
UNIT 4 DEMAND CONCEPTS AND ANALYSIS

Objectives

After studying this unit, you should be able to:

- **define** demand and its determinants;
- **explain** the Law of Demand;
- **identify** differences between Firm's Demand Curve and Market Demand Curve.

Structure

- 4.1 Introduction
- 4.2 The Demand Function
- 4.3 The Law of Demand
- 4.4 The Market Demand Curve
- 4.5 The Determinants of Demand
- 4.6 The Product's Price as a Determinant of Demand
- 4.7 Income as a Determinant of Demand
- 4.8 Tastes and Preferences as Determinants of Demand
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4.1 INTRODUCTION

Demand refers to the quantities of goods that consumers are *willing and able* to purchase at various prices during a given period of time. For your demand to be meaningful in the marketplace you must be *able* to make a purchase; that is, you must have enough money to make the purchase. There are, no doubt, many items for which you have a willingness to purchase, but you may not have an effective demand for them because you don't have the money to actually make the purchase. For example, you might like to have a 3600-square-foot resort in Mussorie, an equally large beach house in Goa, and a private jet to travel between these places on weekends and between semesters. But it is likely that you have a budget constraint that prevents you from having these items.

For demand to be effective, a consumer must also be willing to make the purchase. There are many products that you could afford (that is, you have the ability to buy them), but for which you may not be willing to spend your income. Each of us has a unique perspective on our own personal satisfaction and the things that may enhance that satisfaction. The important point is that if you do not expect the consumption of something to bring you added satisfaction, you will not be willing to purchase that good or service. Therefore, you do not have a demand for such things despite the fact that you might be able to afford them.

When we discuss demand, we are always referring to purchases made during a *given period of time*. For example, you might have a weekly demand for soft

drinks. If you are willing and able to buy four soft drinks at a price of Rs 5.00 each, your demand is four soft drinks a week. But your demand for shoes may be better described on a yearly basis so that, at an average price of Rs. 800.00 a pair, you might buy three pairs of shoes per year. The important point here is that when we refer to a person's demand for a product, we usually mean the demand over some appropriate time period, not necessarily over the rest of the person's life.

Think about the last time you spent money. It could have been spent on a car, a computer, a new tennis racket, or a ticket to a movie, among literally thousands of other things. No matter what you purchased, you decided to buy something because it would please you. You are not forced to make purchases. You do so because you expect them to increase your personal satisfaction.

If these things give us satisfaction, we say that they have value to us. Used in this way, value implies value in use. Air has a value in use, because we benefit from breathing air. But air is free. If air has value to us, why is it free? We certainly would be willing to pay for air rather than do without it. But air is available in such abundance that we treat it as a free good. We also get satisfaction from using petrol. Petrol has value in use. But unlike air, we must pay for the petrol we use. That is, petrol has value in exchange as well as value in use. We are willing to exchange something-usually money-for the use of some petrol.

Why is air free, but petrol is costly? One important reason is that petrol is scarce, whereas air is abundant. This should start making you think about the role that scarcity plays in the economy. But be careful as you do so. Just because something is scarce does not necessarily mean it will have value in exchange. Another reason that something may not have value in exchange is because it has no value in use. That is, people just do not get any satisfaction from possessing or using it.

We all have a limited amount of money that we can exchange for goods and services. The limit varies from individual to individual. For example, a school teacher typically has far less money to spend than a successful investment banker. An unskilled labourer has less money to exchange for goods and services than a skilled labourer. However, we all (even the richest among us) have a limited amount of money for buying things that can bring us satisfaction. As a result, we all make decisions about how we will spend, save, and/or borrow money. This implies that how we choose to allocate our money is an important factor in determining the demand for various goods and services in the economy.

4.2 THE DEMAND FUNCTION

The demand function sets out the variables, which are believed to have an influence on the demand for a particular product. The demand for different products may be determined by a range of factors, which are not always the same for each of them. The presentation in this section is of a generic demand function which includes some of the most common variables that affect demand. For any individual product, however, some of these may not apply. Thus, any attempt by the firm to predict demand for a product on the basis of the demand function will require some initial knowledge, or at least informed guesswork, about the likely influences on it.

