

Unit Two

Demand, Supply and Elasticity

2.1 THEORY OF DEMAND

- The words demand, desire and want are often interchangeably used to express what an individual needs and what he would like to acquire.
- However, in economics it refers to the amount of commodity which an individual buyer is willing and able to buy at a given price and during a given period of time.
- Demand only when it is backed by the following three factors:
 - ability to pay for the good desired,
 - willingness to pay the price of the good desired, and
 - Availability of the good itself.
- Demand for a commodity is the amount of it that a consumer is willing to buy at various given prices and a given moment of time.

Demand Schedule

It is a tabular statement that states the different quantities of a commodity that would be demanded at different prices.

Demand schedules are of two types:

1. **Individual demand schedule** is a tabular statement which shows the quantity of a commodity demanded by an individual household at various alternate prices per time period.

Table 2.1: Individual Demand Schedule

Price (Per kg)	Quantity Demanded
10	4
15	3
22	1

2. **Market demand schedule** is a tabular statement which shows the different quantities of a commodity demanded by different households or consumers in a market at various alternate prices per time period.

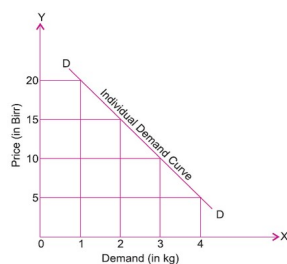
Table 2.2: Market Demand Schedule

Price (Per kg)	X's Demand	Y's Demand	Market Demand (X+Y)
10	4	6	10
15	3	4	7
22	1	2	3

Demand Curve

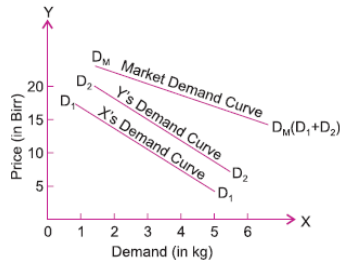
A demand curve conveys the same information as a demand schedule. But it shows the information graphically rather than in a tabular form. Demand curves also are of two types

- I. **Individual demand curve** refers to the curve which expresses graphically the relationship between different quantities of a commodity demanded by an individual at different prices per time period.



- II. **Market demand curve** refers to the curve which express graphically the relationship between different quantities of a commodity demanded by different

households or consumers at different prices per time period. It shows the demand of a whole market for a commodity.



Demand Function

All the above factors influencing the demand for a commodity can be briefly expressed in the following functional relationship:

$$D_x = f(P_x, P_y, P_z, Y, T)$$

Where, D_x stands for the demand for a commodity X,

P_x shows the price of commodity X,

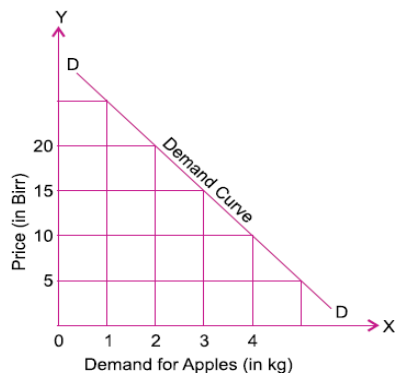
P_y and P_z refer to the prices of other substitutes and complementary goods

Y represents the income level of the consumers

f shows the functional relationship between the demand for x and the other variables

Law of Demand

- Law of demand expresses the functional relationship between the price of a commodity and its quantity demanded.
- Price and demand are observed to be inversely related. For example, if the price of apples rises, people will buy less of them and vice-versa.



Statement of the Law: The law of demand states that, other things being equal, at a higher price consumers will purchase less of a commodity, and at a lower price, consumers will purchase more of it. Or a rise in the price of goods leads to a fall in quantity demanded and vice versa, assuming all other determinants of demand are kept constant.

Assumptions of the Law of Demand

The assumptions of the law of demand as follows:

- There should be no change in prices of related goods,
- Tastes and preferences of the consumer should remain constant,
- There should be no change in the income of the consumers,
- The size of the population should remain constant,
- Distribution of income and wealth should be equal,
- There should be perfect competition in the market.

Exceptions to the Law of Demand

There are some situations when the law of demand does not operate. Main exceptions are as follows:

- **Giffen Goods:** is a good for which an increase in the price raises the quantity demanded. It describes a good that violates the law of demand. (The term is named for economist Robert Giffen). Giffen goods are a special category of inferior goods.
- **Prestige Goods:** Some consumers measure the utility of a commodity entirely by its price.
- **Expectation of People about the Future:** This assumption relates to the changes in the expectations of the people regarding prices of the commodities in the future.
- **Necessities:** There are some commodities which are necessities of life for example, food grains, salt, medicines, etc.

