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CHAPTER OUTLINE

Firms and Households: The Basic Decision-Making Units

Input Markets and Output Markets: The Circular Flow

Demand in Product/Output Markets
- Changes in Quantity Demanded versus Changes in Demand
- Price and Quantity Demanded: The Law of Demand
- Other Determinants of Household Demand
- Shift of Demand versus Movement Along the Demand Curve
- From Household Demand to Market Demand

Supply in Product/Output Markets
- Price and Quantity Supplied: The Law of Supply
- Other Determinants of Supply
- Shift of Supply versus Movement Along the Supply Curve
- From Individual Supply to Market Supply

Market Equilibrium
- Excess Demand
- Excess Supply
- Changes in Equilibrium

Demand and Supply in Product Markets: A Review

Looking Ahead: Markets and the Allocation of Resources
Firms and Households: The Basic Decision-Making Units

**firm** An organization that transforms resources (inputs) into products (outputs). Firms are the primary producing units in a market economy.

**entrepreneur** 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** The consuming units in an economy.
Input Markets and Output Markets: The Circular Flow

product or output markets  The markets in which goods and services are exchanged.

input or factor markets  The markets in which the resources used to produce goods and services are exchanged.
Input Markets and Output Markets: The Circular Flow

**FIGURE 3.1 The Circular Flow of Economic Activity**

Diagrams like this one show the circular flow of economic activity, hence the name *circular flow diagram*. Here goods and services flow clockwise: Labor services supplied by households flow to firms, and goods and services produced by firms flow to households.

Payment (usually money) flows in the opposite (counterclockwise) direction: Payment for goods and services flows from households to firms, and payment for labor services flows from firms to households.

Note: Color Guide—In Figure 3.1 households are depicted in blue and firms are depicted in red. From now on all diagrams relating to the behavior of households will be blue or shades of blue and all diagrams relating to the behavior of firms will be red or shades of red.
Input Markets and Output Markets: The Circular Flow

**labor market**  The input/factor market in which households supply work for wages to firms that demand labor.

**capital market**  The input/factor market in which households supply their savings, for interest or for claims to future profits, to firms that demand funds to buy capital goods.
Input Markets and Output Markets: The Circular Flow

**land market** The input/factor market in which households supply land or other real property in exchange for rent.

**factors of production** The inputs into the production process. Land, labor, and capital are the three key factors of production.

Input and output markets are connected through the behavior of both firms and households. Firms determine the quantities and character of outputs produced and the types and quantities of inputs demanded. Households determine the types and quantities of products demanded and the quantities and types of inputs supplied.
Demand in Product/Output Markets

A household’s decision about what quantity of a particular output, or product, to demand depends on a number of factors, including:

- The *price of the product* in question.
- The *income available* to the household.
- The household’s *amount of accumulated wealth*.
- The *prices of other products* available to the household.
- The household’s *tastes and preferences*.
- The household’s *expectations* about future income, wealth, and prices.
Demand in Product/Output Markets

**quantity demanded**  The amount (number of units) of a product that a household would buy in a given period if it could buy all it wanted at the current market price.
Demand in Product/Output Markets

Changes in Quantity Demanded versus Changes in Demand

The most important relationship in individual markets is that between market price and quantity demanded.

Changes in the price of a product affect the quantity demanded per period. Changes in any other factor, such as income or preferences, affect demand. Thus, we say that an increase in the price of Coca-Cola is likely to cause a decrease in the quantity of Coca-Cola demanded. However, we say that an increase in income is likely to cause an increase in the demand for most goods.
Demand in Product/Output Markets

Price and Quantity Demanded: The Law of Demand

**demand schedule**  A table showing how much of a given product a household would be willing to buy at different prices.

