

TABLE 3.1 Market Demand for Corn, Three Buyers

Price per Bushel	Quantity Demanded			Total Quantity Demanded per Week			
	Joe	Jen	Jay				
\$5	10	+	12	+	8	=	30
4	20	+	23	+	17	=	60
3	35	+	39	+	26	=	100
2	55	+	60	+	39	=	154
1	80	+	87	+	54	=	221

consumers at each of the various possible prices, we can get from *individual* demand to *market* demand. If there are just three buyers in the market, as represented in Table 3.1, it is relatively easy to determine the total quantity demanded at each price. Figure 3.2 shows the graphical summing procedure: At each price we add the individual quantities demanded to obtain the total quantity demanded at that price; we then plot the price and the total quantity demanded as one point on the market demand curve.

Competition, of course, ordinarily entails many more than three buyers of a product. To avoid hundreds or thousands or millions of additions, we suppose that all the buyers in a market are willing and able to buy the same amounts at each of the possible prices. Then we just multiply those amounts by the number of buyers to obtain the market demand. That is how we arrived at curve  $D_1$  in Figure 3.3 for a market of 200 corn buyers, each with a demand as shown in the table in Figure 3.1. Table 3.2 shows the calculations.

In constructing a demand curve such as  $D_1$  in Figure 3.3, economists assume that price is the most important influence on the amount of any product purchased. But economists know that other factors can and do affect purchases. These factors, called **determinants of demand**, are assumed to be constant when a demand curve like  $D_1$  is drawn. They are the “other things equal” in the

relationship between price and quantity demanded. When any of these determinants changes, the demand curve will shift to the right or left. For this reason, determinants of demand are sometimes referred to as *demand shifters*.

The basic determinants of demand are (1) consumers’ tastes (preferences), (2) the number of buyers in the market, (3) consumers’ incomes, (4) the prices of related goods, and (5) consumer expectations.

## Change in Demand

A change in one or more of the determinants of demand will change the demand data (the demand schedule) in Table 3.2 and therefore the location of the demand curve in Figure 3.3. A change in the demand schedule or, graphically, a shift in the demand curve is called a *change in demand*.

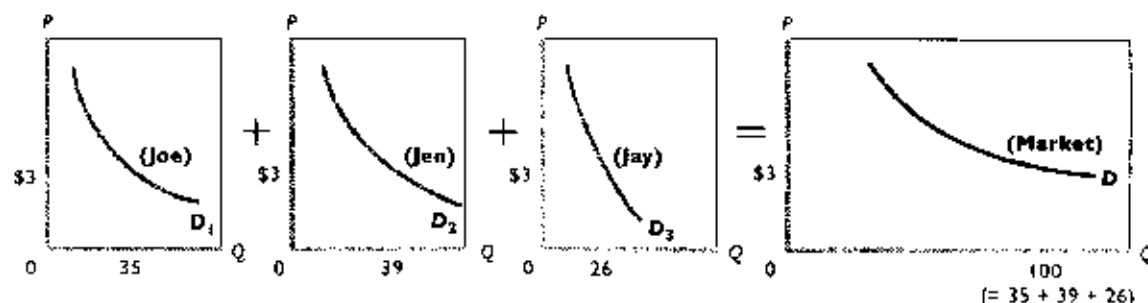
If consumers desire to buy more corn at each possible price than is reflected in column 4 in Table 3.2, that *increase in demand* is shown as a shift of the demand curve to the right, say, from  $D_1$  to  $D_2$ . Conversely, a *decrease in demand* occurs when consumers buy less corn at each possible price than is indicated in column 4, Table 3.2. The leftward shift of the demand curve from  $D_1$  to  $D_3$  in Figure 3.3 shows that situation.

Now let’s see how changes in each determinant affect demand.