Basis of the Law of Demand or Why Does the Demand Curve Slope Downwards?

- ✓ Slopes downwards to the right.
- ✓ Negative slope of the demand curve,
- ✓ Inverse relationship between the price of the commodity and its demand.

There are several reasons for this inverse relationship as given below:

- ❖ **Law of diminishing marginal utility:** according to this law, if a consumer increases the consumption of a commodity in a given time period, the utility from consumption of each successive unit goes on diminishing.
 - Due to this reason, the consumer will purchase the additional unit of commodity only when he can pay less for it.
- ❖ **Income effect:** When the price of a commodity falls, a consumer can buy more of the commodity with the same amount, indicating an increase in his real income.
 - Similarly, a rise in the price leads to a fall in real income of the consumer, and hence he buys less of a commodity.
- ❖ **Substitution effect:** When the price of a commodity falls, it becomes relatively cheaper than its substitutes.
 - So people who are consuming the other goods would now start consuming the commodity whose price has fallen, and as a result, its demand increases
- ❖ **Change in the number of consumers:** A fall in the price of a commodity increases the number of households who demand it in the market and a rise in the price of commodity reduces this number.
- ❖ **Different uses of a commodity:** At a lower price, a commodity will be in high demand for being put to different uses.
 - Conversely, at a higher price, its use will be limited to a few essential uses only and hence the total demand will go down.

Determinants of Demand

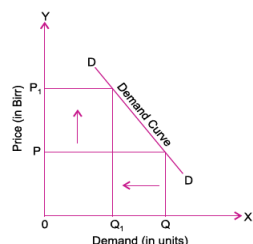
An individual's demand for a commodity is determined by a number of factors.

- **Price of the Commodity**
- **Income of the Consumer**
- **Prices of Related Goods** related with Substitute goods, and Complementary goods.
 - ✓ **Substitute Goods:** Substitute goods are those goods which can be used in place of each other to satisfy a given want. E.g. Coffee and tea, pens and pencils, butter and oil etc. It is also called competitive goods.
 - ✓ **Complementary Goods:** are those goods which are used together to satisfy a given want. For example, cars and petrol.
- **Tastes and Preferences**
- **Future Expectation of Changes in the Price**
- **Climate**
- **Population and Number of Households**
- **Distribution of Income and Wealth**
 - ❖ Demand mainly depends upon three factors, namely
 - ✓ Price of the commodity;
 - ✓ Income of the consumer, and
 - ✓ Price of related goods.

On the basis of the above three factors, demand can be classified into three types:

1. Price Demand:- indicates, other things being equal, the relationship between the price of a commodity and its quantity demanded. $D_x = f(P_x)$

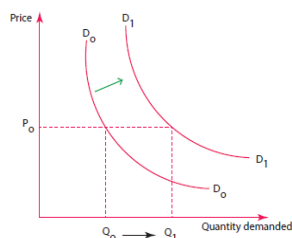
- When price of a commodity falls, its demand rises, and when price of a commodity rises, its demand falls.



2. Income Demand: indicates, other things being equal, the relationship between the income of consumer and demand for a commodity. $D_x = f(Y_d)$

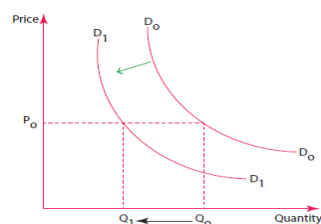
- Generally, the demand for a commodity changes in the same direction as change in income, with a higher level of income leading to a larger demand, and with a smaller income resulting in a fall in demand. However, an increase in income does not always and invariably lead to an increase in the demand for all the commodities.
- On the basis of nature, goods can be classified into two types

A. Normal goods refer to those goods whose income effect is positive - i.e., all other factors remaining the same, as income increases, demand also increases and vice-versa.



B. Inferior goods refer to those goods whose income effect is negative -i.e., all other factors remaining the same, as income increases, demand decreases and vice-versa.

- If the demand for a good rises when income falls, the good is called an inferior good.



