

Chapter 2

Demand Analysis

Abstract

For the entire business activities, demand analysis is very important. That is why, before commencing any business demand analysis plays a vital role for rational entrepreneur, because the main concern is to maximize the profit with fixed resources. It also helps the entrepreneur in decision making regarding his distribution of resources. Here, in this chapter meticulous analysis of demand is given. Determinants of demand of the goods are briefly explained. Law of demand and its importance in economics, and demand curve are also described. Types of demand i.e., income, price and cross are briefly annotated.

Keywords: Demand, resources, goods, price, profit

2.1. Determinants of Demand

The word “demand” replace the meaning ‘to the want’, supported by the essential ability to pay. The quantity of any good bought per unit of time at the given price is the demand of that good at given price level. Three aspects of demand are as follows,

Quantity demanded at a certain price level, quantity demanded at a price during a given time and quantity desired per unit of time

There are multiple factors for determination of scope and quantity of demand. Function is basically used to describe such "determined" and "determinant" association (Petersen et al. 2006). To illustrate, we say, quantity demanded of a product is a function of its price,

$$Q = f(P)$$

Here, Q denotes amount demanded, f shows function and P denotes the price of good. Various significant factors of demand are as,

2.1.1. Price of the Goods

The basic and leading determining factor of demand for a commodity is price. Typically, price and quantity demanded shows inverse relationship with each other. As price goes up, quantity demanded for good will decreases and vice versa.

2.1.2. Income of the Buyer

Quantity demanded will also be influenced with buyer's income level. Mostly, it is true that when income rises quantity demanded will also goes up.

2.1.3. Prices of Related Goods

Demand for a product is also effected due to products. Often, demand for item rises when the price of related good increases. We call these inter-related goods as," substitutes", e.g. T.V. and LCD. But on the other hand, demand for commodity will decreases as the price of associated product rises. These products which are unified called complements, e.g. car and petrol, pen and ink, cart and horse, etc.

2.1.4. Tastes of the Buyer

Buyer's taste has significant influence in case of demand. Consumer can't purchase commodity until, it is low priced and valuable, if it is not according to his taste. Contrarily, a consumer may buy a commodity, if it is preferred by him, even though it is expensive.

2.1.5. Seasons Prevailing at the Time of Purchase

Season plays a vital on demand for a product. Like, demand for woolen clothes rises in winter season and demand for cold drinks rises in summer season.

2.1.6. Advertisement and Sales promotion

Advertisement at Facebook and on other online sources has a substantial effect on the demand for the good and thereby improves sales. The requisite to have precision in demand analysis makes us adopt a 'ceteris paribus' assumption, i.e. all factors other than one remains unchanged. This facilitates us to deliberate the relation between demand and each of the variable factors considered in isolation.

2.2. Law of Demand

As different factors that affect the demand and price is the most important one. This law is the association among price and quantity and it is stated as, the greater the amount to be sold, the smaller must be the price at which it is offered in order that it may be.

The quantity demanded will rise with the fall of prices and will decrease with the rise in prices (Marshall 2009). Other things remain same, at lower price quantity demanded will be higher than at a higher price level. Here, other things include taste, fashion, hobbies etc., and these do not change in a particular time. Law of demand depicts the opposite relation among price and quantity demand of a good. However, this law is only an indicative and not a quantitative statement (Nicholson and Snyder 1972). Assuming, the consumer is rational in purchasing behavior, according to the above-mentioned schedule. When price is Rs. 50 per kg apple consumer

demand will be 1 kg; at price Rs. 40 per unit, consumer requires 2 kg of apples, and so on. The Table 2.1 indicates an inverse relationship between price and demand.

Table 2.1 Demand of a Consumer for apples

Price of Apple in Rs. / Unit	Quantity Demanded in kgs
50	1
40	2
30	3
20	4

2.2.1. Importance of the Law of Demand

Law of demand is important for the sake of decision making and sound planning of business. Production planning in any organization depends on the precise demand analysis. It also has theoretical and practical benefits. (Gupta et al. 2004).

2.2.1.1. Price Determination

Monopolist fixes the price of the product through law of demand. He also decides about the most beneficial quantity of output.

