Unit = II Theory of Demand and supply –
Theory of Demand:

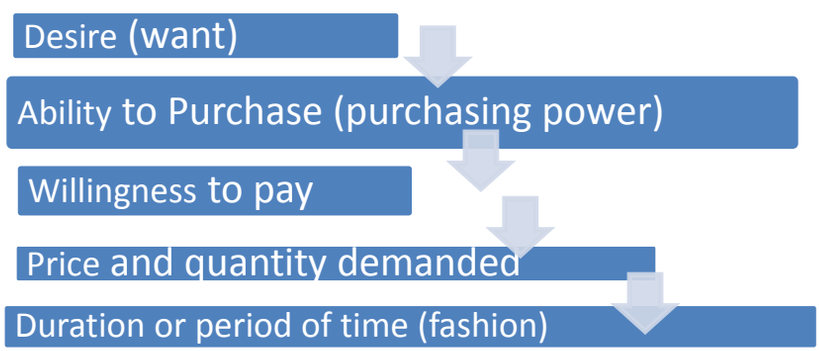
Concept of Demand :

Demand in economics manner, is a desire or wish which must be backed up by the ability or the capacity to pay for the goods and willingness of the consumer to spend for the goods. Therefore, Demand analysis is concerned with consumer behavior.

Meaning of Demand :

In simple language, demand means a desire. Desire means an urge to have something. In Economics, demand means a desire which is backed by willingness and ability to pay. For example, if a person has the desire to purchase a television set but does not have the adequate purchasing power then it will be simply a desire and not a demand. Thus, demand is an effective desire. But all desires are not demand.

Hence Demand =



Definition of Demand :

According to Benham, "The demand for anything at a given price is the amount of it, which will be bought per unit of time at that price."

According to Paul Samulson, "Law of demand states that people will buy

more at lower price and buy less at higher prices, ceteris Paribas, or other things remaining the same."

Law of Demand :

The law of demand was introduced by Prof. Alfred Marshall in his book, 'Principles of Economics', which was published in 1890. The law explains the functional relationship between price and quantity demanded.

Statement of the Law :

According to Prof. Alfred Marshall, "Other things being equal, higher the price of a commodity, smaller is the quantity demanded and lower the price of a commodity, larger is the quantity demanded."

In other words, other factors remaining constant, if the price of a commodity rises, demand for it falls and when price of a commodity falls demand for the commodity rises. Thus, there is an inverse relationship between price and quantity demanded.

Symbolically, the functional relationship between demand and price is expressed as :

$D_x = f(P_x)$

Where D = Demand for a commodity

x = Commodity

f = Function

P_x = Price of a commodity

Assumptions of Demand :

The demand for goods is determined by the following factors :

1) **Price of the product:** Price determines the demand for a commodity to a large extent. Consumers prefer to purchase a product in large quantities when price of a product is less and they purchase a product in small quantities when price of a product is high.

2) **Income of the consumer:** Income of a consumer decides purchasing power which in turn influences the demand for the product. Rise in income will lead to a rise in demand for the commodity and a fall in income will lead to a fall in demand for the commodity.

3) **Prices of Substitute/relative Goods :** If a substitute good is available at a lower price then people will demand cheaper substitute good than costly good. For example, if the price of sugar rises then demand for jaggery will rise.

4) **Price of Complementary Goods :** Change in the price of one commodity would also affect the demand for other commodity. For example, car and fuel. If the price of fuel rises, then demand for cars will fall.

5) **Nature of product :** If a commodity is a necessity and its use is unavoidable, then its demand will continue to be the same irrespective of the corresponding price. For example, medicine to control blood pressure.

6) **Size of population :** Larger the size of population, greater will be the demand for a commodity and smaller the size of population smaller will be the demand for a commodity.

7) **Expectations about future prices :** If the consumer expects the price to fall in future, he will buy less in the present at the prevailing price. Similarly, if he expects the price to rise in future, he will buy more in the present at the prevailing price.