The demand function can be written as:

$$Q_d = f(P_o, P_c, P_s, Y_d, T, A, CR, R, E, N, 0)$$

The first three variables in the function relate to price. They are the own price of the product (P_o), the price of complements (P_c) and the price of substitutes (P_s) respectively. In the case of the own price of a good, the expected relationship

would be, *the higher the price the lower the demand*, and *the lower the price the higher the demand*. This is the law of demand which is explained in greater detail in the next section. In the case of complements, if the *price of complementary goods* increases, we would expect demand to fall both for it and for the good that it is complementary to. This is the case as fewer people would now wish to buy either good given that the complementary good is now more expensive and this has the effect of reducing demand for the other good as well. In contrast, if the price of a substitute good rises, then demand for the good that it is a substitute for would be expected to rise as people switched to buying the latter rather than its more expensive substitute. Complements and substitutes are also explained in detail later on.

The fourth variable in the demand function, Y_d stands for disposable income, that is, the amount of money available to people to spend. The greater the level of disposable income, the more people can afford to buy and hence the higher the level of demand for most products will be. This assumes of course that they are 'normal' goods, purchases of which increase with rising levels of income, as opposed to 'inferior' goods that are purchased less frequently as income rises. The use of disposable income rather than just income is justified on the grounds that people do not have total control over their gross incomes. There will, for example, be deductions to be made in the form of taxes. Thus the level of disposable income can change over time, for example changes in tax rates.

The effect of changes in disposable income on the demand for individual products will of course be determined by the ways in which it is spent. This is where the fifth variable, tastes (T), needs to be taken into account. Over a period of time, tastes may change significantly, but this may incorporate a wide range of factors. For example, in case of food, greater availability of alternatives may have a significant effect in changing the national diet. Thus, in India for instance, the demand for bajra has fallen over the past 10 years as people have switched to eating rice and wheat instead. Social pressures may also act to alter tastes and hence demand. For example, tobacco companies have been forced to seek new markets as smoking has become less socially acceptable in the USA and Western Europe, thus reducing demand in these areas. Changes in technology may also have an impact. For example, as the demand for colour televisions increased, the demand for black and white televisions fell as tastes changed and the latter were deemed to be inferior goods. Thus there are a number of ways in which tastes may change over time.

The next set of variables, the A variable, relates to levels of advertising, representing the level of own product advertising, the advertising of substitutes and the advertising of complements respectively. The relationships here are as follows. In general, the higher the level of own advertising for a good, the higher demand for that good would be expected, other things being constant. Likewise, the higher the level of advertising of a complementary good, the higher the demand for it and the good(s) which it is complementary to will be, given their symbiotic relationship. Conversely, however, the higher the level of advertising of a substitute good, the lower the demand for the good for which it is an alternative and people buy more heavily promoted good. The overall effect of advertising will depend on the extent to which each of these forms of advertising is used at any given point of time as they may, at least in part, cancel each other out. This is something the firm will also need to know in order to determine its optimal advertising strategy. The variables CR and R are also related. The former represents the availability of credit while the latter represents the rate of interest, that is the price of credit. These variables will be most important for purchases of consumer durable goods, for example cars. Someone's ability to buy a car will depend on his or her ability to raise money to pay for it. This means that the easier credit is to obtain, the more likely they are to be able to make the purchase. At the same time credit must be affordable, that is the rate of interest must be such that they have the money to pay. These two

variables have traditionally been regarded as exogenous to the firm that is, they cannot be 'controlled' by it. In recent years, however, major car manufacturers have increasingly sought to bring them under their control through the provision of finance packages.

The letter E in the demand function stands for expectations. This may include expectations about price and income changes. For example, if consumers expect the price of a good to rise in future then they may well bring forward their purchases of it in order to avoid paying the higher price. This creates an increase in demand in the short term, but over the medium term, demand may fall in response to the higher price charged. The firm will need to adjust its production accordingly. An example of this might be when increased taxes are expected to be levied on particular goods, for example an increase in excise duties on alcohol or cigarettes, as is usually the case after the Central Budget. Consumers of these products may buy more of them prior to the implementation of the duty increases in order to avoid paying the higher prices arising from the higher level of duties. Alternatively, expectations about incomes may be important. For example, people who expect their incomes to rise may buy more goods, whereas those who expect their incomes to fall will buy less. At the level of the individual consumer this may not be significant but when aggregated across a country's population it can be. Thus during a boom in the economy the additional expected purchasing power of consumers will lead to increases in demand for a significant number of products. Conversely, the expectation that incomes will fall, perhaps as a result of redundancy during a recession, will reduce demand as consumers become more cautious.