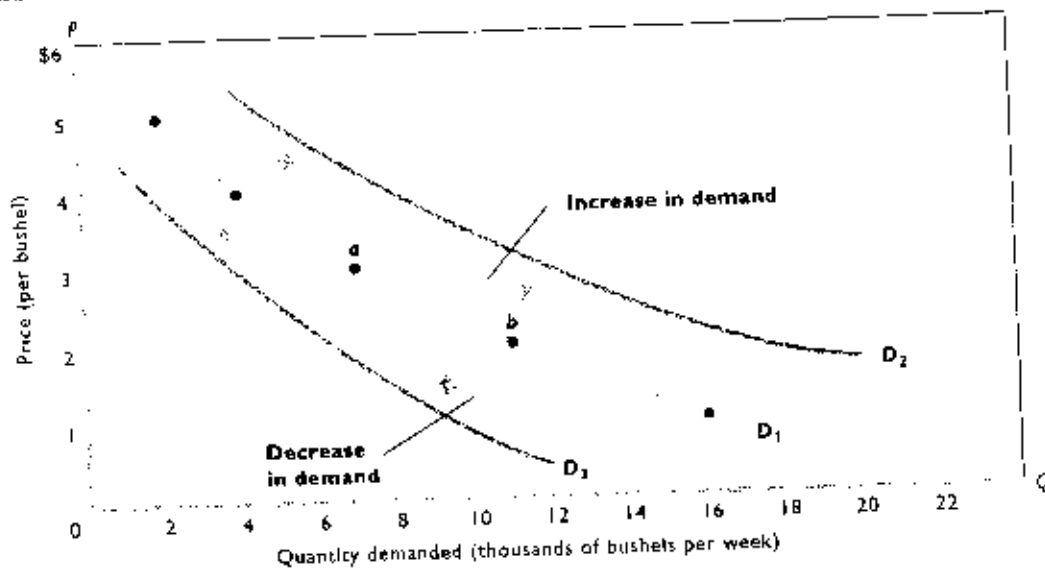
**Tastes** A favorable change in consumer tastes (preferences) for a product—a change that makes the product more desirable—means that more of it will be demanded at each price. Demand will increase; the demand curve will shift rightward. An unfavorable change in consumer preferences will decrease demand, shifting the demand curve to the left.

New products may affect consumer tastes; for example, the introduction of digital cameras greatly decreased the demand for film cameras. Consumers’ concern over the health hazards of cholesterol and obesity have increased

FIGURE 3.2 Market demand for corn, three buyers. We establish the market demand curve  $D$  by adding horizontally the individual demand curves ( $D_1$ ,  $D_2$ , and  $D_3$ ) of all the consumers in the market. At the price of \$3, for example, the three individual curves yield a total quantity demanded of 100 bushels.



**Changes in the demand for corn.** A change in one or more of the determinants of demand causes a change in demand. An increase in demand is shown as a shift of the demand curve to the right, as from  $D_1$  to  $D_2$ . A decrease in demand is shown as a shift of the demand curve to the left, as from  $D_1$  to  $D_3$ . These changes in demand are to be distinguished from a change in quantity demanded, which is caused by a change in the price of the product, as shown by a movement from, say, point  $a$  to point  $b$  on fixed demand curve  $D_1$ .



the demand for broccoli, low-calorie beverages, and fresh fruit while decreasing the demand for beef, veal, eggs, and whole milk. Over the past several years, the demand for coffee drinks and bottled water has greatly increased, driven by a change in tastes. So, too, has the demand for DVDs and MP3 players.

**Number of Buyers** An increase in the number of buyers in a market is likely to increase product demand; a decrease in the number of buyers will probably decrease demand. For example, the rising number of older persons in the United States in recent years has increased the demand for motor homes, medical care, and retirement communities. Large-scale immigration from Mexico has greatly increased the demand for a range of goods and services in

the Southwest, including Mexican food products in local grocery stores. Improvements in communications have given financial markets international range and have thus increased the demand for stocks and bonds. International trade agreements have reduced foreign trade barriers to American farm commodities, increasing the number of buyers and therefore the demand for those products.

In contrast, the out-migration from many small rural communities has reduced the population and thus the demand for housing, home appliances, and auto repair in those towns.

**Income** How changes in income affect demand is a more complex matter. For most products, a rise in income causes an increase in demand. Consumers typically buy more steaks, furniture, and electronic equipment as their incomes increase. Conversely, the demand for such products declines as their incomes fall. Products whose demand varies *directly* with money income are called *superior goods*, or *normal goods*.