2.2.1.2. Useful to Government

This law also helps to make judgment about tax reforms and policies for the concerned departments like, finance.

2.2.1.3. Useful to Farmers

Through this law, farmer judge how good or bad crops will affect his economic conditions. If the demand can't go up of the season with a good crop at the end of the season, price will go down. Then the other members of the society get benefits.

2.2.1.4. In the Field of Planning

The demand schedule plays a significant role for planning of individual items and industries. In these cases, the main thing is to judge either variation in price of a product has a significant effect on product's demand inside or outside the nation.

2.3. Demand Curve

Demand curve can be plotted by using the data of Table 2.1. For this, we take quantity demanded on horizontal or x-axis and hypothetical price on vertical or Y-axis. By joining all the points according to the given schedule, we get a smooth demand curve.

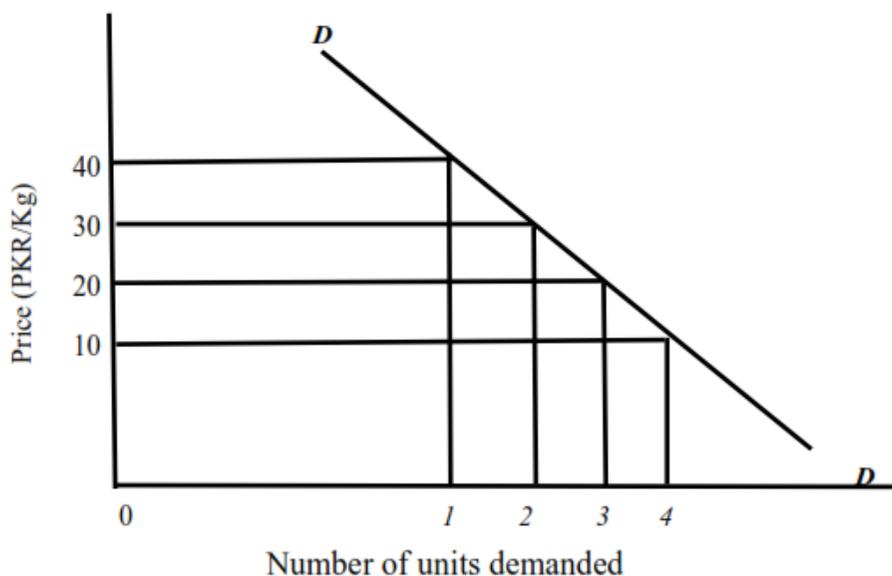


Fig. 2.1 The demand curve

Demand curve is slopping downward which indicates opposite relationship among price and quantity demanded for commodity (Figure 2.1).

2.4. Market Demand

Market demand shows the overall quantity bought by all individuals at altered hypothetical prices. It is an aggregate of individual's demand. It is obtained by summing up the quantities demanded by everyone in the market at particular price. The schedule present the chain of quantity demanded by all individuals of a commodity in a market at various prices is called Market Demand (Varian 1992). Curve is obtained by presenting data on a two-dimensional graph. From seller's point of view market demand curve shows different quantities that he can sell at various price levels. Individual's demand curve is slopping downward and by adding up individual's demand curve we get market demand curve that is also downward slopping.

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2.5. Shifts in Demand Curve

The association of price and demand for a commodity is very significant but manager of any organization must know about the change of demand function (or curve). For many products, there is a little effect in the quantity demanded due to change in the price level. Demand is also affected by other factors like income, taste, and fashion and business activity. Thus, shift in demand have a greater importance to the decision maker of a firm rather than movement along the demand curve. As we clearly know, about the difference between the shift and movement of demand curve along the same curve.

