

# Chapter 3 Study Guide and Workbook

## Demand

### Introduction

Demand is the buyer-side foundation of the market model. Before you study supply, equilibrium, shortages, surpluses, or policy interventions, you must understand what economists mean by demand and why the concept matters. In ordinary language, people often say they “demand” a product when they merely like it or want it. In economics, however, demand is narrower and more disciplined: it refers to the quantity of a good or service that consumers are willing and able to purchase at alternative prices during a given period of time.<sup>1</sup> That definition matters because markets do not respond to wishes alone. They respond to preferences backed by purchasing power.

The demand side of the market model is also important because it explains how consumers help guide production. When large numbers of buyers increase purchases of one good and reduce purchases of another, producers receive a signal. In competitive markets, that signal influences prices, output decisions, and the allocation of scarce resources. In that sense, demand is one of the central mechanisms through which consumer preferences are translated into economic outcomes.<sup>2</sup> Alfred Marshall’s treatment of demand in *Principles of Economics* helped make this market logic a permanent part of modern economic analysis.<sup>3</sup>

This section of the study guide is built around: the law of demand, the demand schedule, the demand curve, the difference between a movement along the curve and a shift of the curve, and the major determinants that shift demand—income, tastes and preferences, related goods, expectations, and population or demographics. The discussion below restates and expands those ideas, while also making an important distinction for macroeconomics students: demand in a single market is not the same thing as aggregate demand for the economy as a whole.<sup>4</sup> If you understand this distinction early you will have an easier time later when the course turns to AD–AS analysis.

### 1. What Economists Mean by Demand

Economists define demand as a schedule or relationship showing how much of a good consumers will buy at various possible prices, holding other relevant influences constant.<sup>5</sup> Two features of that definition should be stressed.

First, demand refers to quantities at alternative prices, not to one quantity at one moment. A single purchase tells us little by itself. Demand becomes economically meaningful when it is expressed as a pattern: at a high price consumers buy less, at a lower price they buy more, and this relationship can be summarized in a table or graph.

Second, the phrase holding other things constant is essential. When economists examine the effect of price on the quantity demanded, they temporarily hold income, preferences, prices of related goods, expectations, and the number of buyers constant. Without that analytical discipline, it becomes impossible to distinguish a movement along a demand curve from a shift of the entire curve.<sup>6</sup>

Demand must also be separated from simple desire. You may want a luxury car, a larger apartment, a concert ticket, and a vacation home all at once. But economics asks a sharper question: how many of these goods or services are you willing and able to buy at alternative prices? Effective demand involves both preference and command over resources.<sup>7</sup>