**demand curve**  A graph illustrating how much of a given product a household would be willing to buy at different prices.
Demand in Product/Output Markets

Price and Quantity Demanded: The Law of Demand

TABLE 3.1 Alex’s Demand Schedule for Gasoline

<table>
<thead>
<tr>
<th>Price (per Gallon)</th>
<th>Quantity Demanded (Gallons per Week)</th>
</tr>
</thead>
<tbody>
<tr>
<td>$ 8.00</td>
<td>0</td>
</tr>
<tr>
<td>7.00</td>
<td>2</td>
</tr>
<tr>
<td>6.00</td>
<td>3</td>
</tr>
<tr>
<td>5.00</td>
<td>5</td>
</tr>
<tr>
<td>4.00</td>
<td>7</td>
</tr>
<tr>
<td>3.00</td>
<td>10</td>
</tr>
<tr>
<td>2.00</td>
<td>14</td>
</tr>
<tr>
<td>1.00</td>
<td>20</td>
</tr>
<tr>
<td>0.00</td>
<td>26</td>
</tr>
</tbody>
</table>

FIGURE 3.2 Alex’s Demand Curve

The relationship between price ($P$) and quantity demanded ($q$) presented graphically is called a demand curve. Demand curves have a negative slope, indicating that lower prices cause quantity demanded to increase. Note that Alex’s demand curve is blue; demand in product markets is determined by household choice.
Demand in Product/Output Markets

Price and Quantity Demanded: The Law of Demand

Demand Curves Slope Downward

law of demand The negative relationship between price and quantity demanded: As price rises, quantity demanded decreases; as price falls, quantity demanded increases.

It is reasonable to expect quantity demanded to fall when price rises, ceteris paribus, and to expect quantity demanded to rise when price falls, ceteris paribus. Demand curves have a negative slope.
Demand in Product/Output Markets

Price and Quantity Demanded: The Law of Demand

Other Properties of Demand Curves

1. They have a negative slope.
2. They intersect the quantity ($X$-) axis.
3. They intersect the price ($Y$-) axis.

The actual shape of an individual household demand curve—whether it is steep or flat, whether it is bowed in or bowed out—depends on the unique tastes and preferences of the household and other factors.
Demand in Product/Output Markets

Other Determinants of Household Demand

**Income and Wealth**

**income** The sum of all a household’s 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** The total value of what a household owns minus what it owes. It is a stock measure.
Demand in Product/Output Markets

Other Determinants of Household Demand

Income and Wealth

**normal goods**  Goods for which demand goes up when income is higher and for which demand goes down when income is lower.

**inferior goods**  Goods for which demand tends to fall when income rises.
Demand in Product/Output Markets

Other Determinants of Household Demand

Prices of Other Goods and Services

**substitutes** Goods that can serve as replacements for one another; when the price of one increases, demand for the other increases.

**perfect substitutes** Identical products.

**complements, complementary goods** Goods that “go together”; a decrease in the price of one results in an increase in demand for the other and vice versa.
Demand in Product/Output Markets

Other Determinants of Household Demand

Tastes and Preferences

Income, wealth, and prices of goods available are the three factors that determine the combinations of goods and services that a household is able to buy.

Changes in preferences can and do manifest themselves in market behavior.

Within the constraints of prices and incomes, preference shapes the demand curve, but it is difficult to generalize about tastes and preferences. First, they are volatile. Second, tastes are idiosyncratic.
Demand in Product/Output Markets

Other Determinants of Household Demand

Expectations

What you decide to buy today certainly depends on today’s prices and your current income and wealth.

There are many examples of the ways expectations affect demand.

Increasingly, economic theory has come to recognize the importance of expectations.

It is important to understand that demand depends on more than just current incomes, prices, and tastes.
Shift of Demand versus Movement Along a Demand Curve

When the price of a good changes, we move along the demand curve for that good. When any other factor that influences demand changes (income, tastes, and so on), the relationship between price and quantity is different; there is a shift of the demand curve, in this case from $D_0$ to $D_1$.

Gasoline is a normal good.
Demand in Product/Output Markets

Shift of Demand versus Movement Along a Demand Curve

**shift of a demand curve**  The change that takes place in a demand curve corresponding to a new relationship between quantity demanded of a good and price of that good. The shift is brought about by a change in the original conditions.

