Learning Objectives
9.1 Define utility and explain how consumers choose goods and services to maximize their utility.
9.2 Use the concept of utility to explain the law of demand
9.3 Define social influences and how they affect consumption choices
9.4 Describe the behavioral economics approach to understanding consumer decision making.

APPENDIX Use indifference curves and budget lines to understand consumer behavior.

Can Jay-Z Get You to Drink Cherry Coke?
Firms must understand consumer behavior to determine whether strategies such as using celebrities in their advertising are likely to be effective.

Utility and Consumer Decision Making

Learning Objective 9.1

The Economic Model of Consumer Behavior in a Nutshell
The economic model of consumer behavior predicts that consumers will choose to buy the combination of goods and services that makes them as well off as possible from among all the combinations that their budgets allow them to buy.

Utility
The enjoyment or satisfaction people receive from consuming goods and services.
Utility and Consumer Decision Making

The Principle of Diminishing Marginal Utility

Marginal utility (MU) The change in total utility a person receives from consuming one additional unit of a good or service.

Law of diminishing marginal utility

The principle that consumers experience diminishing additional satisfaction as they consume more of a good or service during a given period of time.

The Rule of Equal Marginal Utility per Dollar Spent

Budget constraint The limited amount of income available to consumers to spend on goods and services.

Table 9.1

<table>
<thead>
<tr>
<th>Number of Slices of Pizza</th>
<th>Total Utility from Eating Pizza</th>
<th>Marginal Utility from the Last Slice</th>
<th>Number of Cups of Coke</th>
<th>Total Utility from Drinking Coke</th>
<th>Marginal Utility from the Last Cup</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1</td>
<td>10</td>
<td>10</td>
<td>1</td>
<td>20</td>
<td>20</td>
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<td>16</td>
<td>10</td>
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<td>35</td>
<td>15</td>
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<td>16</td>
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<td>45</td>
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</tr>
<tr>
<td>6</td>
<td>21</td>
<td>3</td>
<td>6</td>
<td>52</td>
<td>1</td>
</tr>
</tbody>
</table>
Utility and Consumer Decision Making

The Rule of Equal Marginal Utility per Dollar Spent

Table 9-2

<table>
<thead>
<tr>
<th>Combinations of Pizza and Coke</th>
<th>Marginal Utility per Dollar (MU/P)</th>
<th>Total Spending</th>
<th>Total Utility</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Slice of Pizza and 3 Cups of Coke</td>
<td>$15</td>
<td>$15</td>
<td>30</td>
</tr>
<tr>
<td>2 Slices of Pizza and 5 Cups of Coke</td>
<td>$25</td>
<td>$25</td>
<td>50</td>
</tr>
<tr>
<td>3 Slices of Pizza and 7 Cups of Coke</td>
<td>$35</td>
<td>$35</td>
<td>70</td>
</tr>
<tr>
<td>4 Slices of Pizza and 9 Cups of Coke</td>
<td>$45</td>
<td>$45</td>
<td>90</td>
</tr>
</tbody>
</table>

Learning Objective 9.1

We can summarize the two conditions for maximizing utility:

1. \( \frac{MU_{\text{Pizza}}}{P_{\text{Pizza}}} = \frac{MU_{\text{Coke}}}{P_{\text{Coke}}} \)

2. Spending on pizza + Spending on Coke = Amount available to be spent
Solved Problem | 9-1
Finding the Optimal Level of Consumption

<table>
<thead>
<tr>
<th>Number of Ice Cream Cones</th>
<th>Total Utility from Ice Cream Cones</th>
<th>Marginal Utility from Last Cone</th>
<th>Number of Cans of Lime Fizz</th>
<th>Total Utility from Cans of Lime Fizz</th>
<th>Marginal Utility from Last Can</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>0.0</td>
<td>0</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>1</td>
<td>30</td>
<td>3.0</td>
<td>1</td>
<td>40</td>
<td>4.0</td>
</tr>
<tr>
<td>2</td>
<td>55</td>
<td>2.5</td>
<td>2</td>
<td>75</td>
<td>3.5</td>
</tr>
<tr>
<td>3</td>
<td>75</td>
<td>2.0</td>
<td>3</td>
<td>101</td>
<td>2.0</td>
</tr>
<tr>
<td>4</td>
<td>90</td>
<td>1.5</td>
<td>4</td>
<td>119</td>
<td>1.5</td>
</tr>
<tr>
<td>5</td>
<td>100</td>
<td>1.0</td>
<td>5</td>
<td>124</td>
<td>1.0</td>
</tr>
<tr>
<td>6</td>
<td>105</td>
<td>0.5</td>
<td>6</td>
<td>141</td>
<td>0.5</td>
</tr>
</tbody>
</table>