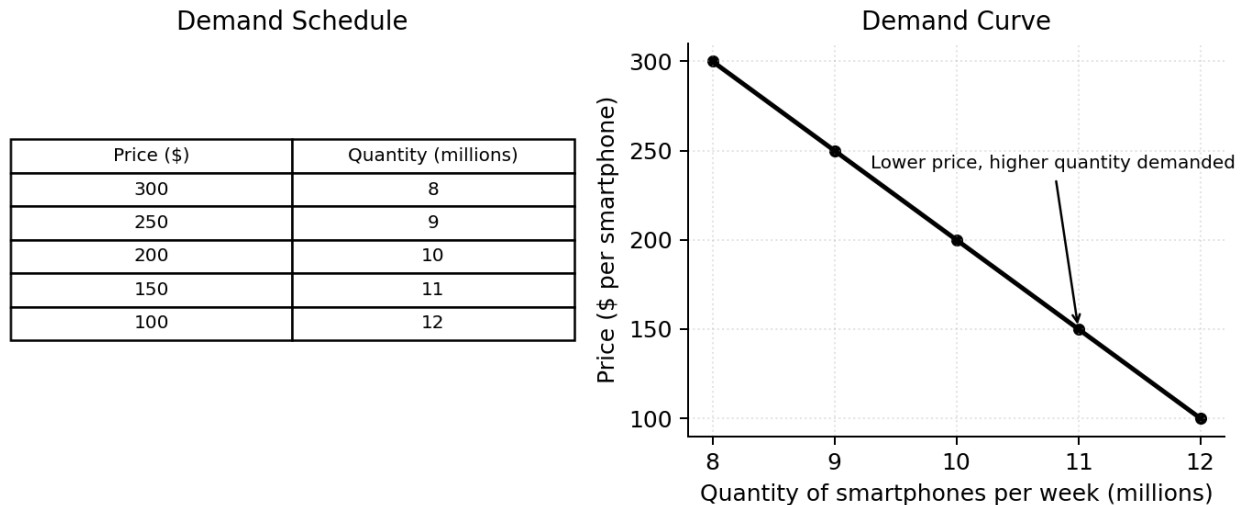
### 2. The Law of Demand

The law of demand states that, other things held constant, an increase in the price of a good leads to a decrease in the quantity demanded, while a decrease in the price leads to an increase in the quantity demanded.<sup>8</sup> This inverse relationship between price and quantity demanded is one of the most basic regularities in economics.

The law of demand is not a statement about moral approval or about what consumers should do. It is a positive claim about how buyers typically respond to price changes. Several forces help explain why the relationship is usually downward sloping.

One reason is the substitution effect. When the price of one good rises, consumers often look for alternatives. If the price of one soda brand rises, some buyers switch to another brand. If the price of restaurant meals rises, some households eat at home more often. A second reason is the income effect. When a product becomes more expensive, the consumer's purchasing power falls. Even if money income does not change, the higher price means the consumer can afford fewer total purchases.<sup>9</sup>

The law of demand is not merely a classroom rule. It helps explain real-world market behavior in housing, automobiles, consumer electronics, airline tickets, and many other markets. A rise in mortgage rates, for example, often reduces the quantity of homes demanded at each price because monthly borrowing costs rise. A large sale on appliances usually increases the quantity demanded because the lower price makes purchases more attractive and more affordable.



**Figure 1.** Demand schedule and demand curve.

### 3. Demand Schedules, Demand Curves, and Market Demand

A demand schedule is a table showing the quantity demanded at different prices. A demand curve is the graphical version of that same relationship.<sup>10</sup> In a standard graph, price is measured on the vertical axis and quantity on the horizontal axis. Because the law of demand implies an inverse relationship, the curve slopes downward from left to right.

The downward slope carries a great deal of economic meaning. It shows that lower prices increase the quantity demanded and higher prices reduce it, assuming all other demand determinants remain unchanged. You should see the graph not as decoration but as a compact visual summary of buyer behavior.

Economists also distinguish between individual demand and market demand. An individual demand curve shows how one buyer responds to price changes. A market demand curve shows the total quantity demanded by all buyers in the market at each possible price. Market demand is obtained by adding the quantities demanded by all individual buyers horizontally.<sup>11</sup> If one consumer buys 2 units at a certain price and another buys 3, market demand at that price is 5.

This idea is especially important in a macroeconomics course because it shows how individual decisions become aggregate outcomes. A single household's choice may appear small, but when millions of households respond in similar ways to income changes, interest-rate changes, or changing preferences, entire markets can expand or contract.