Although most products are normal goods, there are some exceptions. As incomes increase beyond some point, the demand for used clothing, retread tires, and third-hand automobiles may decrease, because the higher incomes enable consumers to buy new versions of those products. Rising incomes may also decrease the demand for soy-enhanced hamburger. Similarly, rising incomes may cause the demand for charcoal grills to decline as wealthier consumers

Market Demand for Corn, 200 Buyers

(1) Price per Bushel	(2) Quantity Demanded per Week, Single Buyer	(3) Number of Buyers in the Market	(4) Total Quantity Demanded per Week
\$5	10	200	2,000
4	20	200	4,000
3	35	200	7,000
2	55	200	11,000
1	80	200	16,000

switch to gas grills. Goods whose demand varies *inversely* with money income are called **inferior goods**.

**Prices of Related Goods** A change in the price of a related good may either increase or decrease the demand for a product, depending on whether the related good is a substitute or a complement:

- A **substitute good** is one that can be used in place of another good.
- A **complementary good** is one that is used together with another good.

**Substitutes** Leather jackets and fleece jackets are substitute goods or, simply, *substitutes*. When two products are substitutes, an increase in the price of one will increase the demand for the other. Conversely, a decrease in the price of one will decrease the demand for the other. For example, when the prices of leather jackets rise, consumers will buy fewer leather jackets and increase their demand for fleece jackets. When the price of Colgate toothpaste declines, the demand for Crest decreases. So it is with other product pairs such as Nikes and Reeboks, Budweiser and Miller beer, or Chevrolets and Fords. They are *substitutes in consumption*.

**Complements** Because complementary goods (or, simply, *complements*) are used together, they are typically demanded jointly. Examples include computers and software, cell phones and cellular service, and snowboards and lift tickets. If the price of a complement (for example, lettuce) goes up, the demand for the related good (salad dressing) will decline. Conversely, if the price of a complement (for example, tuition) falls, the demand for a related good (textbooks) will increase.

**Unrelated Goods** The vast majority of goods are not related to one another and are called *independent goods*. Examples are butter and golf balls, potatoes and automobiles, and bananas and wristwatches. A change in the price of one has little or no effect on the demand for the other.

**Consumer Expectations** Changes in consumer expectations may shift demand. A newly formed expectation of higher future prices may cause consumers to buy now in order to “beat” the anticipated price rises, thus increasing current demand. That is often what happens in so-called hot real estate markets. Buyers rush in because they think the price of new homes will continue to escalate rapidly. Some buyers fear being “priced out of the market” and therefore not obtaining the home they desire. Other buyers—speculators—believe they will be able to sell the houses later at a higher price. Whichever their motivation, these buyers increase the demand for houses.

Similarly, a change in expectations concerning future income may prompt consumers to change their current spending. For example, first-round NFL draft choices may splurge on new luxury cars in anticipation of a lucrative professional football contract. Or workers who become fearful of losing their jobs may reduce their demand for, say, vacation travel.

In summary, an *increase in demand*—the decision by consumers to buy larger quantities of a product at each possible price—may be caused by:

- A favorable change in consumer tastes.
- An increase in the number of buyers.
- Rising incomes if the product is a normal good.
- Falling incomes if the product is an inferior good.
- An increase in the price of a substitute good.
- A decrease in the price of a complementary good.
- A new consumer expectation that either prices or income will be higher in the future.

You should “reverse” these generalizations to explain a *decrease in demand*. Table 3.3 provides additional illustrations of the determinants of demand. (**Key Question 3**)

### Changes in Quantity Demanded

A *change in demand* must not be confused with a *change in quantity demanded*. A **change in demand** is a shift of the demand curve to the right (an increase in demand) or to the left (a decrease in demand). It occurs because the consumer’s state of mind about purchasing the product has been altered in response to a change in one or more of

TABLE 3.3 Determinants of Demand: Factors That Shift the Demand Curve

Determinant	Examples
Change in buyer tastes	Physical fitness rises in popularity, increasing the demand for jogging shoes and bicycles; patriotism rises, increasing the demand for flags.
Change in number of buyers	A decline in the birthrate reduces the demand for children’s toys.
Change in income	A rise in incomes increases the demand for normal goods such as restaurant meals, sports tickets, and necklaces while reducing the demand for inferior goods such as cabbage, turnips, and inexpensive wine.
Change in the prices of related goods	A reduction in airfares reduces the demand for bus transportation (substitute goods); a decline in the price of DVD players increases the demand for DVD movies (complementary goods).
Change in consumer expectations	Inclement weather in South America creates an expectation of higher future prices of coffee beans, thereby increasing today’s demand for coffee beans.