailing price, consumers are willing to buy more than producers are willing to sell.

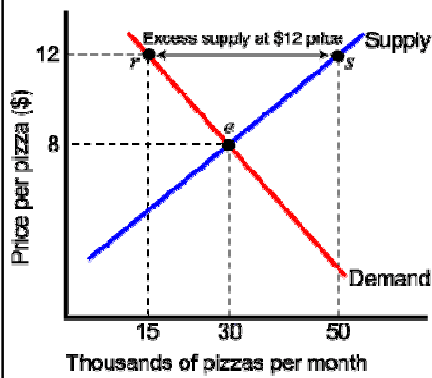
### Market Equilibrium



Excess demand causes the price to rise.

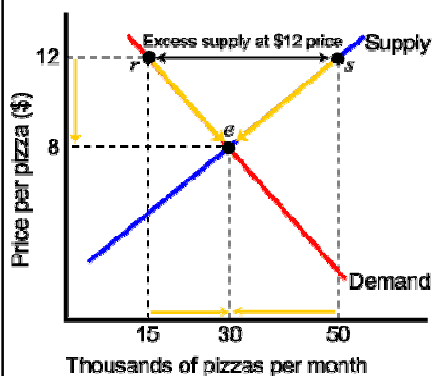
- The market moves upward along the demand curve, *decreasing* the quantity demanded, and upward along the supply curve, *increasing* the quantity supplied.

### Market Equilibrium



- Excess supply is a situation in which, at the prevailing price, producers are willing to sell more than consumers are willing to buy.

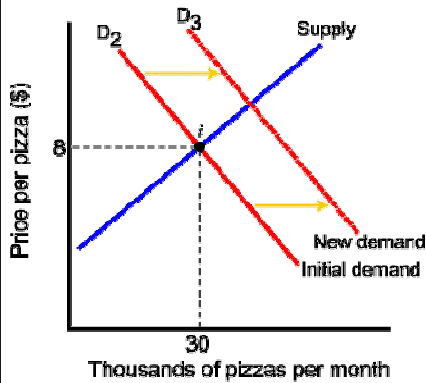
### Market Equilibrium



Excess supply causes the price to fall.

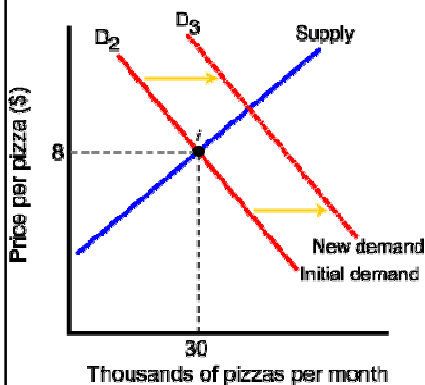
- The market moves downward along the demand curve, *increasing* the quantity demanded, and downward along the supply curve, *decreasing* the quantity supplied.

### Market Effects of Changes in Demand



- A change in demand is a change in the amount of a good demanded resulting from a change in something other than the price of the good.
- An increase in demand is represented graphically by a shift of the demand curve to the right.

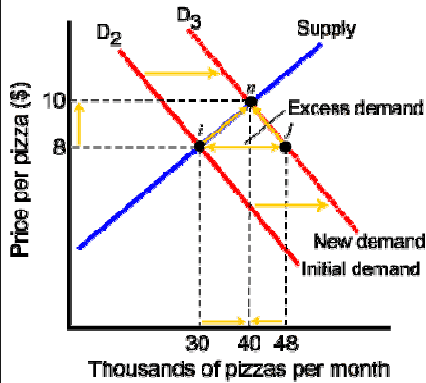
### Causes of an Increase in Demand



An increase in demand can occur for several reasons:

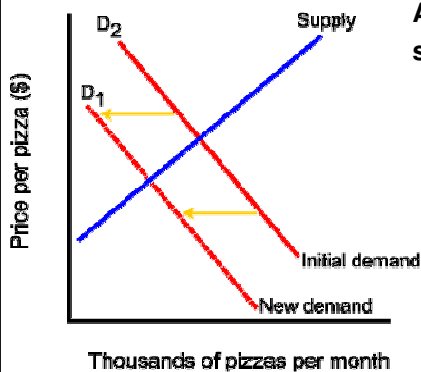
- An increase in income (for a normal good). A normal good is a good for which an increase in income causes an increase in demand.
- An increase in the price of a substitute good. When two goods are substitutes, an increase in the price of one good increases the demand for the other good.
- A decrease in the price of a complementary good. Two goods are complements when an increase in the price of one good decreases the demand for the other good.
- An increase in population
- A shift in consumer tastes
- Favorable advertising
- Expectations of higher future prices

### Market Effects of an Increase in Demand



- At the initial price (8\$), the shift of the demand curve causes excess quantity demanded
- Equilibrium is restored at point *n*, with a higher equilibrium price and a larger equilibrium quantity.