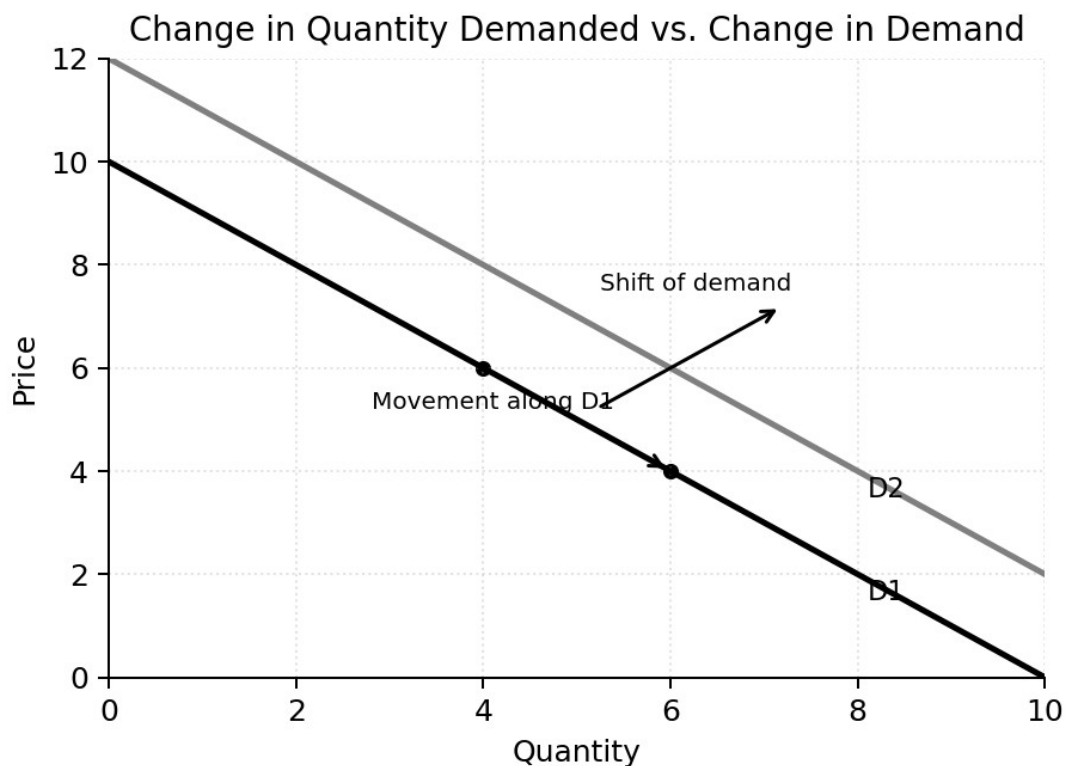
### 4. Change in Quantity Demanded versus Change in Demand

One of the most important distinctions in the study of demand is the difference between a change in quantity demanded and a change in demand. Students often confuse the two, but they are not the same.

A change in quantity demanded is a movement along a given demand curve caused only by a change in the good's own price.<sup>12</sup> If the price of smartphones falls from \$300 to \$200 and buyers move from 8 million to 10 million units per week, that is a change in quantity demanded. The demand curve itself has not moved; buyers have simply moved to a different point on the same curve.

A change in demand, by contrast, is a shift of the entire demand curve to the right or left. This happens when one of the non-price determinants changes—income, tastes, prices of related goods, expectations, or the number of buyers.<sup>13</sup> If income rises and consumers want more smartphones at every possible price, the entire demand curve shifts to the right. If a health scare causes consumers to want less of a product at every price, the entire curve shifts to the left.

This distinction matters because you will later encounter exactly the same logic in supply, aggregate demand, and long-run growth models. A graph becomes much more powerful when it is read correctly.



**Figure 2.** A movement along a demand curve is not the same as a shift of demand.

## 5. What Causes the Demand Curve to Shift?

These are the main variables that shift demand to the right or left: income, tastes and preferences, prices of related goods, expectations of future prices, and population or demographics. Each deserves separate treatment.

### 5.1 Income: Normal Goods and Inferior Goods

Income changes are one of the most common reasons demand shifts. For a normal good, an increase in income raises demand, and a decrease in income lowers demand.<sup>14</sup> Better restaurant meals, newer electronic devices, and many leisure goods often fit this category. When household income rises, buyers are willing and able to purchase more of these goods at each price.

For an inferior good, the relationship runs the other way: an increase in income reduces demand, while a decrease in income raises demand.<sup>15</sup> The term “inferior” does not mean the good is defective or worthless. It means that as consumers become better off, they shift toward preferred alternatives. A lower-cost food item, a lower-quality transit option, or a budget product may see demand decline as income rises.

You should be careful here. Whether a good is normal or inferior is an empirical question about consumer behavior, not a moral judgment about the product.