8) **Advertisement effect:** Advertisement, sales promotion scheme and effective sales- manship tend to change the preferences of the consumers and lead to demand for many products. For example, cosmetics, tooth brush etc.

9) **Tastes, Habits and Fashions :** Taste and habits of a consumer influence the demand for a commodity. If a consumer likes to eat chocolates or consume tea, he will demand more of them. Similarly, when a new fashion hits the market, the consumer demands that particular type of commodity. If a commodity goes out of fashion then suddenly the demand for that product tends to fall.

10) **Level of Taxation :** High rates of taxes on goods or services would increase

the price of the goods or services. This, in turn would result in a decrease in demand for goods or services and vice-versa.

11) **Other factors :**

1) Climatic conditions
2) Changes in technology
3) Government policy
4) Customs and traditions etc.

Law of Demand : Introduction :

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Following are the exceptions to the law of demand:

1) **Giffen's paradox :** Inferior goods or low quality goods are those goods whose demand does not rise even if their price falls. At times, demand

decreases when the price of such commodities fall. Sir Robert Giffen observed this behaviour in England in relation to bread. He noted that, when the price of bread declined, people did not buy more because of an increase in their real income or purchasing power. They preferred to buy superior good like meat. This is known as Giffen's paradox.

2) **Conspicuous Goods :** The concept of conspicuous goods or consumption goods was given by Mr.Veblen, so it is also known as Veblen effect or prestigious goods effect. The demand for certain goods is affected by demonstration effect or status symbol of a social group of society. Expensive goods like diamond, gold etc. are status symbol. So rich people buy more of it, even when their prices are high.

3) **Speculation :** The law of demand does not hold true when people expect prices to rise still further. In this case, although the prices have risen today, consumers will demand more in anticipation of further rise in price. For example, prices of oil, sugar etc. tend to rise before Diwali. So people go on purchasing more at a high price as they anticipate that prices may rise during Diwali.

4) **Price illusion :** Consumers have an illusion that high priced goods are of a better quality. Therefore, the demand for such goods tend to increase with a rise in their prices. For example, branded products which are expensive are demanded even at a high price.

5) **Ignorance effect :** Sometimes, due to ignorance people buy more of a commodity at high price. This may happen when consumer is ignorant about the price of that commodity at other places.

6) **Habitual goods :** Due to habit of consumption, certain goods like tea is purchased in required quantities even at a higher price.

7) **Irrational and impulsive purchase** : Sometimes consumers tend to make impulsive purchases without making calculations about price and usefulness of the product and purchase the commodity at any price in such context law of demand fails.

The law of demand is explained with the help of the following demand schedule and diagram.

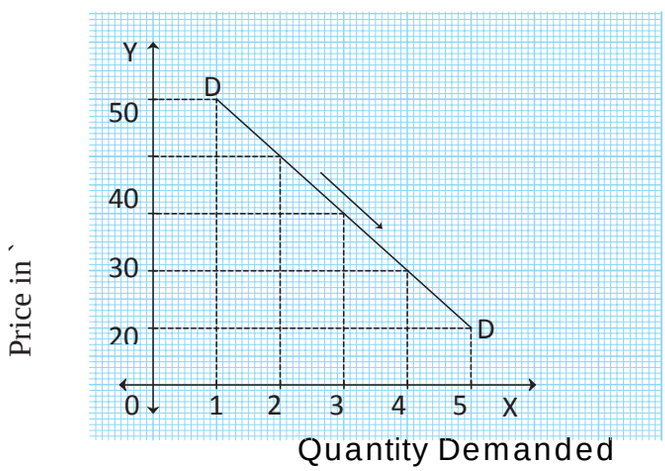
Demand schedule :

Price of commodity '*x*' (`)	Quantity demanded of commodity '*x*' (in kgs.)
50	1
40	2
30	3
20	4
10	5

As shown in Table when price of commodity '*x*' is ` 50, quantity demanded is 1 kg. When price falls from ` 50 to ` 40, quantity demanded rises from 1 kg to 2 kgs. Similarly, at price ` 30, quantity demanded is 3 kgs and when price falls from ` 20 to `10, quantity demanded rises from 4 kg sto 5 kgs

Thus, as the price of a commodity falls, quantity demanded rises and when price of commodity rises, quantity demanded falls. This shows an inverse relationship between price and quantity demanded.