The variable N stands for the number of potential customers. Each product is likely to have a target market, the size of which will vary. The number of potential customers may be a function of age or location. For example, the number and type of toys sold in a particular country will be related to its demographic spread, in this case the number of children within it and their ages.

Finally, we come to O which represents any other miscellaneous factors which may influence the demand for a particular product. For example, it could be used to represent seasonal changes in demand for a particular product if demand is subject to such fluctuations rather than spread evenly throughout the year. Examples of such products might include things such as umbrellas, ice creams and holidays. In sum, this is a 'catch all' variable which can be used to represent anything else which the decision maker believes to have an effect on the demand for a particular product.

Thus each product will have its own particular demand function depending on which of the above variables influence the demand for it. The ways in which the level of demand can be estimated on the basis of this demand function will be discussed later in unit 6 of this Block.

Activity 1

Name any five variables which may be included in the demand function and explain its impact on demand.

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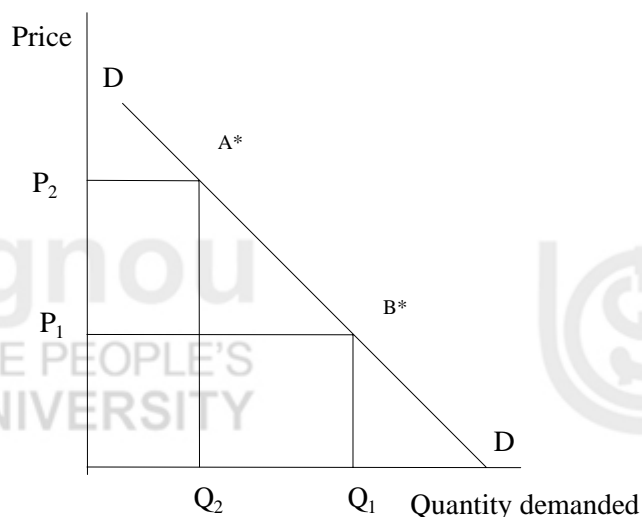
4.3 THE LAW OF DEMAND

For most goods, consumers are willing to purchase more units at a lower price than at a higher price. The inverse relationship between price and the quantity consumers will buy is so widely observed that it is called the *law of demand*. The law of demand is the rule that people will buy more at lower prices than at higher prices if all other factors are constant. This idea of the law of demand seems to be a pretty logical and accurate description of the behaviour we would all expect to observe and for now, this will suffice.

The law of demand states that consumers are willing and able to purchase more units of a good or service at lower prices than at higher prices, other things being equal. Have you ever thought about why the law of demand is true for nearly all goods and services? Two influences, known as the income effect and the substitution effect, are particularly important in explaining the negative slope of demand functions. The income effect is the influence of a change in a product's price on real income, or purchasing power. If the price of something that we buy goes down, our income will go farther and we can purchase more goods and services (including the goods for which price has fallen) with a given level of money income. The *substitution effect* is the influence of a reduction in a product's price on quantity demanded such that consumers are likely to substitute that good for others that have thus become relatively more expensive.

The concept of demand is often depicted in a graphic model as a demand curve. A demand curve is a graphic illustration of the relationship between price and the quantity purchased at each price. When plotting a graph for demand, the price is measured along the vertical axis and the quantities that would be purchased at various prices are measured along the horizontal axis. The demand curve shows the relationship between the own price of a good and the quantity demanded of it. Any change in own price causes a movement along the curve as shown in Figure 4.1. In this case, a rise in price from P_1 to P_2 results in a fall in quantity demanded from Q_1 to Q_2 i.e. a move from B^* to A^* in the figure.

Figure 4.1: The demand curve



The same information can also be given in a table or demand schedule, such as Table 4.1, or by an equation for the demand function such as the following:

$$P = 100 - 0.25Q$$

where P is price and Q is quantity. The advantage of the equation is that it is

compact to work with, and modern managers in both the private and public sector rely on such functions (which are estimated by using regression analysis, explained in unit 6) with increasing frequency.

