Chapter 04 The Market Forces of Supply and Demand

- Supply and demand are the forces that make market economies work.
- They determine the quantity of each good produced and the price at which it is sold.

4.1 Markets and Competition

4.1.1 Market

- A group of buyers and sellers of a particular good or service.
- Can be organized
  - E.g. market for many agricultural commodities
- More often less organized
  - E.g. the ice-cream market

4.1.2 Competition

- 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.
- Price takers
  - Buyers and sellers in perfectly competitive markets must accept the price the market determines.
- Monopoly
  - One seller that sets the price in a market

4.2 Demand

4.2.1 The Demand Curve

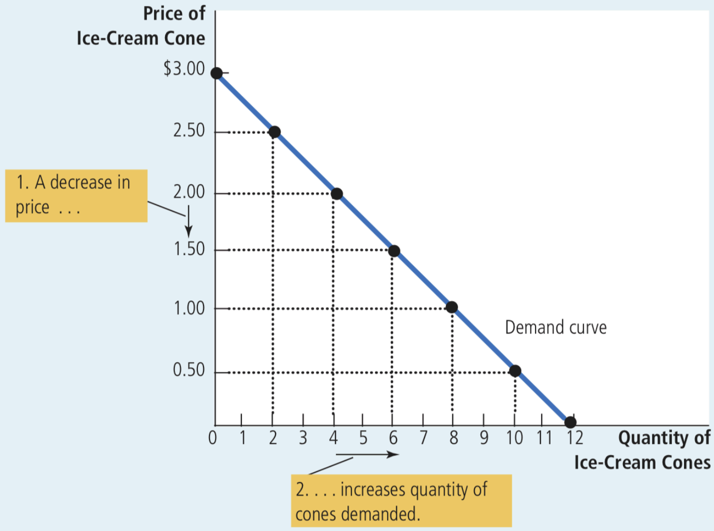
- Quantity demanded
  - The amount of a good that buyers are willing and able to purchase
- Law of demand
  - The claim that, other things being equal, the quantity demanded of a good falls when the price of the good rises.
- Demand schedule & demand curve
  - A table that shows the relationship between the price of a good and the quantity demanded.
  - A graph of the relationship between the price of a good and the quantity demanded.

FIGURE 1

Catherine's Demand Schedule and Demand Curve

The demand schedule is a table that shows the quantity demanded at each price. The demand curve, which graphs the demand schedule, illustrates how the quantity demanded of the good changes as its price varies. Because a lower price increases the quantity demanded, the demand curve slopes downward.

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



4.2.2 Market Demand v. Individual Demand

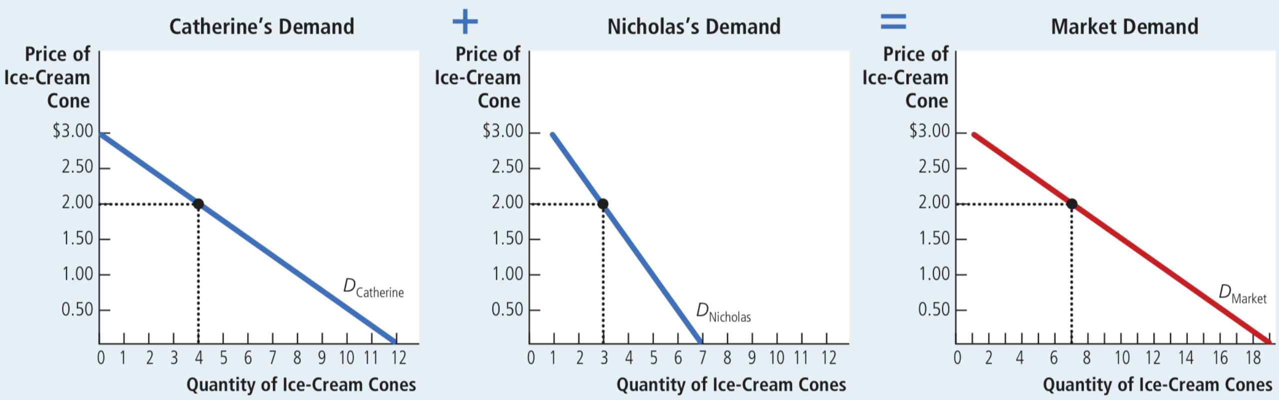
- Market demand
  - The sum of all the individual demands for a particular good or service.