**movement along a demand curve**  The change in quantity demanded brought about by a change in price.

Change in price of a good or service leads to

\[\text{Change in quantity demanded (movement along a demand curve).}\]

Change in income, preferences, or prices of other goods or services leads to

\[\text{Change in demand (shift of a demand curve).}\]
Demand in Product/Output Markets

Shift of Demand versus Movement Along a Demand Curve

- **FIGURE 3.4** Shifts versus Movement Along a Demand Curve
  - a. When income increases, the demand for inferior goods *shifts to the left* and the demand for normal goods *shifts to the right.*
Demand in Product/Output Markets

Shift of Demand versus Movement Along a Demand Curve

\[ P \quad \text{Price per pound of hamburger ($)} \]

\[ q \quad \text{Pounds of hamburger per month} \]

\[ D_0, D_1 \quad \text{Demand curves} \]

\[ P \quad \text{Price per pound of chicken ($)} \]

\[ q \quad \text{Pounds of chicken per month} \]

\[ D_0, D_1 \quad \text{Demand curves} \]

\[ P \quad \text{Price per bottle of ketchup ($)} \]

\[ q \quad \text{Bottles of ketchup per month} \]

\[ D_0, D_1 \quad \text{Demand curves} \]

\[ \text{b. Price of hamburger rises} \]

If the price of hamburger rises, the quantity of hamburger demanded declines—this is a movement along the demand curve. The same price rise for hamburger would shift the demand for chicken (a substitute for hamburger) to the right and the demand for ketchup (a complement to hamburger) to the left.

\( \text{FIGURE 3.4 Shifts versus Movement Along a Demand Curve (continued)} \)
Demand in Product/Output Markets

From Household Demand to Market Demand

**market demand** The sum of all the quantities of a good or service demanded per period by all the households buying in the market for that good or service.
Demand in Product/Output Markets

From Household Demand to Market Demand

**FIGURE 3.5 Deriving Market Demand from Individual Demand Curves**

Total demand in the marketplace is simply the sum of the demands of all the households shopping in a particular market. It is the sum of all the individual demand curves—that is, the sum of all the individual quantities demanded at each price.

<table>
<thead>
<tr>
<th>Price</th>
<th>Quantity ((q)) demanded by</th>
<th>Total quantity demanded in the market ((Q))</th>
</tr>
</thead>
<tbody>
<tr>
<td>$3.50</td>
<td>A = 4 () B = 0 () C = 4</td>
<td>= 8</td>
</tr>
<tr>
<td>1.50</td>
<td>A = 8 () B = 3 () C = 9</td>
<td>= 20</td>
</tr>
</tbody>
</table>
Supply in Product/Output Markets

Firms build factories, hire workers, and buy raw materials because they believe they can sell the products they make for more than it costs to produce them.

profit The difference between revenues and costs.
Supply in Product/Output Markets

Price and Quantity Supplied: The Law of Supply

**quantity supplied** The amount of a particular product that a firm would be willing and able to offer for sale at a particular price during a given time period.

**supply schedule** A table showing how much of a product firms will sell at alternative prices.
Supply in Product/Output Markets

Price and Quantity Supplied: The Law of Supply

**law of supply** The positive relationship between price and quantity of a good supplied: An increase in market price will lead to an increase in quantity supplied, and a decrease in market price will lead to a decrease in quantity supplied.

**supply curve** A graph illustrating how much of a product a firm will sell at different prices.
Supply in Product/Output Markets

Price and Quantity Supplied: The Law of Supply

TABLE 3.3 Clarence Brown’s Supply Schedule for Soybeans

<table>
<thead>
<tr>
<th>Price (per Bushel)</th>
<th>Quantity Supplied (Bushels per Year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>$1.50</td>
<td>0</td>
</tr>
<tr>
<td>1.75</td>
<td>10,000</td>
</tr>
<tr>
<td>2.25</td>
<td>20,000</td>
</tr>
<tr>
<td>3.00</td>
<td>30,000</td>
</tr>
<tr>
<td>4.00</td>
<td>45,000</td>
</tr>
<tr>
<td>5.00</td>
<td>45,000</td>
</tr>
</tbody>
</table>

FIGURE 3.6 Clarence Brown’s Individual Supply Curve

A producer will supply more when the price of output is higher. The slope of a supply curve is positive. Note that the supply curve is red: Supply is determined by choices made by firms.
Supply in Product/Output Markets

Other Determinants of Supply

The Cost of Production

For a firm to make a profit, its revenue must exceed its costs.