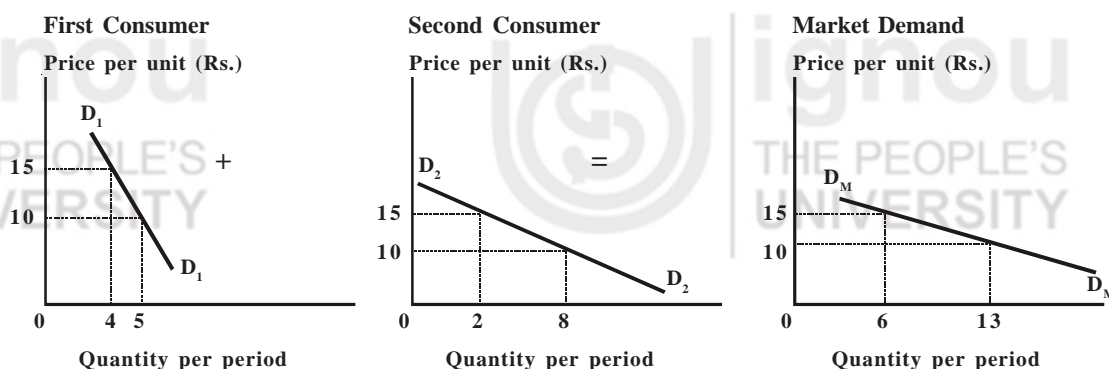
Table 4.1: Demand Schedule

Price (Rs)	Quantity (units)
90	40
70	120
50	200
30	280
10	360

4.4 THE MARKET DEMAND CURVE

The market demand curve is the total of the quantities demanded by all individual consumers in an economy (or market area) at each price. Economic theory supports the proposition that individual consumers will purchase more of a good at lower prices than at higher prices. If this is true of individual consumers, then it is also true of all consumers combined. This relationship is demonstrated by the example in Figure 4.2, which shows two individual demand curves and the market demand that is estimated by adding the two curves together.

Figure 4.2 The Market Demand Curve



A market demand curve is the sum of the quantities that all consumers in a particular market would be willing and able to purchase at various prices. If we plotted the quantity that all consumers in this market would buy at each price, we might have a market demand curve such as the one shown in Figure 4.2. The market demand curve in Figure 4.2 shows that at a price of Rs. 15, the market demand would be 4 for the first consumer and 2 for the second consumer, giving a total of 6 units as market demand. Analogously, at Rs. 10.00 the total market demand is 13 units.

Another way of showing the derivation of the market demand curve is through equations representing individual consumer demand functions. Consider the following three equations representing three consumers' demand functions:

Consumer 1: $P = 12 - Q_1$
 Consumer 2: $P = 10 - 2Q_2$
 Consumer 3: $P = 10 - Q_3$

You should substitute some value of Q (such as $Q = 4$) in each of these equations to verify that they are consistent with the data in Table 4.2. Now, add these three

demand functions together to get an equation for the market demand curve. Be careful while doing this. There is sometimes a temptation to just add equations without thinking about what is to be aggregated. In Table 4.2, it is easy to see that the quantities sold to each consumer at each price have been added. For example, at a price of Rs. 6, consumer number 1 would buy six units ($Q_1 = 6$), consumer number 2 would buy two units ($Q_2 = 2$), and consumer number 3 would buy four units ($Q_3 = 4$). Thus, the total market demand at a price of Rs. 6 is 12 units ($6 + 2 + 4 = 12$). The important point to remember is that the quantities are to be added; *not* the prices. To add the three given demand equations, we must first solve each for Q because we want to add the quantities (that is, we want to add the functions horizontally, so we must solve them for the variable represented on the horizontal axis). Solving the individual demand functions for Q as a function of P (for consumers 1, 2 and 3), we have—

$$Q_1 = 12 - P$$

$$Q_2 = 5 - 0.5P$$

$$Q_3 = 10 - P$$

Adding these equations results in the following:

$$Q_1 + Q_2 + Q_3 = 27 - 2.5P$$

And letting $Q_M = Q_1 + Q_2 + Q_3$ where Q_M is market demand.

$$Q_M = 27 - 2.5P$$

Q_M is the total quantity demanded.

This is the algebraic expression for the market demand curve. We could solve this expression for P to get the inverse demand function:

$$P = 10.8 - 0.4Q_M$$

Now, check to see that this form of expressing the market demand is consistent with the data shown in Table 4.2.

