# Consumer Demand



## **LEARNING OBJECTIVES**

After reading this chapter, you should know:

- L01. The basis for the law of demand.
- LO2. What price and income elasticities of demand measure.
- LO3. How consumers maximize utility.

**teve Jobs knew** he had a winner with the iPhone. Every time Apple added a feature to the iPod, sales picked up. Now Jobs had a product that combined cell phone services with wireless computing and audio and video download capabilities-all accessible on a touch screen. It was sure to be a hit. The only sticky question was price. What price should Apple put on its new iPhone? Its goal was to sell 10 million iPhones in the first 2 years of production. If it set the price low enough, it could surely do that. But Apple didn't want to give away the iPhone-it wanted to make a nice profit. Yet, if it set the price too high, sales would fall short of its sales target. What price should it charge? Apple's pricing committee had to know how many iPhones consumers would buy at different prices. In other words, they had to know the dimensions of consumer demand. After considerable deliberation, they set the initial price at \$499 for the 4-GB iPhone, launched in January 2007.

Apple's iPhone pricing dilemma underscores the importance of *prices* in determining consumer behavior. Consumers "want," "need," and "just have to have" a vast array of goods and services. When decision time comes, however, product *prices* often dictate what consumers will actually buy. As we observed in Chapter 3, the quantity of a product *demanded* depends on its price.

This chapter takes a closer look at how product prices affect consumer decisions. We focus on three related questions:

- How do we decide how much of any good to buy?
- How does a change in a product's price affect the quantity we purchase or the amount of money we spend on it?
- Why do we buy certain products but not others?

The law of demand (first encountered in Chapter 3) gives us some clues for answering these questions. But we need to look beyond that law to fashion more complete answers. We need to know what forces give demand curves their downward-sloping shape. We also need to know more about how to *use* demand curves to predict consumer behavior.

## **DETERMINANTS OF DEMAND**

In seeking explanations for consumer behavior, we have to recognize that the field of economics doesn't have all the answers. But it does offer a unique perspective that sets it apart from other fields of study.

Consider first the explanations of consumer behavior offered by other fields of study. Psychiatrists and psychologists have had a virtual field day formulating such explanations. Freud was among the first to describe us humans as bundles of subconscious (and unconscious) fears, complexes, and anxieties. From a Freudian perspective, we strive for ever higher levels of consumption to satisfy basic drives for security, sex, and ego gratifications. Like the most primitive of people, we clothe and adorn ourselves in ways that assert our identity and worth. We eat and smoke too much because we need the oral gratifications and security associated with mother's breast. Oversized homes and cars give us a source of warmth and security remembered from the womb. On the other hand, we often buy and consume some things we expressly don't desire, just to assert our rebellious feelings against our parents (or parent substitutes). In Freud's view, it's the constant interplay of these id, ego, and superego drives that motivates us to buy, buy, buy.

Sociologists offer additional explanations for our consumption behavior. They observe our yearning to stand above the crowd, to receive recognition from the masses. For people with exceptional talents, such recognition may come easily. But for the ordinary person, recognition may depend on conspicuous consumption. A sleek car, a newer fashion, a more exotic vacation become expressions of identity that provoke recognition, even social acceptance. We strive for ever higher levels of consumption—not just to keep up with the Joneses but to surpass them.

Not *all* consumption is motivated by ego or status concerns. Some food is consumed for the sake of self-preservation, some clothing worn for warmth, and some housing built for shelter. The typical U.S. consumer has more than enough income to satisfy these basic needs, however. In today's economy, most consumers also have *discretionary* income that can be used to satisfy psychological or sociological longings. Single women are able to spend a lot of money on clothes and pets, and men spend freely on entertainment, food, and drink (see News). Teenagers show off their affluence in purchases of electronic goods, cars, and clothes (see Figure 5.1).

RNTD

## The Sociopsychiatric Explanation

# webnote

Each year the Bureau of Labor does another consumer expenditure survey. For the most recent data, visit www.bls.gov and first click on "Demographics" and then "Consumer Spending"

# IN THE NEWS

#### Men vs. Women: How They Spend

Are men really different from women? If spending habits are any clue, males do differ from females. That's the conclusion one would draw from the latest Bureau of Labor Statistics (BLS) survey of consumer expenditure. Here's what BLS found out about the spending habits of young (under age 25) men and women who are living on their own:

#### **Common Traits**

- Young men have slightly more income to spend (\$18,189 per year) than do young women (\$15,421). Both sexes go deep into debt, however, by spending \$4,000-\$5,000 more than their incomes.
- Neither sex spends much on charity, reading, or health care.

#### **Distinctive Traits**

- Young men spend 15 percent more at fast-food outlets, restaurants, and carryouts.
- Men spend 70 percent more on alcoholic beverages and smoking.
- Men spend almost twice as much as women do on television and stereo equipment.
- Young women spend twice as much money on clothing, personal care items and their pets.