FIGURE 2

Market Demand as the Sum of Individual Demands

The quantity demanded in a market is the sum of the quantities demanded by all the buyers at each price. Thus, the market demand curve is found by adding horizontally the individual demand curves. At a price of $2.00, Catherine demands 4 ice-cream cones and Nicholas demands 3 ice-cream cones. The quantity demanded in the market at this price is 7 cones.

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



4.2.3 Shifts in the Demand Curve

- Because the market demand curve holds other things constant, it need not be stable over time.
- The demand curve will
  - Shift to the right if the quantity demanded increased.
  - Shift to the left if the quantity demanded decreased.

1. Income

- Normal good
  - A good for which, other things being equal, an increase in income leads to an increase in demand
- Inferior good
  - A good for which, other things being equal, an increase in income leads to a decrease in demand

2. Prices of Related Goods

- Substitutes
  - Two goods for which an increase in the price of one leads to an increase in the demand for the other
- Complements
  - Two goods for which an increase in the price of one leads to an decrease in the demand for the other

3. Tastes

- Based on historical and psychological forces that are beyond the realm of economics
- Economists examine what happens when tastes change.

4. Expectations

- Expectations about the future may affect your demand for a good or service today.
  - Future income
  - Future prices

5. Numbers of Buyers

- If a third person joins the previous two, the quantity demanded in the market would be higher at every price, and market demand would increase.

6. Summary

Variable	**A Change in This Variable . . .**
Price of the good itself	Represents a movement along the demand curve
Income	Shifts the demand curve
Prices of related goods	Shifts the demand curve Complements Substitutes
Tastes	Shifts the demand curve
Expectations	Shifts the demand curve
Number of buyers	Shifts the demand curve

4.3 Supply

4.3.1 The Supply Curve

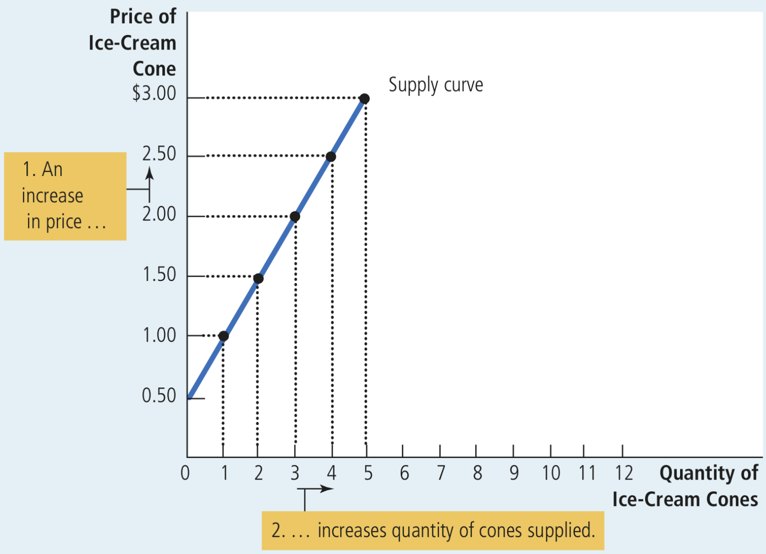
- Quantity supplied
  - The amount of a good that sellers are willing and able to sell
- Law of supply
  - The claim that, other things being equal, the quantity supplied of the good rises when the price of the good rises.
- Supply schedule & supply curve
  - A table that shows the relationship between the price of a good and the quantity supplied
  - A graph of the relationship between the price of a good and the quantity supplied

The supply schedule is a table that shows the quantity supplied at each price. This supply curve, which graphs the supply schedule, illustrates how the quantity supplied of the good changes as its price varies. Because a higher price increases the quantity supplied, the supply curve slopes upward.