Table 4.2: Derivation of a Market Demand Schedule

Price	Q_1	Q_2	Q_3	Q_M
10	2	0	0	2
8	4	1	2	7
6	6	2	4	12
4	8	3	6	17
2	10	4	8	22

The market demand curve shows that the quantity purchased goes up from 12 to 22 as the price falls from Rs. 6.00 to Rs. 2.00. This is called a *change in quantity demanded*. As the price falls, a greater quantity is demanded. As the price goes up, a smaller quantity is demanded. A *change in quantity demanded* is caused by a change in the price of the product for any given demand curve. This is true of individual consumers' demand as well as for the market demand. But what determines how much will be bought at each price? Why are more televisions bought now than ten years ago, despite higher prices? Why are more paperback books bought today than in previous years, even though the price has gone up? Questions such as these are answered by looking at the determinants of demand.

Activity 2

1. Given that an individual consumer's demand curve is $P = 200 - 4Q$.
 - a) Find the quantity this consumer would purchase at a price of Rs. 20.
 - b) Suppose that the price increases to Rs. 60. How much would the consumer now purchase?
 - c) Would this represent a change in demand or a change in quantity demanded? Why?

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2. Suppose demand for a product in each of three regions is shown below:

Region 1 Demand: $Q = 307 - 5P$

Region 2 Demand: $Q = 204 - 3P$

Region 3 Demand: $Q = 500 - 9P$

Find the total demand for the three regions.

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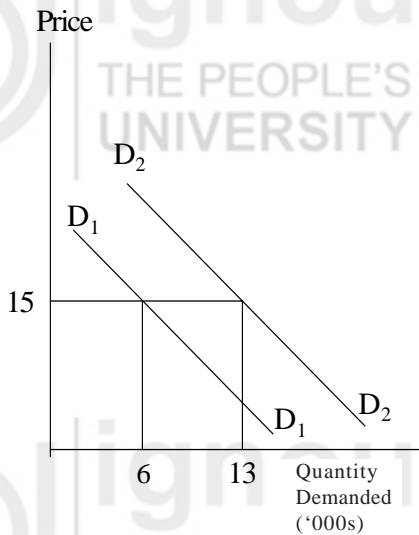
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4.5 THE DETERMINANTS OF DEMAND

Many forces influence our decisions regarding the bundle of goods and services we choose to purchase. It is important for managers to understand these forces as fully as possible in order to make and implement decisions that enhance their firms' long-term health. It is probably impossible to know about all such forces, let alone be able to identify and measure them sufficiently to incorporate them into a manager's decision framework. However, a small subset of these forces is particularly important and nearly universally applicable. As stated above, the overall level of demand is determined by consumers' incomes, their attitudes or feelings about products, the prices of related goods, their expectations, and by the number of consumers in the market. These are often referred to as the determinants of demand. **Determinants of demand** are the factors that determine how much will be purchased at each price. As these determinants change over time, the overall level of demand may change. More or less of a product may be purchased at any price because of changes in these factors.

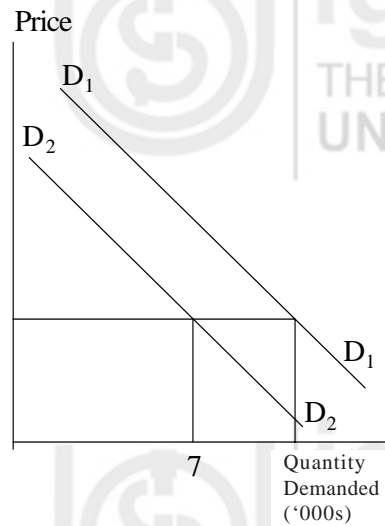
Such changes are shown by a shift of the entire demand curve. If the demand curve shifts to the right, we say that there has been an *increase in demand*. This is shown as a move from the original demand D_1D_1 to the higher demand D_2D_2 in Figure 4.3a. The original demand curve can be thought of as being the market demand curve for soft drinks. At a price of Rs. 15.00, given the initial level of demand, consumers would purchase 6,000 soft drinks. If demand increases to the

Figure 4.3a: Increased demand



higher demand, consumers would purchase 13,000 soft drinks rather than the 6,000 along the original demand curve.

Figure 4.3b: Decreased demand



A decrease in demand can be illustrated by a shift of the whole demand curve to the left. In Figure 2-3, this is represented by a move from the original demand D_1 to the lower demand D_2 . At the price of Rs. 13 initially 8,000 soft drinks are purchased, while following the decrease in demand only 7,000 soft drinks are bought.