Demand Curve



Concept of Elasticity of Demand :

The term elasticity indicates responsiveness of one variable to a change in the other variable. Elasticity of demand refers to the degree of responsiveness of quanitity demanded to a change in its price or any other factor.

According to Prof. Marshall, "Elasticity of demand is great or small according to the amount demanded which rises much or little for a given fall in price and quantity demanded falls much or little for a given rise in price."

It is clear from the above definition that elasticity of demand is a technical term which describes the responsiveness of change in quantity demanded to fall or rise in its price. In other words, it is the ratio of percentage change in quantity demanded of a commodity to a percentage change in price.

Types of Elasticity of Demand :

1) Income elasticity
2) Cross elasticity
3) Price elasticity

Income elasticity : It refers to the degree of responsiveness of a change in quantity demanded to a change in the income only, other factors including price remain unchanged. It is expressed as :

Ey = Percentage change in Qty. Demanded Percentage change in Income

Symbolically,

$$Ey = \frac{\% \square Q}{\% \square Y}$$

$$\frac{Q}{Q} \times \frac{Y}{\square Y}$$

1) Where,
2) □ = Represents change Q = Orignal demand Y = Orignal income
3) □Q = Change in quantity demanded
4) □Y = Change in income of a consumer

1) **Cross elasticity :** It refers to a change in quantity demanded of one commodity due to a change in the price of other commodity.

(Complementary goods or substitutes)

$Ec = \frac{\text{Percentage change in Qty. demanded of A}}{\text{Percentage change in Price of B}}$

(A = Original commodity, B = Other commodity)

$= \frac{\square Q_A}{Q_A} \times \frac{P_B}{\square P_B}$

Q_A = Original quantity demanded of commodity A

$\square Q_A$ = Change in quantity demanded of commodity A

P_B = Original price of commodity B

$\square P_B$ = Change in price of commodity B

Price elasticity : According to Prof. Alfred Marshall, price elasticity of demand is a ratio of proportionate change in the quantity demanded of a commodity to a given proportionate change in its price.

$Ed = \frac{\text{Percentage change in Quantity Demanded}}{\text{Percentage change in Price}}$

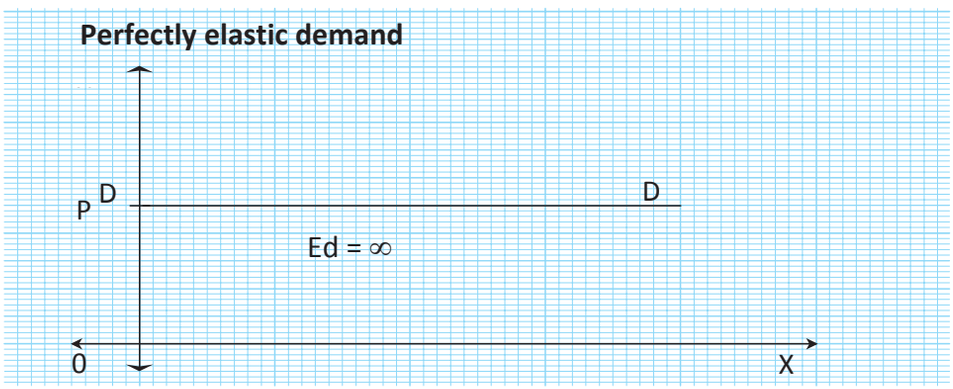
Symbolically, $Ed = Ed = \frac{\square Q}{Q} \div \frac{\square P}{P}$