FIGURE 5

Ben's Supply Schedule and Supply Curve

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



4.3.2 Market Supply v. Individual Supply

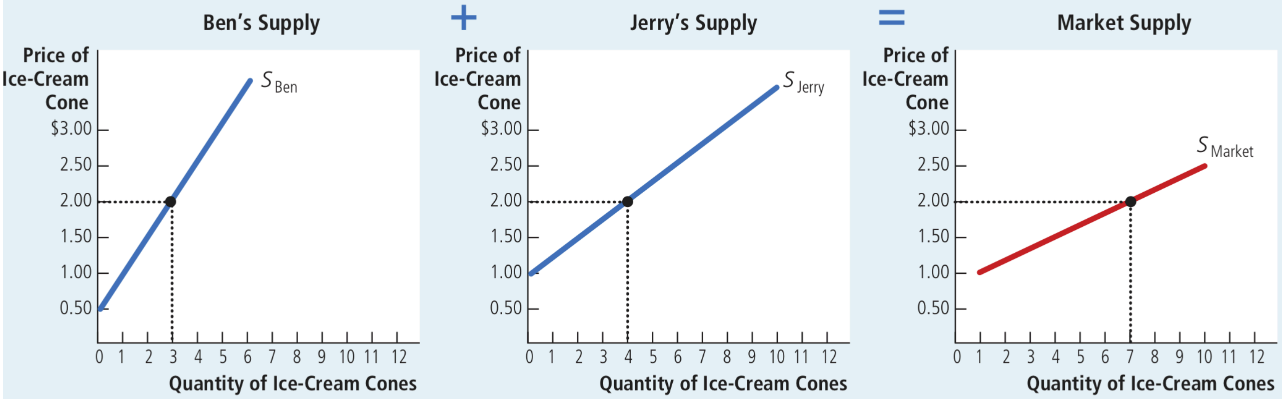
- Market supply is the sum of the supplies of all sellers.

FIGURE 6

Market Supply as the Sum of Individual Supplies

The quantity supplied in a market is the sum of the quantities supplied by all the sellers at each price. Thus, the market supply curve is found by adding horizontally the individual supply curves. At a price of $2.00, Ben supplies 3 ice-cream cones and Jerry supplies 4 ice-cream cones. The quantity supplied in the market at this price is 7 cones.

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



4.3.3 Shifts in the Supply Curve

- Because the market supply curve holds other things constant, it will
  - Shift to the right if the quantity supplied increased.
  - Shift to the left if the quantity supplied decreased.

1. Input Prices

- When the price of one or more of these inputs rises, producing ice cream is less profitable, and firms supply less ice cream.

2. Technology

- By reducing firms' costs, the advance in technology raised the supply of ice cream.

3. Expectations

- If a firm expects the price of ice cream to rise in the future, it will put some of its current production into storage and supply less to the market today.

4. Numbers of Sellers

- If Ben or Jerry were to retire from the ice-cream business, the supply in the market would fall.

5. Summary

Variable	A Change in This Variable . . .
Price of the good itself	Represents a movement along the supply curve
Input prices	Shifts the supply curve
Technology	Shifts the supply curve
Expectations	Shifts the supply curve
Number of sellers	Shifts the supply curve