It is important to see that these changes in demand are different from the changes in quantity demanded. We discussed how changes in price cause a change in quantity demanded. As price changes, people buy more or less along a given demand curve. Movement from A^* to B^* in Figure 4.1 shows the change in quantity demanded as price changes. It is not a shift in the whole demand curve, such as that shown in Figure 4.3a and 4.3b. When the whole demand curve changes, there is a *change in demand*. Some of the variables that cause a change in demand are *changing incomes, changing tastes of consumers, changes in other prices, changes in consumer expectations, and changes in the number of consumers in the market* etc. These variables that cause a change in demand are also known as *shifter variables*.

Activity 3

Suppose you read in today’s newspaper that carrot prices have soared because more carrots are being demanded. Then tomorrow you read that the rising price of carrots has greatly reduced the typical consumers demand for carrots as consumers have switched to potatoes and peas. The two statements appear to contradict each other. The first associates a rising price with rising demand; while the second associates a rising price with a declining demand. Comment.

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4.6 THE PRODUCT'S PRICE AS A DETERMINANT OF DEMAND

It has already been noted that consumers are expected to be willing and able to purchase more of a product at lower prices than at higher prices. In evaluating a demand or sales function for a firm or an entire industry, one of the first things a thoughtful analyst or manager will consider is the price of a product. If inventories have built up, a firm may consider lowering the price to stimulate quantity demanded. Rebates have become a popular way of doing this. Rebate programmes of one type or another have appeared for cars, home appliances, toys and even food products. Such rebates constitute a way of lowering the effective purchase price and thereby increasing the quantity that consumers demand without the negative repercussions of raising the price once the excess inventory is eliminated. Instead of raising the price back to its normal level, the firm simply allows the rebate programme to quietly come to an end. As has been stated above, this is called a *change in quantity demanded*. As the effective price falls, a greater quantity is demanded.

4.7 INCOME AS A DETERMINANT OF DEMAND

On the other hand, shifter variables, as the name implies cause the demand curve to shift i.e. there is a change in demand. Nearly all goods and services are what economists refer to as *normal goods*. These are goods for which consumption goes up as the incomes of consumers rise, and the converse is also true. In fact, it is rare to find a demand function that does not include some measure of income as an important independent variable. Goods for which consumption increases as the incomes of consumers rise are called normal goods. Goods for which consumption decreases as the incomes of consumers rise are called *inferior goods*.

This relationship between product demand and income is one of the reasons that so much national attention is given to the level of Gross Domestic Product (GDP) and changes in the rate of growth of GDP. The GDP is the broadest measure of income generated in the economy. In demand analysis, other more narrowly defined measures, such as personal income or disposable personal income, are often used; but these measures are highly correlated with GDP. Thus, looking at the changing trends in GDP is helpful for understanding what may happen to the demand for a product.

4.8 TASTES AND PREFERENCES AS DETERMINANTS OF DEMAND

We all like certain things and dislike others. A pair of identical twins brought up in the same environment may have different preferences in what they buy. Exactly how these preferences are formed and what influences them is not easy to know. Psychologists, sociologists, and social psychologists have a lot to offer in helping economists and other business analysts understand how preferences are formed and altered.

Even if we do not have a thorough understanding of preference structures, one thing is clear. Preferences and changes in preferences affect demand for goods and services. All have observed how such changes in tastes and preferences have influenced various markets. For example, consider the automobile market. In the United States, people appeared to have a preference for big, powerful cars throughout the 1950s and 1960s. During the 1970s, the preference structure started

to change in favour of smaller, less-powerful, but more fuel-efficient cars. In part, the change in preference structure for cars may also have been related to lifestyle factors, such as being sportier and more concerned with resource conservation. Convenience factors, such as ease of driving and parking, may also have been important. Demographic changes, especially a trend toward smaller families, may have had some effect as well. In terms of the theory, the change in preference toward fuel-efficient cars will shift the demand curve for smaller cars to the right (see Figure 4.3a). On the other hand, social attitudes towards smoking has changed and thus one would expect that the demand curve for cigarettes has shifted to the left (see Figure 4.3b). Likewise, the growing awareness in respect of noise and environmental pollution has resulted in a decline in the demand for crackers during Diwali celebrations.