$\frac{\square Q}{Q} \times \frac{P}{P}$

Types of Price Elasticity of Demand :

Perfectly Elastic Demand (Ed = ∞) : When a slight or zero change in the price brings about an infinite change in the quantity demanded of that commodity, it is called perfectly elastic demand. It is only a theoretical concept. For example, 10% fall in price may lead to an infinite rise in demand.

$$Ed = \frac{\text{Percentage change in Quantity Demanded}}{\text{Percentage change in Price}} = \square$$



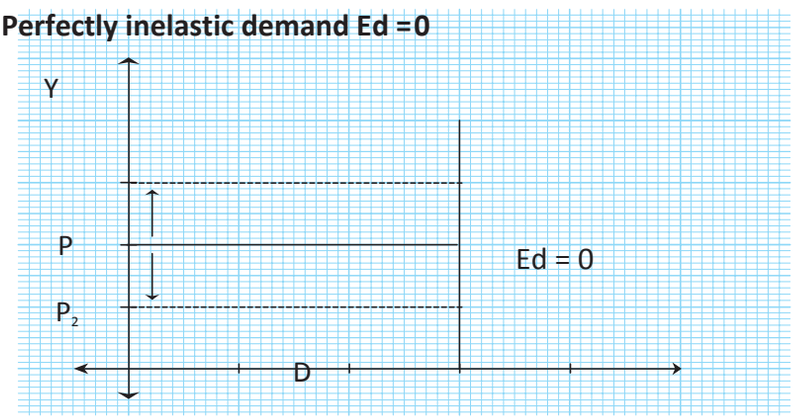
2) Perfectly inelastic demand (Ed = 0) :

When a percentage change in price has no effect on the quantity demanded of a commodity it is called perfectly inelastic demand. For example, 20% fall in price will have no effect on quantity demanded. In practice, such a situation rarely occurs.For example, demand for salt, milk.

$$Ed = \frac{\% \ \square Q}{\% \ \square P}$$

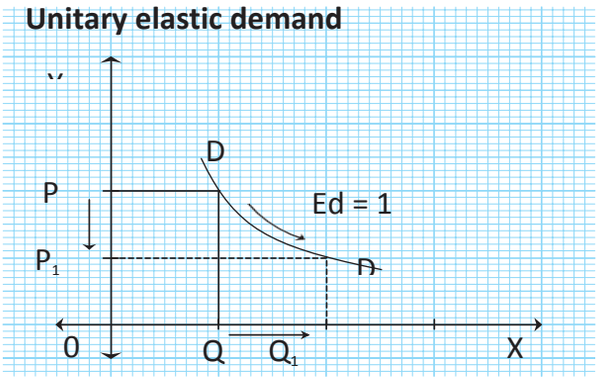
$$Ed = \frac{0}{20} = 0$$

Ed = 0



3) Unitary elastic demand (Ed = 1) :

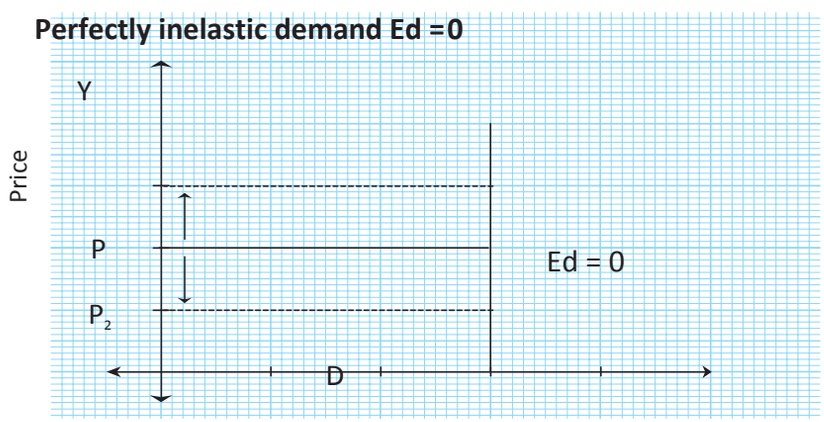
When a percentage change in price leads to a proportionate change in quantity demanded then demand is said to be unitary elastic. For example, 50% fall in price of a commodity leads to 50% rise in quantity demanded.