Cost of production depends on a number of factors, including the available technologies and the prices and quantities of the inputs needed by the firm (labor, land, capital, energy, and so on).
Supply in Product/Output Markets

Other Determinants of Supply

The Prices of Related Products

Assuming that its objective is to maximize profits, a firm’s decision about what quantity of output, or product, to supply depends on:

1. The price of the good or service.

2. The cost of producing the product, which in turn depends on:
   - The price of required inputs (labor, capital, and land).
   - The technologies that can be used to produce the product.

3. The prices of related products. **Ex: Corn vs. Soybean**
Supply in Product/Output Markets

Shift of Supply versus Movement Along a Supply Curve

movement along a supply curve The change in quantity supplied brought about by a change in price.

shift of a supply curve The change that takes place in a supply curve corresponding to a new relationship between quantity supplied of a good and the price of that good. The shift is brought about by a change in the original conditions.
Supply in Product/Output Markets

Shift of Supply versus Movement Along a Supply Curve

<table>
<thead>
<tr>
<th>Price (per Bushel)</th>
<th>Schedule $S_0$ Quantity Supplied (Bushels per Year Using Old Seed)</th>
<th>Schedule $S_1$ Quantity Supplied (Bushels per Year Using New Seed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>$1.50</td>
<td>0</td>
<td>5,000</td>
</tr>
<tr>
<td>1.75</td>
<td>10,000</td>
<td>23,000</td>
</tr>
<tr>
<td>2.25</td>
<td>20,000</td>
<td>33,000</td>
</tr>
<tr>
<td>3.00</td>
<td>30,000</td>
<td>40,000</td>
</tr>
<tr>
<td>4.00</td>
<td>45,000</td>
<td>54,000</td>
</tr>
<tr>
<td>5.00</td>
<td>45,000</td>
<td>54,000</td>
</tr>
</tbody>
</table>

> **FIGURE 3.7** Shift of the Supply Curve for Soybeans following Development of a New Seed Strain

When the price of a product changes, we move *along* the supply curve for that product; the quantity supplied rises or falls.

When any other factor affecting supply changes, the supply curve *shifts*. 
Supply in Product/Output Markets

Shift of Supply versus Movement Along a Supply Curve

As with demand, it is very important to distinguish between *movements along* supply curves (changes in quantity supplied) and *shifts in* supply curves (changes in supply):

\[ \text{Change in price of a good or service leads to} \]
\[ \quad \rightarrow \text{Change in } \textit{quantity supplied} \text{(movement along a supply curve)}. \]

\[ \text{Change in costs, input prices, technology, or prices of related goods and services leads to} \]
\[ \quad \rightarrow \text{Change in } \textit{supply} \text{(shift of a supply curve)}. \]
Supply in Product/Output Markets

From Individual Supply to Market Supply

**market supply**  The sum of all that is supplied each period by all producers of a single product.
Supply in Product/Output Markets

From Individual Supply to Market Supply

![Graphs showing individual firm supply curves and market supply curve](image)

<table>
<thead>
<tr>
<th>Price</th>
<th>Quantity (q) supplied by</th>
<th>Total quantity supplied in the market (Q)</th>
</tr>
</thead>
<tbody>
<tr>
<td>$3.00</td>
<td>A: 30,000 + B: 10,000 + C: 25,000</td>
<td>= 65,000</td>
</tr>
<tr>
<td>1.75</td>
<td>A: 10,000 + B: 5,000 + C: 10,000</td>
<td>= 25,000</td>
</tr>
</tbody>
</table>

▲ FIGURE 3.8 Deriving Market Supply from Individual Firm Supply Curves

Total supply in the marketplace is the sum of all the amounts supplied by all the firms selling in the market. It is the sum of all the individual quantities supplied at each price.
Market Equilibrium

**equilibrium** The condition that exists when quantity supplied and quantity demanded are equal. At equilibrium, there is no tendency for price to change.