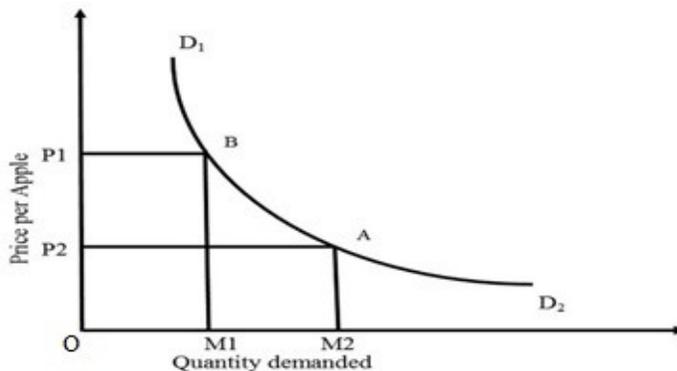


Fig. 2.2(a) Movement along the same demand curve

When price of a commodity varies, *ceteris paribus*, the quantity demanded of the commodity varies. When the demand varies with the change in price rather than other factors, it is called extension or contraction of demand. Which is shown in fig 2.2 (a), by movement along the same demand line. Price decreases from OP_1 to OP_2 and demand rises from OM_1 to OM_2 . At this point, demand of a product has extended or expanded. Which is shown by change in demand curve from point A to B. Conversely, if price goes up from OP_2 to OP_1 , demand drops from OM_2 to OM_1 . Here, the quantity demanded for the product is contracted, which is represented in the diagram from point B to A along the curve.

When demand curve shifts due to other determinants, such as changes in income, fashion, tastes, etc. and *ceteris paribus* assumption is relaxed. This is called increase or decrease in demand (rise or fall in demand). This change is shown in diagram 2.2 (b). OM_1 quantity is demanded at a price of OP_1 . If, there is an increase in income more product is demanded, i.e., OM_2 at a price of OP_1 . Note, OM_2 is due to the new demand curve D_2D_2 . But, due to decrease in income level, product's demand will also decrease. Thus, rise or fall in demand along shift in demand curve is different from the extension and contraction of demand.

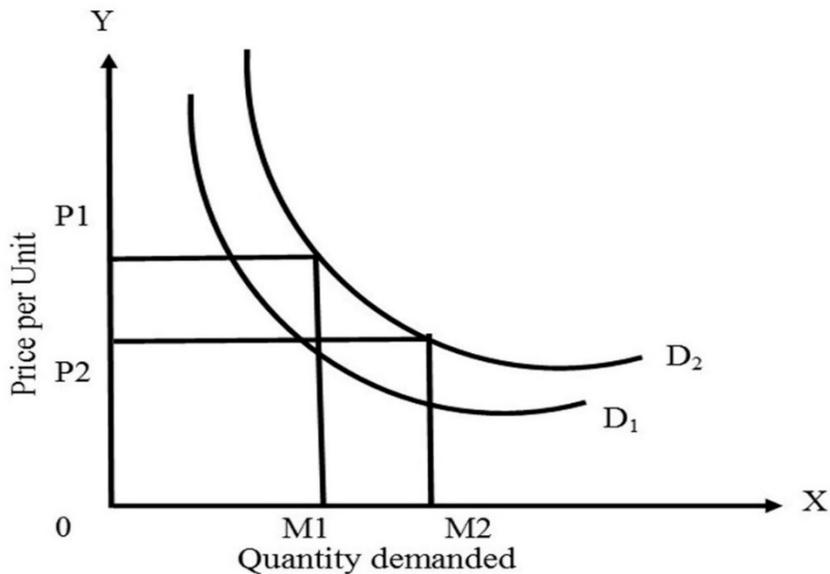


Fig. 2.2b Shifts in demand curve

Reasons of changes (shift) in demand are:

- 1) Income of consumer may change
- 2) Changes in consumer's taste
- 3) Alteration in price of related products (substitutes and complements)
- 4) Variation in exogenous determinants like fashion, social structure, etc

2.6. Why the Demand Curve Slopes Downward or Reasons for the Law of Demand

The demand line is negatively sloped but its slope is steeper in few cases, which depicts that increase in demand due to decrease in price level, and decrease with rise in price level. Various causes of inverse relationship are discussed in the following lines.

2.6.1. Law of Diminishing Marginal Utility

This law states that when consumer consumes increasingly units of the product, utility obtained from every forthcoming unit declines. Which indicates that with the decline in price of commodity, individuals' purchase more commodities until marginal utility obtained from good is equal to the price of product and vice-versa.