**Figure 3.** Income and demand: normal versus inferior goods.

## 5.2 Tastes and Preferences

Demand also shifts when consumer tastes, preferences, or perceptions change.<sup>16</sup> Fashion, advertising, social media influence, health information, and cultural trends can all alter willingness to buy. If a reusable cup brand becomes highly fashionable, demand may rise even if price and income remain unchanged. If medical research warns consumers away from a particular product, demand may fall.

This determinant reminds you that economics does not deny culture, psychology, or habit. Instead, it shows how those forces appear in market data: they shift demand.

## 5.3 Prices of Related Goods: Substitutes and Complements

The demand for one good often depends on the price of another. Two especially important relationships are substitutes and complements.<sup>17</sup>

Substitute goods are goods that can be used in place of one another. If the price of Pepsi rises, some consumers may switch to Coca-Cola, increasing the demand for Coca-Cola. In this case, the higher price of one product shifts the demand curve for the substitute to the right.

Complementary goods are goods commonly used together. If the price of printers rises sharply, the demand for printer ink may fall because fewer printers are purchased. If the price of gasoline rises enough, the demand for large fuel-intensive vehicles may decline. Here the higher price of one good shifts the demand curve for its complement to the left.<sup>18</sup>

These relationships are important because they show that markets are interconnected. A change in one market can spill over into another.

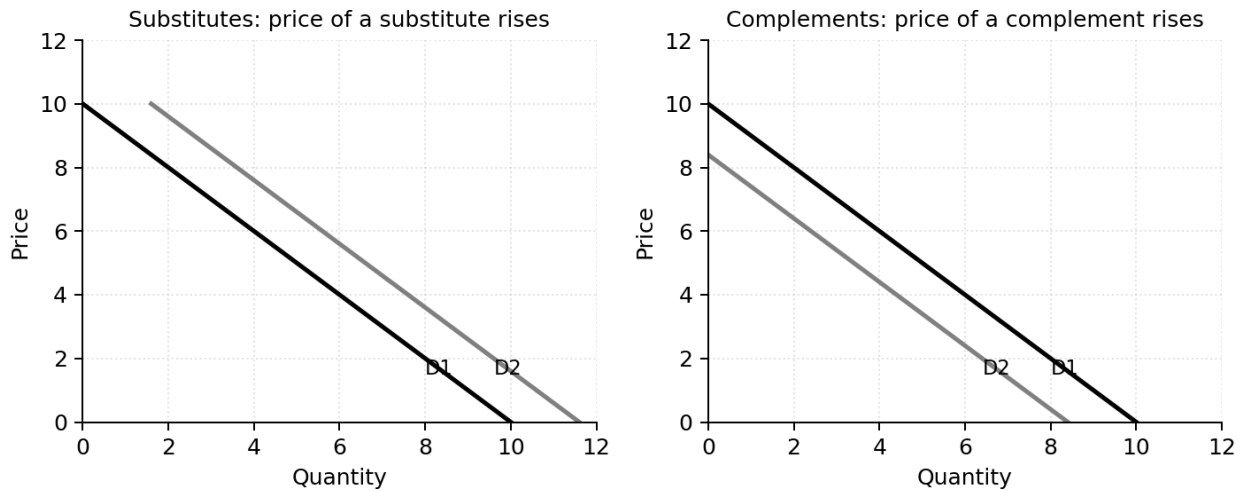


Figure 4. Prices of related goods: substitutes and complements.

### 5.4 Expectations of Future Prices or Income

Consumer expectations can also shift current demand. If households expect gasoline prices to rise next week, some may buy more gasoline now, shifting current demand to the right. If consumers expect a major technology product to go on sale next month, they may delay purchases today, shifting current demand to the left.<sup>19</sup>

Expectations make demand forward-looking. Buyers do not respond only to present conditions; they often respond to what they believe is likely to happen.

### 5.5 Population and Demographics

A final major determinant is the size and composition of the market. If population increases, if a region experiences in-migration, or if demographic change increases the number of likely buyers, demand tends to rise.<sup>20</sup> Housing demand, school enrollment, health-care services, and grocery demand often change as population and demographics change.

This determinant is especially useful for macro students because it connects micro demand analysis to broader economic trends. Rapid population growth can raise demand in many individual markets at once, while aging populations can change the composition of demand across health care, housing, transportation, and consumer durables.