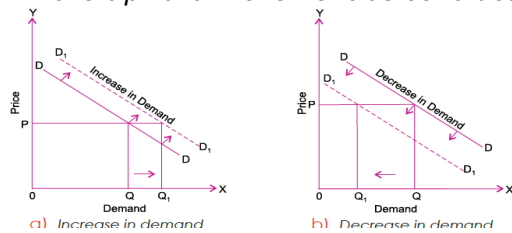
3. Cross Demand: indicates, other things being equal, the relationship between the price of a commodity and demand for related goods (substitute goods/ complementary goods). $D_x = f(P_y)$

Difference between Movement along a Demand Curve (or change in quantity demanded) and Shift in the Demand Curve (or change in demand)

Movement along a demand curve or change in quantity demanded: Other things being equal, if the quantity demanded increases or decreases due to fall or rise in the price of a commodity alone.

- Change in quantity demanded occurs due to change only in the price of the commodity itself.

- Downward movement along the demand curve is called extension of demand, while the upward movement as contraction of demand.



Shift in the demand curve or change in demand: If more or less of a commodity is demanded, at the same price, due to change in factors other than the price of the commodity concerned (such as change in income, or taste or prices of other related goods, etc.).

- In this situation, there is an either rightward shift or leftward shift in the demand curve itself.
- Here the rightward shift in the demand curve indicates increase in demand while the leftward shift indicates decrease in demand.

II.2 THEORY OF SUPPLY

Supply

- Supply of a commodity refers to various quantities of it which producers are willing and able to offer for sale at a particular time at various corresponding prices.
- supply shows a relationship between quantity supplied and price of a commodity, whereas quantity supplied refers to a specific quantity which a producer is willing to sell at a specific price.

Supply Schedule

A supply schedule is a tabular statement that states the different quantities of a commodity offered for sale at different prices and has two types.

- Individual supply schedule** is a tabular statement which shows the different quantities of a commodity offered for sale by an individual firm at different prices per time period.

Table 2.3: Individual supply schedule

Price (Per kg)	Quantity Supplied
5	15
8	20
12	28

- Market supply schedule** is a tabular statement which shows the sum of the quantities supplied by all the sellers.

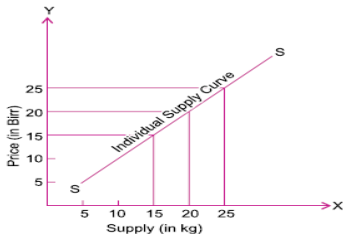
Table 2.4: Market demand schedule

Price (per kg)	Supply of Firm (X)	Supply of Firm (Y)	Market Supply (X+Y)
5	15	12	27
8	20	18	38
12	28	25	53

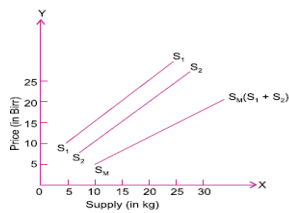
Supply Curve

A supply curve conveys the same information as a supply schedule. But it shows the information graphically rather than in a tabular form and has two types.

- Individual supply curve** refers to the curve which expresses graphically the relationship between different quantities of a commodity supplied by an individual firm at different prices per time period.



2. **Market supply curve** is found by adding horizontally the individual supply curves.



Supply Function

All the above factors influencing the supply of a commodity can be briefly expressed in the following functional relationship:

$$S_x = f(P_x, P_v, P_f, B, Z)$$

Where:- S_x stands for the supply of a commodity X

P_x shows the price of this commodity X,

P_v is the price of related goods.

B represents objectives of firm

Z refers to other relevant factors

Law of Supply

- The Law of supply expresses the functional relationship between the price of a commodity and its quantity supplied.
- Price and supply are observed to be directly related
- For example, if the price of apples rises, quantity supplied by sellers also rises and vice-versa.

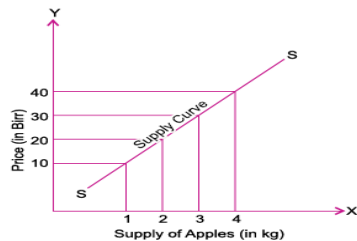


Figure 2.14: Supply curve

Statement of the Law:- The law of supply states that there is a direct relationship between the price of a commodity and its supply. Or other things being equal, the supply of a commodity increases with an increase in its price and decreases with the fall in price.

Assumptions of the Law of Supply

Law of supply depends on the basic assumption, 'other things being equal (*ceteris paribus*)'. Means factors other than price which affect the supply of a commodity.