2.6.2. Substitution Effect

It is responsible for downward sloping of demand curve. When the price of product declines, buyers purchase more of that product, while the price of substitute does not change. For example, tea and coffee are substituted product. If price of tea falls, consumer may substitute tea with coffee. Consequently, with a reduction in price, the demand will rise due to favorable substitution effect. Alternatively, with the increase in price level, the demand goes down due to unfavorable substitution effect. This is the application of law of demand.

2.6.3. Income Effect

It is another major cause of downward slope of demand curve. With the fall in price of product, real income of buyer rises. Real income is determined in terms of products and services. For example, an individual has Rs. 20, he wishes to purchase oranges whose price is Rs. 20 per dozen. It depicts that consumer may purchase one dozen of oranges within his income. When price of oranges falls to Rs. 15 per dozen, it leads to upsurge his real income by Rs 5. In this way, consumer will buy extra oranges or can purchase any other product.

2.6.4. New Consumers

Usually, when the price of any product falls, the ones who can't consume that commodity before, will buy the product. Due to which, aggregate market demand shifts upward. For example, if price of LCD falls, poor can also buy LCD. Finally, the total demand of LCD's goes up.

2.6.5. Several Uses

Some products can be put for several uses, such commodities are used for important purposes, when their price goes up and that is why, their demand will be limited. Further, when price falls, product's demand will be extended. Coal is the best example for this. When its price goes up, it is used for important purposes and when its price falls, it is used for many other purposes.

2.6.6. Psychological Effects

It is natural and psychological phenomena that when the of product decreases people buy more of that product. Therefore, price and demand working opposite to each other. For instance, with the decrease in price level of silk clothes, its demand increases.

2.7. Exceptions to the Law of Demand

In some cases, law of demand is not applicable. Like, when the price of product falls, people buy less, and when the price goes up people buy more. In this case, shape of

demand curve will be completely different than sloping downward. The exceptions are as follows,

2.7.1. Conspicuous Goods

Sometimes, consumers measure the worth of commodity on the basis of its price, i.e., if the product is costly they think it has high utility. Oftenly, diamond is an example of precious goods. Diamonds have high price and higher is the prestige value attached to them, ultimately these have higher demand.

2.7.2. Giffen Goods

Giffen, was surprised to find out that British workers buy more bread, when price is high. It was totally against the law of demand (Dougan 1982). It can be attributed to price, when price of bread increases, people who consume meat and other expensive items shifts towards it because his purchasing power decreases. Even, the price of bread was high then before people consumes more and not less.

Such goods which show direct relationship between price demands are called Giffen goods. Generally, consumer consider those products as inferior which occupy substantial space in his budget. Examples are Bajra, wheat and low quality rice.

2.7.3. Future Expectations about Prices

Sometimes, consumer buys more quantity of product when the price of product rises because he thinks that its price in future will increase more. For example, when there is scarcity of food, people think that the price of food grains will go up in the future. They require more quantity of food as their price increases. But, it is not the law of demand, which is invalidated but there is an alteration in one of the determinant which was held remains same, while deriving the law of demand, namely change in the price expectations of the people.

2.7.4. Market-Conditions

The law is applicable when we assume that consumer is rational and have complete knowledge about market conditions. However, occasionally buyer is irrational and he does impulsive buying without calculations concerning price and usefulness of the commodities and in such circumstances law of demand fails. Likewise, in practice, an individual demands higher amount of product at a high price level. Because, consumer is unaware about the ruling price of product. In this situation, law will be invalid. If the demand for a product fails due to other factors, law of demand will also fail. The inverse relationship between price and demand will not hold if demand changes due to income, taste, fashion, hobbies, price of related items.

2.8. Types of Demand

There are three types of demand.

2.8.1. Price Demand

With other factors remains constant, consumer buy various quantities of product at a particular price level. As, we are related with price demand only. So, it is discussed earlier in the law of demand.