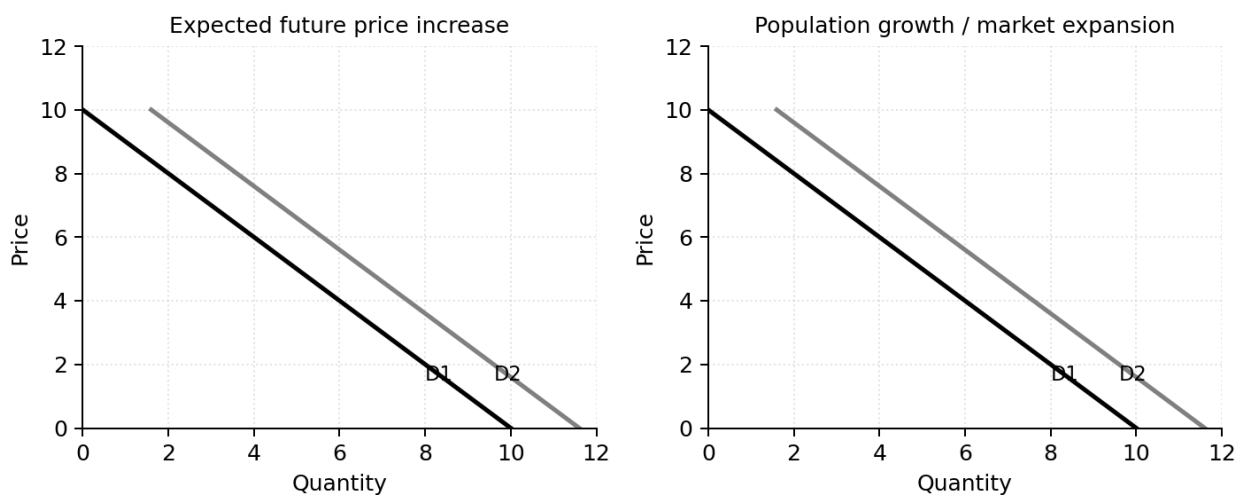


Figure 5. Expectations and population growth both shift demand.

## 6. Why the Study of Demand Matters

Demand analysis matters because it explains how consumers influence market outcomes. Producers may organize production, but they do not decide in a vacuum what should be produced. They respond to the buying decisions of households, firms, and institutions. When demand rises, prices and quantities tend to respond. When demand falls, producers receive the opposite signal.<sup>21</sup>

The concept is also important because it disciplines economic thinking. Students learn not to treat every market change as mysterious or random. Instead, they can ask systematic questions: Did the product's own price change? Did income change? Did preferences shift? Did a related good become more expensive? Did expectations or demographics change? This structured approach is one reason supply-and-demand analysis remains foundational in economics.<sup>22</sup>

Finally, the study of demand prepares you for later macroeconomic topics. Housing markets, gasoline markets, food markets, and labor-intensive consumer services all reflect market demand conditions. Later in the course, when you study aggregate demand, they will encounter a broader economy-wide concept. The language is similar, but the object is different. Market demand concerns a specific good or service; aggregate demand concerns total planned expenditure on domestic output. Students who master ordinary demand first are much better prepared for that later transition.<sup>23</sup>

## 7. A Brief Macroeconomic Bridge

Because this course is macroeconomics-centered, one clarification is especially important. The demand curve studied here is a microeconomic market demand curve. It shows the relationship between the price of one good and the quantity demanded of that good, holding other influences constant.

By contrast, aggregate demand is a macroeconomic concept that shows the relationship between the overall price level and the total quantity of real GDP demanded in the economy. The two models share some graphing language, but they answer different questions.<sup>24</sup>

This distinction should not discourage you. Instead, it should help you see how economics is built. Microeconomic demand analysis teaches how one market works. Macroeconomics later combines many markets and many spending decisions into a broader economy-wide model.