Source: U.S. Bureau of Labor Statistics, 2004–2005, Consumer Expenditure Survey. www.bls.gov

**Analysis:** Consumer patterns vary by gender, age, and other characteristics. Economists try to isolate the common influences on consumer behavior.

Le Mo

#### FIGURE 5.1 Affluent Teenagers

Teenagers spend over \$200 billion a year. Much of this spending is for cars, stereos, and other durables. The percentage of U.S. teenagers owning certain items is shown here.

Source: Teenage Research Unlimited (2006 data).



### The Economic Explanation

**demand:** The willingness and ability to buy specific quantities of a good at alternative prices in a given time period, *ceteris paribus*. Although psychiatrists and sociologists offer intriguing explanations for our consumption patterns, their explanations fall a bit short. Sociopsychiatric theories tell us why teenagers, men, and women *desire* certain goods and services. But they don't explain which goods will actually be *purchased*. Desire is only the first step in the consumption process. To acquire goods and services, one must be willing and able to *pay* for one's wants. Producers won't give you their goods just to satisfy your Freudian desires. They want money in exchange for their goods. Hence, *prices and income are just as relevant to consumption decisions as are more basic desires and preferences*.

In explaining consumer behavior, economists focus on the *demand* for goods and services. As we observed in Chapter 3, **demand** entails the *willingness and ability to pay* for goods and services. To say that someone *demands* a particular good means that he or she will offer to *buy* it at some price(s). *An individual's demand for a specific product is determined by these four factors:* 

- *Tastes* (desire for this and other goods).
- *Income* (of the consumer).
- *Expectations* (for income, prices, tastes).
- Other goods (their availability and prices).

Note again that desire (tastes) is only one determinant of demand. Other determinants of demand (income, expectations, and other goods) also influence whether a person will be willing and able to buy a certain good at a specific price.

The remainder of this chapter examines these determinants of demand. The objective is not only to explain consumer behavior but also to predict how consumption patterns change in response to *changes* in the price of a good or to *changes* in underlying tastes, income, prices or availability of other goods, or expectations.

## THE DEMAND CURVE

The starting point for an economic analysis of demand is quite simple. Economists accept consumer tastes as the outcome of sociopsychiatric and cultural influences. They don't look beneath the surface to see how those tastes originated. Economists want to know only how those tastes (desires) affect consumption decisions.

The first observation economists make is that the more pleasure a product gives us, the higher the price we'd be willing to pay for it. If the oral sensation of buttered popcorn at the movies really turns you on, you're likely to be willing to pay dearly for it. If, on the other hand, you have no great taste or desire for popcorn, the theater might have to give it away before you'd eat it.

**Total vs. Marginal Utility.** Economists use the term **utility** to refer to the expected pleasure, or satisfaction, obtained from goods and services. We also make an important distinction between total utility and marginal utility. **Total utility** refers to the amount of satisfaction obtained from your *entire* consumption of a product. By contrast, **marginal utility** refers to the amount of satisfaction you get from consuming the *last* (i.e., "marginal") unit of a product. More generally, note that

 $\frac{\text{Marginal}}{\text{utility}} = \frac{\text{change in total utility}}{\text{change in quantity}}$ 

**Diminishing Marginal Utility.** The concepts of total and marginal utility explain not only why we buy popcorn at the movies but also why we stop eating it at some point. Even people who love popcorn (i.e., derive great *total* utility from it) don't eat endless quantities of it. Why not? Presumably because the thrill diminishes with each mouthful. The first box of popcorn may bring sensual gratification, but the second or third box is likely to bring a stomachache. We express this change in perceptions by noting that the *marginal* utility of the first box of popcorn is higher than the additional or *marginal* utility derived from the second box.

The behavior of popcorn connoisseurs isn't abnormal. As a rule, the amount of additional utility we obtain from a product declines as we continue to consume it. The third slice of pizza isn't as desirable as the first, the sixth beer not as satisfying as the fifth, and so forth. Indeed, this phenomenon of diminishing marginal utility is so nearly universal that economists have fashioned a law around it. This **law of diminishing marginal utility** states that each successive unit of a good consumed yields less *additional* utility.

The law of diminishing marginal utility does *not* say that we won't like the second box of popcorn, the third pizza slice, or the sixth beer; it just says we won't like them as much as the ones we've already consumed. Time is also important here: If the first box of popcorn was eaten last year, the second box may now taste just as good. The law of diminishing marginal utility applies to short time periods.

Figure 5.2 on the next page illustrates how utility changes with the level of consumption. Notice that total utility continues to rise as we consume the first five boxes (ugh!) of popcorn. But total utility increases by smaller and smaller increments. Each successive step of the total utility curve in Figure 5.2 is a little smaller.

The height of each step of the total utility curve in Figure 5.2 represents *marginal* utility—the increments to total utility. *Marginal* utility is clearly diminishing. Nevertheless, because marginal utility is still *positive*, total utility is increasing. *As long as marginal utility is positive, total utility must be increasing* (note that the total utility curve is still rising for the fifth box of popcorn).