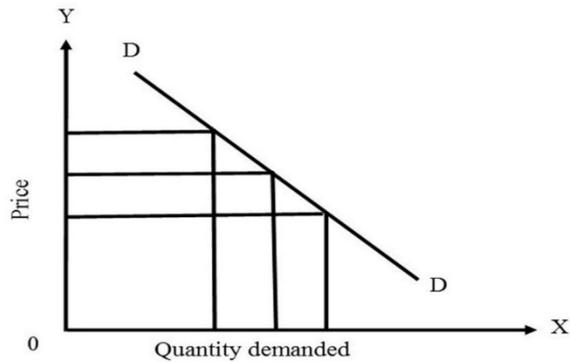


Fig.2.3 Price demand curve

2.8.2. Income Demand

It denotes to the different quantities that a buyer can buy at a given time at different income levels. Generally, there is a direct or positive relationship between income and demand. When income increase demand for product will also increases and vice versa.

2.8.3. Cross Demand

Price of one commodity related to the demand of other commodity is called cross demand. Substitutes are those products which are used in place of each other like tea and coffee. In these cases, relationship between priced and demand is positive. Which shows that when price of one product increase, the demand for the other product will also increase and vice versa. Complementary goods are those that are used jointly to satisfy wants. In simple words, these goods are incomplete without one another. These products are used simultaneously with each other like petrol and car.

Ball and Bat, USB and laptop, etc. In case of these types of products, price and demand is negatively related with each other. Which means when price of one product raises demand for another product will falls.

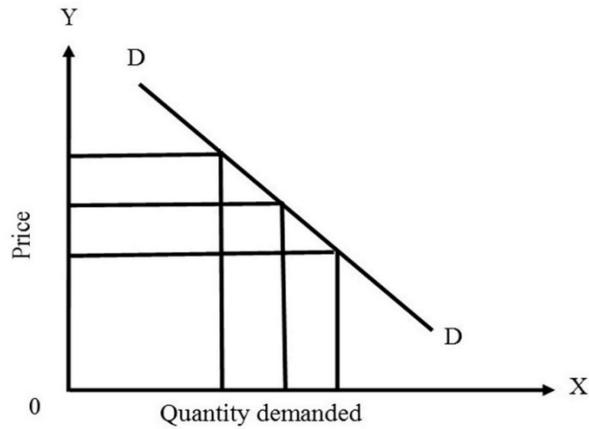


Fig.2.4 Income demand curve

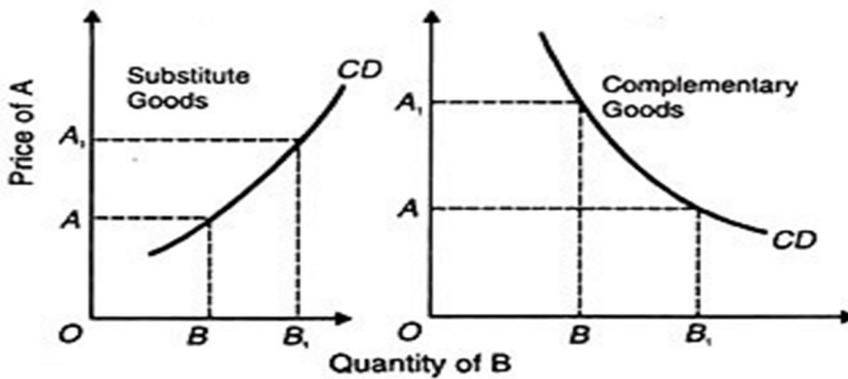


Fig.2.5 Cross Demand Curves

2.8.4. Extension and Contraction of Demand

When quantity demanded of a product changes only due to price (other factors remains unchanged) is known as extension or contraction of demand. When demand increase due to fall in price is called extension of demand and fall in demand because of raise in price is known as contraction of demand. Extension and contraction of demand depicts the change in original demand curve. These are shown in the Figure 2.6