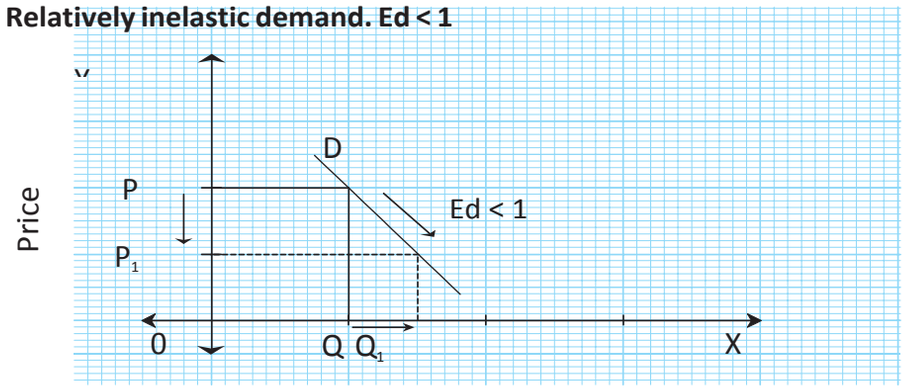
In figure, when price falls from OP to OP_1 (50%), demand rises from OQ to OQ_1 (50%). Therefore, the slope of the demand curve is a 'rectangular hyperbola'.

4) Relatively elastic demand (Ed >1) :

When a percentage change in price leads to more than proportionate change in quantity demanded, the demand is said to be relatively elastic. For example, 50% fall in price leads to 100% rise in quantity demanded.



5) Relatively inelastic demand (Ed < 1) : When a percentage change in price leads to less than proportionate change in the quantity demanded, demand is said to be relatively inelastic. For example, 50% fall in price leads to 25% rise in quantity demanded.



Factors influencing the elasticity of demand :

Elasticity of demand depends upon several factors which are discussed below :

1) **Nature of commodity :** By nature we can classify commodities as necessaries, comforts and luxury goods. Demand for necessaries like foodgrains, medicines, textbooks etc. is relatively inelastic and for comforts and luxury goods like cars, perfumes, furniture etc. demand is relatively elastic.
2) **Availability of substitutes :** Demand for a commodity will be more elastic, if its close substitutes are available in the market. For example, lemon juice, sugarcane juice etc. But commodities having no close substitutes like salt the demand will be inelastic.
3) **Number of uses :** Single use goods have a less elastic demand. Multi-use goods have more elastic demand, For example, coal, electricity etc.
4) **Habits :** Habits make demand for certain goods relatively inelastic. For example, addicted goods, drugs etc.
5) **Durability :** The demand for durable goods is relatively elastic. For

example, furniture, washing machine etc. Demand for perishable goods is inelastic. For example, milk, vegetables etc.

6) **Complementary goods :** The demand for a commodity which is used in conjunction with other commodities to satisfy a single want is relatively inelastic. For example, a fall in the price of mobile handsets may lead to rise in the demand for sim cards.

7) **Income of the consumer :** Demand for goods is usually inelastic, if the consumer has high income. The demand pattern of a very rich and an extremely poor person is rarely affected by significant changes in the price.

8) **Urgency of needs :** Goods which are urgently needed will have relatively inelastic demand. For example, medicines. Luxury goods which are less urgent have relatively elastic demand.

9) **Time period :** Elasticity of demand is always related to period of time. It varies with the length of time period. Generally speaking, longer the duration of period greater will be the elasticity of demand and vice-versa. This is because a consumer can change the consumption habits in the long run in favour of cheaper substitutes of the commodities.