**Excess Demand**

**excess demand or shortage** The condition that exists when quantity demanded exceeds quantity supplied at the current price.
Market Equilibrium

Excess Demand

► FIGURE 3.9 Excess Demand, or Shortage
At a price of $1.75 per bushel, quantity demanded exceeds quantity supplied. When excess demand exists, there is a tendency for price to rise. When quantity demanded equals quantity supplied, excess demand is eliminated and the market is in equilibrium. Here the equilibrium price is $2.50 and the equilibrium quantity is 35,000 bushels.

When quantity demanded exceeds quantity supplied, price tends to rise. When the price in a market rises, quantity demanded falls and quantity supplied rises until an equilibrium is reached at which quantity demanded and quantity supplied are equal.
Market Equilibrium

Excess Supply

**excess supply or surplus** The condition that exists when quantity supplied exceeds quantity demanded at the current price.
When quantity supplied exceeds quantity demanded at the current price, the price tends to fall. When price falls, quantity supplied is likely to decrease and quantity demanded is likely to increase until an equilibrium price is reached where quantity supplied and quantity demanded are equal.
Market Equilibrium

Changes In Equilibrium

When supply and demand curves shift, the equilibrium price and quantity change.

\[ \text{FIGURE 3.11 The Coffee Market: A Shift of Supply and Subsequent Price Adjustment} \]

Before the freeze, the coffee market was in equilibrium at a price of $1.20 per pound. At that price, quantity demanded equaled quantity supplied. The freeze shifted the supply curve to the left (from \( S_0 \) to \( S_1 \)), increasing the equilibrium price to $2.40.
Market Equilibrium

Changes In Equilibrium

► FIGURE 3.12 Examples of Supply and Demand Shifts for Product X

1. Increase in income: X is a normal good
2. Increase in income: X is an inferior good
3. Decrease in income: X is a normal good
4. Decrease in income: X is an inferior good
5. Increase in the price of a substitute for X
6. Increase in the price of a complement for X
7. Decrease in the price of a substitute for X
8. Decrease in the price of a complement for X
9. Increase in the cost of production of X
10. Decrease in the cost of production of X
Demand and Supply in Product Markets: A Review

Here are some important points to remember about the mechanics of supply and demand in product markets:

1. A demand curve shows how much of a product a household would buy if it could buy all it wanted at the given price. A supply curve shows how much of a product a firm would supply if it could sell all it wanted at the given price.

2. Quantity demanded and quantity supplied are always per time period—that is, per day, per month, or per year.

3. The demand for a good is determined by price, household income and wealth, prices of other goods and services, tastes and preferences, and expectations.
Demand and Supply in Product Markets: A Review

Here are some important points to remember about the mechanics of supply and demand in product markets:

4. The supply of a good is determined by price, costs of production, and prices of related products. Costs of production are determined by available technologies of production and input prices.

5. Be careful to distinguish between movements along supply and demand curves and shifts of these curves. When the price of a good changes, the quantity of that good demanded or supplied changes—that is, a movement occurs along the curve. When any other factor changes, the curve shifts, or changes position.

6. Market equilibrium exists only when quantity supplied equals quantity demanded at the current price.
Why Do the Prices of Newspapers Rise?

In 2006, the average price for a daily edition of a Baltimore newspaper was $0.50. In 2007, the average price had risen to $0.75.
Looking Ahead: Markets and the Allocation of Resources

You can already begin to see how markets answer the basic economic questions of what is produced, how it is produced, and who gets what is produced.

- Demand curves reflect what people are willing and able to pay for products; demand curves are influenced by incomes, wealth, preferences, prices of other goods, and expectations.

- Firms in business to make a profit have a good reason to choose the best available technology—lower costs mean higher profits.

- When a good is in short supply, price rises. As it does, those who are willing and able to continue buying do so; others stop buying.
capital market
complements, complementary goods
demand curve
demand schedule
entrepreneur
equilibrium
excess demand or shortage
excess supply or surplus
factors of production
firm
households
income
inferior goods
input or factor markets
labor market
land market
law of demand

law of supply
market demand
market supply
movement along a demand curve
movement along a supply curve
normal goods
perfect substitutes
product or output markets
profit
quantity demanded
quantity supplied
shift of a demand curve
shift of a supply curve
substitutes
supply curve
supply schedule
wealth or net worth