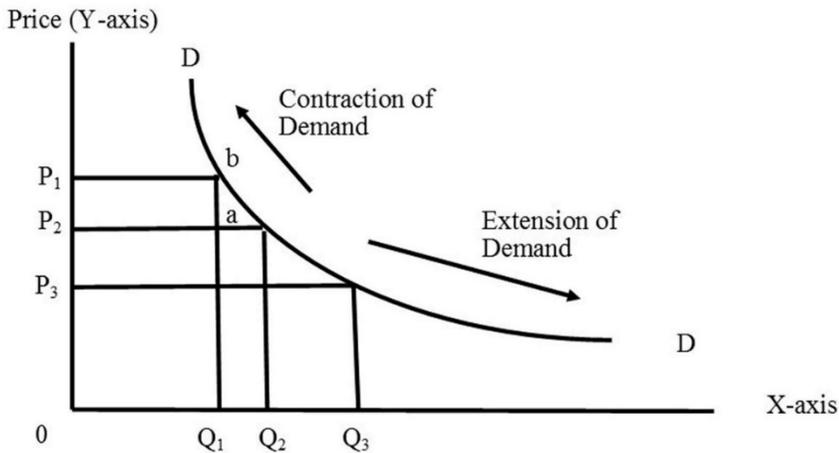


Fig. 2.6 Extension and Contraction of Demand

Downward movement of demand curve of DD from point “a” to point “c” shows the extension of demand with rise of price up to OP_1 , demand will decrease up to OQ_2 . This is upward change along the demand curve from point “a” to “b” is known as contraction of demand. The demand for a commodity may change without change in price but due to change in other factors. It is called rise and fall in demand. There may be change in demand due to change in population, change in taste of people, change in distribution or change in quantity of money.

2.8.5. Other Types of Demand

2.8.5.1. Joint Demand

When various commodities are required for single purpose or for achieving a definite desire, this is a case of joint demand. Milk, sugar and tea are jointly demanded to make tea. Similarly, for writing purpose, we demand paper, pen, and ink. So, demand for these types of commodities together are known as the joint demand. Land, labor, capital and organization is also an example of joint demand.

2.8.5.2. Composite Demand

Demand for single product used in several ways is composite demand. For example; electricity is used for lighting, heating, for running the engine, for the fans etc. Similarly, coal is used in industries, for cooking etc.

2.8.5.3. Direct and Derived Demand

Demand for a product used for direct consumption, i.e., for ultimate project is called direct demand. It is also known as autonomous demand. Here, demand is not concerned to the buying of key product. When a product is wanted due to the demand of other good or service, it is called derived or induced demand. For example,

demand for cement is derived from the demand for building construction; demand for tires is derived from the demand for cars or motorbike, etc.

Box 2.1 Winner-Take-All

"There is a concept by Robert Frank "winner-take-all". This concept explains the concentration of wealth in a few hands. It can be explained considering the superstars of the time. Demand of the talent in film industry is based on the performance of the actor/musician. If a star has excellent performance people will demand their performance. Moreover, industries use their talent for the advertisement of their products because consumer prefers the stars products. Thus, it can be concluded that top talented people in the economy can achieve a greater share in the total revenue in the economy".

Source: Hacker and Pierson (2011)

References

- Dougan, W.R. (1982). Giffen goods and the law of demand. *J. Polit. Econ.* 90:809-815.
- Frank, R. H. and Philip J.C. (1996). *The Winner-Take-All Society: Why the Few at the Top Get SO Much More than the Rest of US*. Penguin Books Australia Limited, Victoria, Australia.
- Gupta, G.S., S. Paul and V.L. Mote. (2004). *Managerial Economics: Concepts and Cases*. McGraw Hill Education, New York, USA.
- Hacker, J.S. and P. Pierson. (2011). *Winner-take-all Politics*. Tantor Media Publishing Company, Connecticut, USA.
- Marshall, A. (2009). *Principles of Economics: Unabridged*. Eighth edition. Cosimo Inc., New York-10011, USA.
- Nicholson, W. and C. Snyder. (1972). *Microeconomic Theory: Basic Principles and Extensions*, 6th edition. South Western Cengage Learning, OH-45040, USA.
- Petersen, C.H., W. C. Lewis and S.K. Jain. (2006). *Managerial Economics*. Pearson India Publisher, Uttar Pradesh, India.
- Varian, H.R. (1992). *Micro Economics Analysis*. W. W. Norton & Company, Inc., New York-10110, USA.