## Summary

Demand refers to the quantity of a good or service that consumers are willing and able to buy at alternative prices during a given period. The law of demand states that, other things held constant, higher prices reduce the quantity demanded and lower prices increase it. A demand schedule lists quantities demanded at different prices, and a demand curve presents that relationship graphically. Market demand is the horizontal sum of all individual demands.

Students must distinguish between a change in quantity demanded and a change in demand. A change in quantity demanded is a movement along a given demand curve caused only by a change in the product's own price. A change in demand is a rightward or leftward shift of the entire curve caused by one of the non-price determinants. The main determinants that shift demand are income, tastes and preferences, prices of related goods, expectations, and population or demographics.

The study of demand matters because it helps explain how consumers guide production, how markets respond to changing conditions, and how economists organize complex real-world behavior into a workable analytical model. It also provides the conceptual bridge from individual markets to later study of aggregate demand in macroeconomics.

## Review and Workbook Questions

### A. Core Concept Questions

1. In economics, why is demand more than simply wanting a good?
2. State the law of demand in one clear sentence.
3. Explain the difference between an individual demand curve and a market demand curve.

4. Why is the phrase “other things held constant” necessary when drawing a demand curve?
5. Why is a change in quantity demanded not the same thing as a change in demand?

### B. Graph and Analysis Questions

6. Draw a downward-sloping demand curve for smartphones. Show a movement from one point to another caused by a change in price. Explain what happened.
7. On a separate graph, show a rightward shift in demand caused by higher consumer income for a normal good. Explain why this is not a movement along the curve.
8. Draw a graph showing how a rise in the price of Pepsi could shift the demand curve for Coca-Cola. Label the axes clearly.
9. Use a graph to show how a rise in the price of gasoline might affect the demand for large sport utility vehicles. Explain the relationship involved.
10. Explain why a decline in population in a local town might shift the demand curve for rental housing.

### C. Applied Short-Answer Questions

11. A retailer lowers the price of winter coats at the end of the season and sales increase. Is this a change in quantity demanded or a change in demand? Explain carefully.
12. Household income rises, and consumers buy more steak but less hamburger. Which good is behaving as a normal good, and which is behaving as an inferior good?
13. A rumor spreads that laptop prices will rise sharply next month. How would this affect current demand if consumers believe the rumor?
14. A celebrity endorses a certain reusable water bottle brand and purchases increase at every price. What has happened to demand and why?
15. Why does a rise in the price of one good sometimes increase demand for another good?

### D. Critical-Thinking Questions

16. Why is it useful for economists to separate changes caused by a product’s own price from changes caused by income, expectations, or preferences?
17. Suppose the demand for housing rises in a city at the same time mortgage interest rates also rise. Why might housing demand still increase despite the higher borrowing cost?
18. Explain how the study of demand helps answer the broader economic question of what should be produced.
19. Why is demand analysis important for public policy, even though the demand model itself is not a policy recommendation?
20. In what way does understanding ordinary market demand prepare a student to understand aggregate demand later in macroeconomics?

## Endnotes

1. Steven A. Greenlaw, David Shapiro, and Daniel MacDonald, *Principles of Economics 3e* (Houston: OpenStax, 2022); CORE Team, *Economy, Society, and Public Policy* (Oxford: Oxford University Press, 2019).
2. Greenlaw, Shapiro, and MacDonald, *Principles of Economics 3e*; Paul Krugman and Robin Wells, *Economics*, 7th ed. (New York: Macmillan Learning, 2024).
3. Alfred Marshall, *Principles of Economics*, 8th ed. (London: Macmillan, 1920).
4. Greenlaw, Shapiro, and MacDonald, *Principles of Economics 3e*; CORE Team, *Economy, Society, and Public Policy*.
5. Robert S. Pindyck and Daniel L. Rubinfeld, *Microeconomics*, 9th ed. (Boston: Pearson, 2021), chap. 2; Greenlaw, Shapiro, and MacDonald, *Principles of Economics 3e*.
6. Hal R. Varian and Marc Melitz, *Intermediate Microeconomics: A Modern Approach*, 10th ed. (New York: W. W. Norton, 2024); Pindyck and Rubinfeld, *Microeconomics*, chap. 2.
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