The situation changes with the sixth box of popcorn. According to Figure 5.2, the good sensations associated with popcorn consumption are completely forgotten by the time the sixth box arrives. Nausea and stomach cramps take over. Indeed, the sixth box is absolutely *distasteful*, as reflected in the downturn of *total* utility and the *negative* value for marginal utility. We were happier—in possession of more total utility—with only five boxes of popcorn. The sixth box—yielding *negative* marginal utility—reduces total satisfaction. This is the kind of sensation you'd probably experience if you ate six hamburgers (see cartoon).

Not every good ultimately reaches negative marginal utility. Yet the more general principle of diminishing marginal utility is experienced daily. That is, *eventually additional quantities of a good yield increasingly smaller increments of satisfaction*. **Utility Theory** 

**utility:** The pleasure or satisfaction obtained from a good or service.

total utility: The amount of satisfaction obtained from entire consumption of a product.

marginal utility: The change in total utility obtained by consuming one additional (marginal) unit of a good or service.

law of diminishing marginal utility: The marginal utility of a good declines as more of it is consumed in a given time period.

# webnote

Do Americans have a taste for Jumbo Jacks? Go to facts at www.jackinthebox.com



#### FIGURE 5.2 Total vs. Marginal Utility

# The *total* utility derived from consuming a product comes from the *marginal* utilities of each successive unit. The total utility curve shows how each of the first five boxes of popcort contributes to total

utility. Note that each successive step is smaller. This reflects the law of diminishing marginal utility. The sixth box of popcorn causes the total-utility steps to descend; the sixth box actually *reduces* total utility. This means that the sixth box has *negative* marginal utility.

The marginal utility curve (*b*) shows the change in total utility with each additional unit. It's derived from the total utility curve. Marginal utility here is positive but diminishing for the first five boxes.

# **Price and Quantity**

Marginal utility is essentially a measure of how much we desire particular goods, our *taste*. But which ones will we buy? Clearly, we don't always buy the products we most desire. *Price* is often a problem. All too often we have to settle for goods that yield less marginal utility simply because they are available at a lower price. This explains why most people don't drive Porsches. Our desire ("taste") for a Porsche may be great, but its price is even greater. The challenge for most of us is to somehow reconcile our tastes with our bank balances.



**Analysis:** No matter how much we like a product, marginal utility is likely to diminish as we consume more of it. If marginal utility becomes *negative* (as here), total satisfaction will decrease.

In deciding whether to buy something, our immediate focus is typically on a single variable, namely *price*. Assume for the moment that a person's tastes, incomes, and expectations are set in stone, and that the prices of other goods are set as well. This is the *ceteris paribus* assumption we first encountered in Chapter 1. It doesn't mean that other influences on consumer behavior are unimportant. Rather, *ceteris paribus* simply allows us to focus on one variable at a time. In this case, we are focusing on price. What we want to know is how high a price a consumer is willing to pay for another unit of a product. This is the question Steve Jobs had to confront when Apple launched the iPhone.

The concepts of marginal utility and *ceteris paribus* enable us to answer this question. The more marginal utility a product delivers, the more a consumer will be willing to pay for it. We also noted that marginal utility *diminishes* as increasing quantities of a product are consumed, suggesting that consumers are willing to pay progressively *less* for additional quantities of a product. The moviegoer willing to pay so much for a second or third ounce. The same is true for a second pizza, the sixth beer, and so forth. *With given income, tastes, expectations, and prices of other goods and services, people are willing to buy additional quantities of a good only if its price falls.* In other words, as the marginal utility of a good diminishes, so does our willingness to pay. This **law of demand** is illustrated in Figure 5.3 with the downward-sloping **demand curve.** 

The law of demand and the law of diminishing marginal utility tell us nothing about why we crave popcorn or why our cravings subside. Those explanations are reserved for psychiatrists, sociologists, and physiologists. The laws of economics simply describe our market behavior.



	Price (per ounce)	Quantity Demanded (ounces per show)
А	\$0.50	1
В	0.45	2
С	0.40	4
D	0.35	6
E	0.30	9
F	0.25	12
G	0.20	16
H	0.15	20
1	0.10	25
1	0.05	30
)	0.05	50

*ceteris paribus:* The assumption of nothing else changing.

law of demand: The quantity of a good demanded in a given time period increases as its price falls, *ceteris paribus*.

demand curve: A curve describing the quantities of a good a consumer is willing and able to buy at alternative prices in a given period, *ceteris paribus*.

#### FIGURE 5.3 An Individual's Demand Schedule and Curve

Consumers are generally willing to buy larger quantities of a good at lower prices. This demand schedule illustrates the specific quantities demanded at alternative prices. If popcorn sold for 25 cents per ounce, this consumer would buy 12 ounces per show (row *F*). At higher prices, less popcorn would be purchased.

A downward-sloping demand curve expresses the law of demand: The quantity of a good demanded increases as its price falls. Notice that points *A* through *J* on the curve correspond to the rows of the demand schedule.