We may summarize the assumptions of the law of supply as follows:

- There should be no change in the prices of related goods,
- There should be no change in the prices of factors of production,
- There should be no change in the goals of the firm,
- There should be no change in the state of technology,
- The income of the buyers and sellers should remain constant.

Exceptions to the Law of Supply

There are some situations when the law of supply does not operate. With an increase in price, less of a commodity is supplied and vice-versa. Known as exceptions to the law of supply. The main exceptions are:-

- **Future Expectations About Change in Prices:** Law of supply will not apply if there is an expectation about change in prices of a commodity in the near future.
- **Agricultural Products:** The law of supply does not apply in the case of agricultural products because their supply is governed by natural factors such as flood, drought, rainfall etc.
- **Perishable Commodities:** The supply of perishable commodities like milk, fruits, vegetables etc. is not affected by their prices. Producers try to sell more perishable commodities even when their prices decline.
- **Good of Auction:** Since supply of auction goods is limited, the law of supply does not operate in their case.
- **Artistic Goods:** Law of supply does not apply in the case of artistic goods since the supply of these goods cannot be changed.

Basis of the Law of Supply or Why does the Supply Curve Slope Upwards?

- Supply curve normally slopes upwards to the right.
- The positive slope of the supply curve
- Direct relationship between the price of the commodity and its supply.

There are several reasons for this direct relationship, as given below:

- **Expectations of Profit:** If prices are high, profit expectation increases with the result that producers increase their output or production.
- **Change in Stock:** An increase in the price of a commodity induces the sellers to dispose of at least a part of their stock.
- **Entry and Exit of Firms:** If, due to rising prices there are high profits, new firms enter into the market and add to the supply of the commodity.

Determinants of Supply

- ❖ **Price of the Commodity:** The price of a commodity is the most important factor affecting its supply. Supply is more when price is more and vice-versa.
- ❖ **Changes in Factor Prices:** An increase in the prices of factors of production leads to an increase in the cost of production.
- ❖ **Price of Related Goods:** an increase in the price of other, related goods induces the firms to produce more of those other goods, leading to a reduction in the supply of the goods whose price has remained unchanged.
- ❖ **Objectives of the Firm:** the objective of maximum profit, then volume of output or supply will increase, even when profit declines.
- ❖ **State of Technology:** If there is change in the technique of production leading to fall in the cost of production, supply of a commodity will increase.
- ❖ **Other Factors:** Beside the main factors discussed above, there are many other factors which affect the supply of a commodity such as fiscal policy of the government, the prices which are likely to prevail in the near future, etc.

Difference Between Movement along a Supply curve (or change in Quantity Supplied) and Shift in the Supply Curve (or change in Supply)

Movement along a supply curve (or change in quantity supplied): Other things being equal, if the quantity supplied increases or decreases due to rise or fall in the prices of the commodity alone. Thus, movement along the supply curve is caused by a change in the commodity's own price. In this situation, supply curve remains the same.

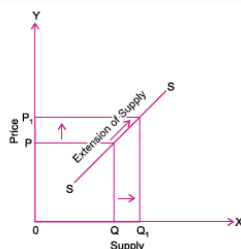


Figure 2.15: Extension of supply

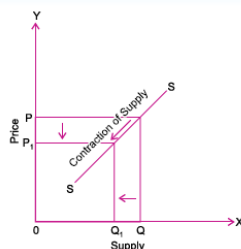
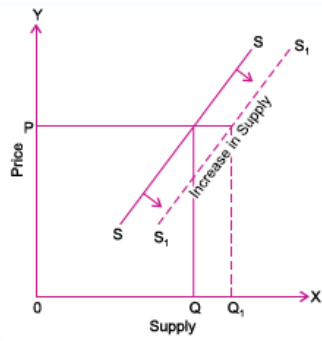
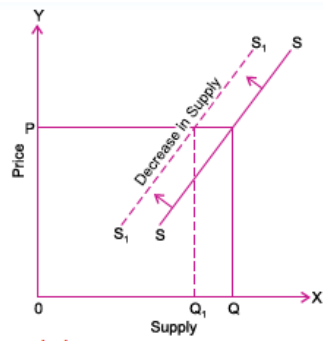


Figure 2.16: Contraction of supply

Shift in the supply curve (or change in supply): If more or less quantity of a commodity is supplied at every alternative price due to changes in factors other than the price of the commodity concerned. A shift in the supply curve is caused by a change in something other than the commodity's own price.



a) *Increase in supply*



b) *Decrease in supply*

Figure 2.17: An increase and decrease of supply