MU/PMU

Quantity | Ice Cream Cone | Cans of Lime Fizz |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MU</td>
<td>MU*P</td>
</tr>
<tr>
<td>1</td>
<td>30</td>
<td>12.0</td>
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<td>25</td>
<td>12.5</td>
</tr>
<tr>
<td>3</td>
<td>20</td>
<td>10.0</td>
</tr>
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<td>5.0</td>
</tr>
<tr>
<td>6</td>
<td>5</td>
<td>2.5</td>
</tr>
</tbody>
</table>

Utility and Consumer Decision Making

What if the Rule of Equal Marginal Utility per Dollar Does Not Hold?

The idea of getting the maximum utility by equalizing the ratio of marginal utility to price for the goods you are buying can be difficult to grasp.
Utility and Consumer Decision Making

The Income Effect and Substitution Effect of a Price Change

**Income effect** The change in the quantity demanded of a good that results from the effect of a change in price on consumer purchasing power, holding all other factors constant.

**Substitution effect** The change in the quantity demanded of a good that results from a change in price making the good more or less expensive relative to other goods, holding constant the effect of the price change on consumer purchasing power.

---

**Table 9-4**

Table 9-4 Income and Substitution Effect of a Price Change

| PRICE INCREASE |  | PRICE DECREASE |  |
|----------------|------------------|------------------|
| Increases the consumer's purchasing power, which... | ... if a normal good, causes the quantity demanded to increase. | ... if an inferior good, causes the quantity demanded to decrease. |
| Decreases the consumer's purchasing power, which... | ... if a normal good, causes the quantity demanded to decrease. | ... if an inferior good, causes the quantity demanded to increase. |

---

**Table 9-5**

Table 9-5 Adjusting Optimal Consumption to a Lower Price of Pizza

<table>
<thead>
<tr>
<th>Number of Slices of Pizza</th>
<th>Marginal Utility from Last Slice</th>
<th>Marginal Utility per Dollar</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>20</td>
<td>12.33</td>
</tr>
<tr>
<td>2</td>
<td>16</td>
<td>15.67</td>
</tr>
<tr>
<td>3</td>
<td>10</td>
<td>6.67</td>
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<td>6</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>2</td>
<td>1.33</td>
</tr>
<tr>
<td>6</td>
<td>-3</td>
<td>-1</td>
</tr>
</tbody>
</table>

---

Social Influences on Decision Making

Sociologists and anthropologists have argued that social factors such as culture, customs, and religion are very important in explaining the choices consumers make. Economists have traditionally seen such factors as being relatively unimportant, if they take them into consideration at all. Recently, however, some economists have begun to study how social factors influence consumer choice.

The Effects of Celebrity Endorsements

In many cases, it is not just the number of people who use a product that makes it desirable but the types of people who use it.

If consumers believe that movie stars or professional athletes use a product, demand for the product will often increase.
Why Do Firms Pay Tiger Woods to Endorse Their Products?

In 2006, Tiger Woods earned $12 million from playing golf and $100 million from product endorsements.

Network Externalities

Network externality This situation where the usefulness of a product increases with the number of consumers who use it.

Does Fairness Matter?

A Test of Fairness in the Economic laboratory: The Ultimatum Game Experiment

Economists have used experiments to increase their understanding of the role that fairness plays in consumer decision making.
Chapter 9: Consumer Choice and Behavioral Economics

Learning Objective 9.3

Professor Krueger Goes to the Super Bowl

Should the NFL raise the price of Super Bowl tickets?

Learning Objective 9.4

Behavioral Economics: Do People Make Their Choices Rationally?

Behavioral economics The study of situations in which people make choices that do not appear to be economically rational.

Consumers commonly commit the following three mistakes when making decisions:

• They take into account monetary costs but ignore nonmonetary opportunity costs.
• They fail to ignore sunk costs.
• They are overly optimistic about their future behavior.

Behavioral Economics: Do People Make Their Choices Rationally?

Opportunity cost The highest-valued alternative that must be given up to engage in an activity.

Endowment effect The tendency of people to be unwilling to sell a good they already own even if they are offered a price that is greater than the price they would be willing to pay to buy the good if they didn’t already own it.