4.4 Supply & Demand Together

4.4.1 Equilibrium

1. Equilibrium

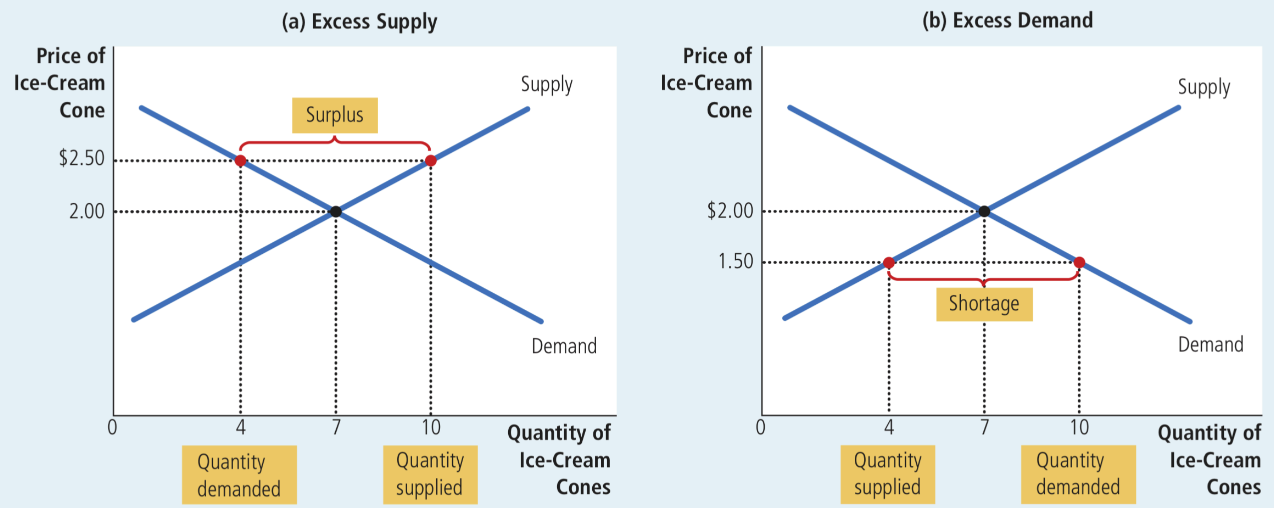
- The point where the supply and demand curves intersect.
  - A situation in which the market price has reached the level at which quantity supplied equals quantity demanded.
- Equilibrium price
  - The price that balances quantity supplied and quantity demanded.
  - Also called market-clearing price.
- Equilibrium quantity
  - The quantity supplied and the quantity demanded at the equilibrium price.

2. The Law of Supply and Demand

FIGURE 9

Markets Not in Equilibrium

In panel (a), there is a surplus. Because the market price of $2.50 is above the equilibrium price, the quantity supplied (10 cones) exceeds the quantity demanded (4 cones). Suppliers try to increase sales by cutting the price of a cone, and this moves the price toward its equilibrium level. In panel (b), there is a shortage. Because the market price of $1.50 is below the equilibrium price, the quantity demanded (10 cones) exceeds the quantity supplied (4 cones). With too many buyers chasing too few goods, suppliers can take advantage of the shortage by raising the price. Hence, in both cases, the price adjustment moves the market toward the equilibrium of supply and demand.



- Regardless of whether the price starts off too high or too low, the activities of the many buyers and sellers automatically push the market price toward the equilibrium price.
- Surplus
  - A situation in which quantity supplied is greater than quantity demanded
- Shortage
  - A situation in which quantity demanded is greater than quantity supplied
- The law of supply and demand
  - The price of any good adjusts to bring the quantity supplied and quantity demanded for that good into balance.

4.4.2 Three Steps to Analyzing Changes in Equilibrium

1. Decide whether the event shifts the supply or demand curve (or perhaps both).
2. Decide in which direction the curve shifts.
3. Use the supply-and-demand diagram to see how the shift changes the equilibrium price and quantity.

- The supply-and-demand diagram

	No Change in Supply	**An Increase in Supply**	**A Decrease in Supply**
No Change in Demand	*P* same *Q* same	*P* down *Q* up	*P* up *Q* down
An Increase in Demand	*P* up *Q* up	*P* ambiguous *Q* up	*P* up *Q* ambiguous
A Decrease in Demand	*P* down *Q* down	*P* down *Q* ambiguous	*P* ambiguous *Q* down

4.5 Conclusion: How Prices Allocate Resources

- Because supply and demand are such pervasive economic phenomena, the model of supply and demand is a powerful tool for analysis. We use this model repeatedly in the following chapters.
- If an invisible hand guides market economies, as Adam Smith famously suggested, then the price system is the baton that the invisible hand uses to conduct the economic orchestra.