As much as we may like to think that we know our own minds and make our own purchase decisions without the influence of others, we are very likely influenced quite strongly by various peer groups, including the people with whom we work, classmates, roommates, the people with whom we socialize, neighbours, and so on. Our decisions about clothes, entertainment, college courses, food, and many other things are influenced by these peer groups.

From the business perspective, advertising is a key factor in the formation and alteration of consumers' tastes and preferences. We can think of advertising as being either primarily informational or primarily transformational. Informational advertisements are designed to increase demand for a particular product by providing information about a product: how it is used, how much it costs, where you can buy it, what attributes it has (size, weight, etc.). Newspaper advertisements often have the strongest informational component. They are designed to elicit direct purchase action on the part of consumers.

Transformational advertisements are designed to influence the image of a product or service. They attempt to enhance the satisfaction we get from a product by evoking positive images of how we will feel if we buy it. Think about television commercials for soft drink. How much usable information do they give you? Usually not much. They tell you the name of the product; associate its consumption with some reference group of happy, healthy-looking people (often famous people as well); and generally try to create a positive image in an attempt to alter your preference structure in favour of that soft drink. A single exposure to such an advertisement is not usually very effective, but repeated exposure to that advertisement and similar ones has been shown to influence consumer preferences.

In terms of measurement, this determinant of demand-tastes and preferences is the most difficult for an analyst to handle. It is hard to identify all the things that influence tastes and preferences, and often just as hard to measure those that are identified. Measures of advertising effort are sometimes used to help account for this determinant of demand.

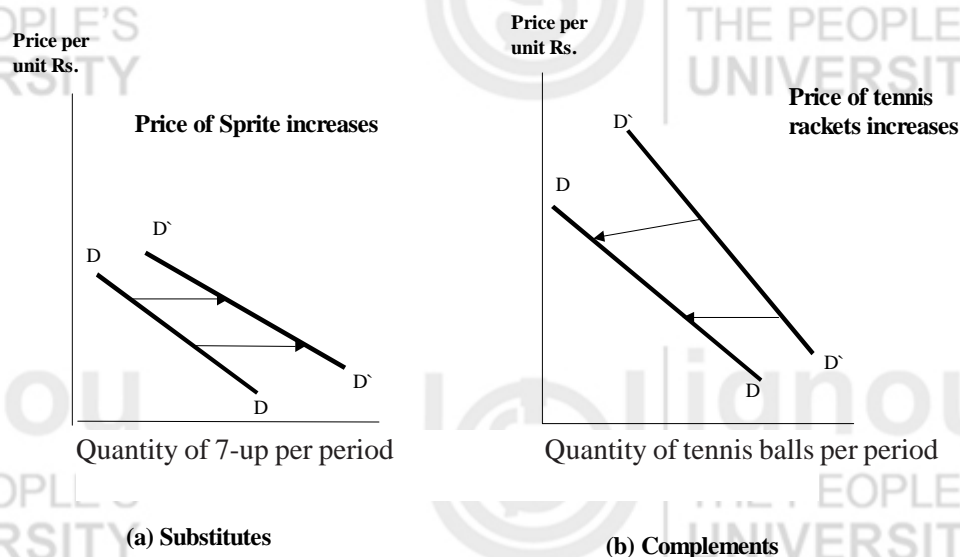
4.9 OTHER PRICES AS DETERMINANTS OF DEMAND

How much consumers buy of a product may be affected by the prices charged for other goods or services as well. Figures 4.4a and 4.4b show the effect on the demand curve following a change in the price of a related good or service. Both graphs are self-explanatory. Earlier, it was noted that the rise in the price of gasoline during the 1970s had some effect on the demand for large versus small cars in the United States. Gasoline and cars are complementary goods; they are used together and complement one another. When the price of gasoline rose, there were at least two effects on the automobile market. First, the higher price of gas

increased the cost of driving, and thus reduced the total number of miles individuals tended to drive. Second, smaller, more fuel-efficient cars became more attractive relative to big cars.

This relationship can be stated in more general terms. Suppose that we observe two goods, A and B, and B is complementary to A. If the price of B goes up, we can expect the quantity demanded for A to be reduced. Why? Because as the price of goods B increases, its quantity demanded decreases according to the law of demand. But now, some individuals who would have purchased B at the lower price are no longer making those purchases. These same individuals now no longer have any use for A, because A was a good useful only in conjunction with B. Thus, the quantity demanded of A goes down as well. The reverse is also true: if the price of B falls, the demand for A will rise. It should be clear why business analysts are concerned not only about the effect that their product's price has on sales but also with the effect of the prices of complementary products.