Business Implications of Consumers Ignoring Nonmonetary Opportunity Costs

Behavioral economist Richard Thaler has studied several examples of how businesses make use of consumers’ failure to take into account opportunity costs.
Why Do Hilton Hotels and other Firms Hide Their Prices?

Some hotels hide what they charge for room service and Internet access.

Behavioral Economics: Do People Make Their Choices Rationally?

Failing to Ignore Sunk Costs

Sunk cost: A cost that has already been paid and cannot be recovered.

Being Unrealistic about Future Behavior

If you are unrealistic about your future behavior, you underestimate the costs of choices that you make today.

Why Don't Students Study More?

If the payoff to studying is so high, why don't students study more?
Solved Problem | 9-4

How Do You Get People to Save More of Their Income?

Use your understanding of consumer decision making to show how a savings plan may work.

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An Inside LOOK

Can Mariah Carey Get You to Buy Elizabeth Arden Perfume?

Mariah Signs Scent Deal with Arden

---

Key Terms

- Behavioral economics
- Network externality
- Budget constraint
- Opportunity cost
- Endowment effect
- Substitution effect
- Income effect
- Sunk cost
- Law of diminishing marginal utility
- Utility
- Marginal utility (MU)
Appendix

Using Indifference Curves and Budget Lines to Understand Consumer Behavior

Consumer Preferences

<table>
<thead>
<tr>
<th>CONSUMPTION BUNDLE A</th>
<th>CONSUMPTION BUNDLE B</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 slices of pizza and 1 can of Coke</td>
<td>1 slice of pizza and 1 can of Coke</td>
</tr>
</tbody>
</table>

We assume that the consumer will always be able to decide which of the following is true:

- The consumer prefers bundle A to bundle B.
- The consumer prefers bundle B to bundle A.
- The consumer is indifferent between bundle A and bundle B; that is, the consumer receives equal utility from the two bundles.

Appendix

Consumer Preferences

Indifference Curves

Indifference curve: A curve that shows the combinations of consumption bundles that give the consumer the same utility.

FIGURE 9A-1

Plotting Dave’s Preferences for Pizza and Coke

Appendix

Consumer Preferences

The Slope of an Indifference Curve

Marginal rate of substitution (MRS)
The slope of an indifference curve, which represents the rate at which a consumer would be willing to trade off one good for another.
Appendix

Consumer Preferences

Can Indifference Curves Ever Cross?

FIGURE 9A-2
Indifference Curves Cannot Cross

Appendix

The Budget Constraint

FIGURE 9A-3
Dave's Budget Constraint

Appendix

Choosing the Optimal Consumption of Pizza and Coke

FIGURE 9A-4
Finding Optimal Consumption.
Appendix

**Solved Problem 9A-3**

When Does a Price Change Make a Consumer Better Off?

![Graph](image)

Appendix

**Choosing the Optimal Consumption of Pizza and Coke**

**Deriving the Demand Curve**

![Graph](image)

Appendix

**Choosing the Optimal Consumption of Pizza and Coke**

The Income Effect and the Substitution Effect of a Price Change

![Graph](image)
Appendix

Chapter 9: Consumer Choice and Behavioral Economics

Choosing the Optimal Consumption of Pizza and Coke

How a Change in Income Affects Optimal Consumption

FIGURE 9A-9

How a Change in Income Affects the Budget Constraint

Choosing the Optimal Consumption of Pizza and Coke

How a Change in Income Affects Optimal Consumption

FIGURE 9A-10

How a Change in Income Affects Optimal Consumption

Appendix

Choosing the Optimal Consumption of Pizza and Coke

The Slope of the Indifference Curve, the Slope of the Budget Line, and the Rule of Equal Marginal Utility per Dollar Spent

FIGURE 9A-11

At the Optimum Point, the Slopes of the Indifference Curve and Budget Constraint Are the Same
Appendix

The Slope of the Indifference Curve, the Slope of the Budget Line, and the Rule of Equal Marginal Utility per Dollar Spent

The Rule of Equal Marginal Utility per Dollar Spent Revisited

(Change in the quantity of Coke \( \times MU_{\text{Coke}} \)) \( \rightarrow \) (Change in the quantity of pizza \( \times MU_{\text{Pizza}} \))

At the optimal point of consumption:

\[
\frac{MU_{\text{Pizza}}}{MU_{\text{Coke}}} = \frac{P_{\text{Pizza}}}{P_{\text{Coke}}}
\]