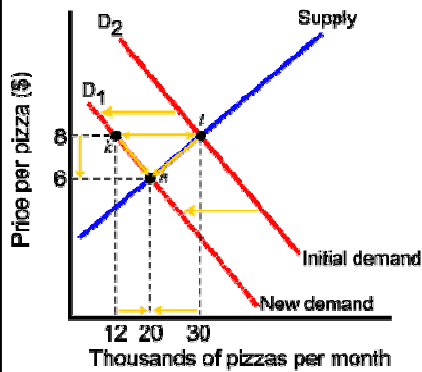
### Causes of a Decrease in Demand



A decrease in demand can occur for several reasons:

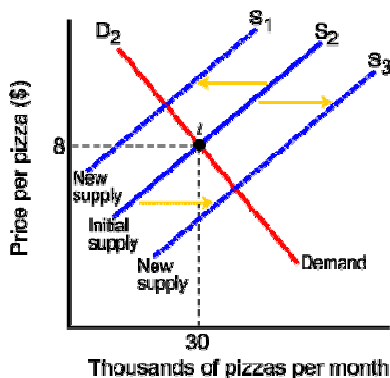
- A decrease in income (for a normal good)
- A decrease in the price of a substitute good
- An increase in the price of a complementary good
- A decrease in population
- A shift in consumer tastes
- Expectations of lower future prices

### Market Effects of a Decrease in Demand



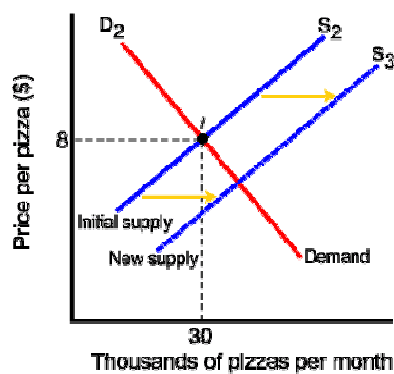
- A decrease in demand shifts the demand curve to the left. At the initial price (\$8), there is now an excess supply.
- Equilibrium is restored at point “n”, with a lower equilibrium price (\$6) and a smaller equilibrium quantity (20,000 pizzas).

### Market Effects of Changes in Supply



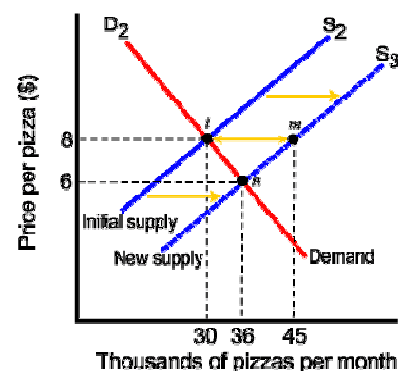
- A change in supply is a change in the amount of a good supplied resulting from a change in something other than the price of the good.
- An increase in supply is represented graphically by a shift of the supply curve to the right.
- A decrease in supply is represented graphically by a shift of the supply curve to the left.

### Causes of an Increase in Supply



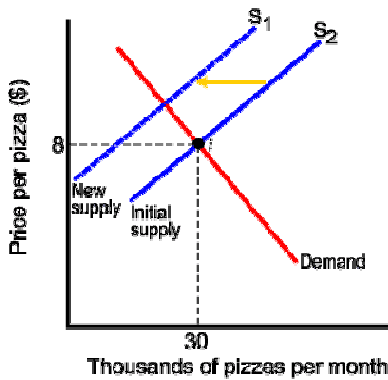
- An increase in supply shifts the supply curve to the right when:
  - The cost of an input decreases
  - A technological advance decreases costs
  - The number of firms increases
  - Producers expect a lower price in the future Subsidy

### Market Effects of an Increase in Supply



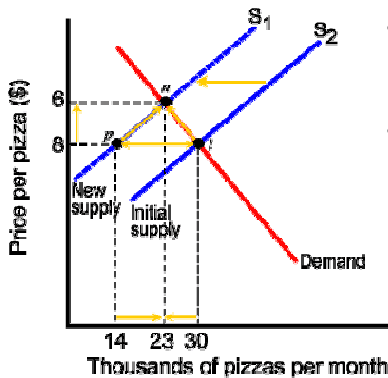
- At the initial price (8\$), the shift of the supply curve causes excess quantity supplied.
- Equilibrium is restored at point “n”, with a lower equilibrium price and a larger equilibrium quantity.

### Causes of a Decrease in Supply



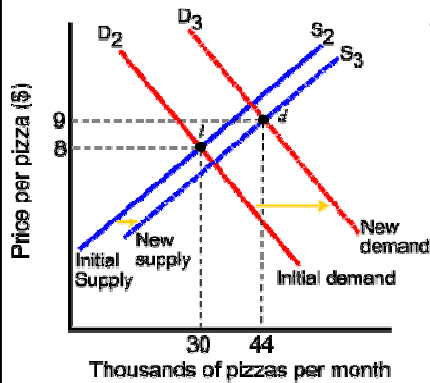
- A decrease in supply shifts the supply curve to the left when:
  - The cost of an input increases
  - The number of firms decreases
  - Producers expect a higher price in the future
  - Tax

### Market Effects of a Decrease in Supply



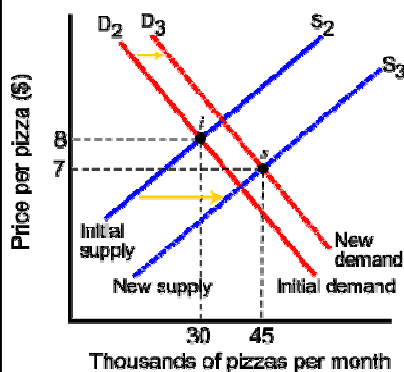
- At the initial price (8\$), the decrease in supply curve causes excess quantity demanded.
- Equilibrium is restored at point "n", with a higher equilibrium price and a smaller equilibrium quantity.

### Market Effects of Simultaneous Changes in Supply and Demand



- When the magnitude of an increase in demand is larger than the magnitude of an increase in supply, equilibrium quantity increases and market price increases.

### Market Effects of Simultaneous Changes in Supply and Demand



- When the magnitude of an increase in demand is smaller than the magnitude of an increase in supply, equilibrium quantity increases and market price decreases.

### Market Effects of Changes in Demand or Supply

<i>Change in Demand or Supply</i>	<i>Change in Price</i>	<i>Change in Quantity</i>
Increase in demand	Increase	Increase
Decrease in demand	Decrease	Decrease
Increase in supply	Decrease	Increase
Decrease in supply	Increase	Decrease