Figure 4.4: Demand Curves for Substitutes and Complements



What effect would you expect of an increase in the price of movie tickets to have on the demand for home VCDs and tapes? These are substitute goods. That is, we assume that people view movie tickets and rented tapes in much the same manner; some people would be willing to be entertained with either medium depending upon the price of the two mediums, the convenience of obtaining each, and so on. If the price of movie tickets goes up, we would expect the demand for videodisks and tapes to rise as well. Why? If the price of movie tickets rises, fewer people attend theatre movies (according to the law of demand). But these same individuals still have a desire for entertainment and they view rented tapes in much the same way as theatre movies. Some of them will now substitute rented tapes for the movies they would have attended in theatres, and this is seen as an increase in the quantity demanded of rented tapes. In general, if we have two products, C and D, which are substitutes, we can expect that a rise in the price of C (or D) will cause the demand for D (or C) to go up.

Economists and other business analysts are, therefore, concerned with all other prices that may affect the products they are analyzing. The prices of both complementary and substitute products can be expected to influence demand. Later in this block, we will see how a measure called the cross-price elasticity of demand can be helpful in determining whether two goods are complements, substitutes or neither.

4.10 OTHER DETERMINANTS OF DEMAND

It would be a monumental task to identify everything that might have some influence on the demand for any product. So far, the four most important influences have been identified: a product's price, income, tastes and preferences, and the price of complementary or substitute products. A number of others were identified in section 4.2, which also affect demand. By now you will be able to establish the direction of the effect i.e. whether it will increase or decrease demand. For example, population growth obviously causes the potential demand for nearly all products to rise. In many cases, economists involved in analyzing the demand for particular products look at individual components of the population as determinants of demand. The changing age distribution, for example, may have differential effects on different markets. The growing proportion of people over 65 in the population has important ramifications for demand for such things such as health-care products. Changes in other demographic characteristics and in the geographical distribution of the population may also be important. You may think of a variety of other effects on consumer demand as well.

4.11 SUMMARY

Demand analysis is a necessary informational input into the business decision process since, in a sense, demand fundamentally determines what is to be produced and at what price. Accordingly, business economists use demand analysis to discover the various factors determining the demand for a given product or service.

The law of demand states that consumers are willing and able to purchase more units of a good or service at lower prices than at higher prices, other things being constant.

The law of demand arises from two effects occurring when the price of a given good is changed: income and substitution. The *income effect* states that, given a fixed budget, increase in a product's price leaves less income for other goods. The *substitution effect* says that consumers tend to substitute cheaper goods for more expensive goods.

The market demand curve is the horizontal summation of all consumers demand in the market. The market demand curve relates the total quantity demanded of a product to its own price on the assumption that all other prices, total income of the individuals buying in that market, and its distribution, tastes and all other influencing variables are held constant.

The total quantity demanded in any market depends upon the price of the product being sold, on the prices of all other products, on the income of the individuals buying in that market, on the distribution of income among the individuals, tastes and a number of other influencing variables.

4.12 KEY WORDS

Law of demand states that the demand for a good varies inversely with its own price.

Market demand is the total of the quantities demanded by all individual consumers in an economy.

Substitutes are goods which can be used in place of the other goods.

Complements are goods used in conjunction with each other.

4.13 SELF-ASSESSMENT QUESTIONS

1. Give three reasons as to why the firm might need accurate demand information.
2. What causes a movement along the demand curve and what causes shifts in the demand curve? Explain.
3. Punita spends all her money on food and clothing. When the price of clothing decreases she buys more clothing.
 - a. Does the substitution effect cause her to buy more clothing? Explain.
 - b. Does the income effect cause her to buy more clothing? Explain.
4. In a world of just two goods where all income is spent on the two goods, both goods cannot be inferior. True or False? Explain.

4.14 FURTHER READINGS

Mansfield, Edwin, 2003 “*Managerial Economics: Theory, Applications and Cases*”, Fifth edition WW. Norton.

Petersen, H. Craig and W. Cris Lewis, 2001 “*Managerial Economics*”, Fourth Edition, Pearson Education Asia.