What is Demand Forecasting?

Demand forecasting is a process of predicting the demand for an organisation's products or services in a specified time period in the future. Demand forecasting is helpful for both new as well as existing organizations in the market **For Example**, for various needs for demand forecasting in business organizations, a new organisation needs to anticipate demand to expand its scale of production. On the other hand, an existing organisation requires demand forecasts to avoid problems, such as overproduction and underproduction. **Demand forecasting** enables an organisation to arrange for the required inputs as per the predicted demand, without any wastage of materials and time.

Short-term forecasting is done for coordinating routine activities, such as scheduling production activities, formulating pricing policy, and developing an appropriate sales strategy.

On the contrary, **long-term forecasting** is performed for planning a new project, expansion, and upgradation of production plant, etc.
There are a number of techniques for forecasting demand. Some of the popular techniques of demand forecasting are survey methods and statistical methods.

Concept of Demand Forecasting

In order to mitigate risks, it is of paramount importance for organisations to determine the future prospects of their products and services in the market. This knowledge of the future demand for a product or service in the market is gained through the process of demand forecasting.

Demand forecasting can be defined as a process of predicting the future demand for an organisation's goods or services.
It is also referred to as **sales forecasting** as it involves anticipating the future sales figures of an organisation.

Demand Forecasting Definition

Some of the popular definitions of demand forecasting are as follows:

*Demand estimation (forecasting) may be defined as a process of finding values for demand in future time periods.*Evan J. Douglas

Demand forecasting is an estimate of sales during a specified future period based on proposed ***marketing plan*** *and a set of particular uncontrollable and competitive forces.*Cundiff and Still

Demand forecasting helps an organisation to take various business decisions, such as planning the production process, purchasing raw materials, managing funds, and deciding the price of its products.

Demand can be forecasted by organisations either internally by making estimates called **guess estimate** or externally through specialised consultants or market research agencies.

Importance of Demand Forecasting

Demand forecasting is vital to the management of every business. It enables an organisation to mitigate business risks and make effective business decisions.

Moreover, demand forecasting provides insight into the organisation's capital investment and expansion decisions.

Importance of Demand forecasting are:

1. **Producing the desired output**
2. **Assessing the probable demand**
3. **Forecasting sales figures**
4. **Better control**
5. **Controlling inventory**
6. **Assessing manpower requirement**
7. **Ensuring stability**
8. **Planning import and export policies**

Producing the desired output

Demand forecasting enables an organisation to produce the pre-determined output. It also helps the organisation to arrange for the various factors of production (land, labour, capital, and enterprise) beforehand so that the desired quantity can be produced without any hindrance.

Assessing the probable demand

Demand forecasting enables an organisation to assess the possible demand for its products and services in a given period and plan production accordingly. In this way, demand forecasting avoids dependence on merely making assumptions for demand.

Forecasting sales figures

Sales forecasting refers to the estimation of sales figures of an organisation for a given period. Demand forecasting helps in predicting the sales figures by considering historical sales data and current trends in the market.

Better control

In order to have better control on business activities, it is important to have a proper understanding of cost budgets, profit analysis, which can be achieved through demand forecasting.

Controlling inventory

As discussed earlier, demand forecasting helps in estimating the future demand for an organisation's products or services. This, in turn, helps the organisation to accurately assess its requirement for raw material, semi-finished goods, spare parts, etc.

Assessing manpower requirement

Demand forecasting helps inaccurate estimation of the manpower required to produce the desired output, thereby avoiding the situations of under-employment or over-employment.

Ensuring stability

Demand forecasting helps an organisation to stabilise their operations by initiating the development of suitable business policies to meet cyclical and seasonal fluctuations of an economy.

Planning import and export policies

At the macro level, demand forecasting serves as an effective tool for the government in determining the import and export policies for the nation. It helps in assessing whether import is required to meet the possible deficit in domestic supply.

Techniques of Demand Forecasting

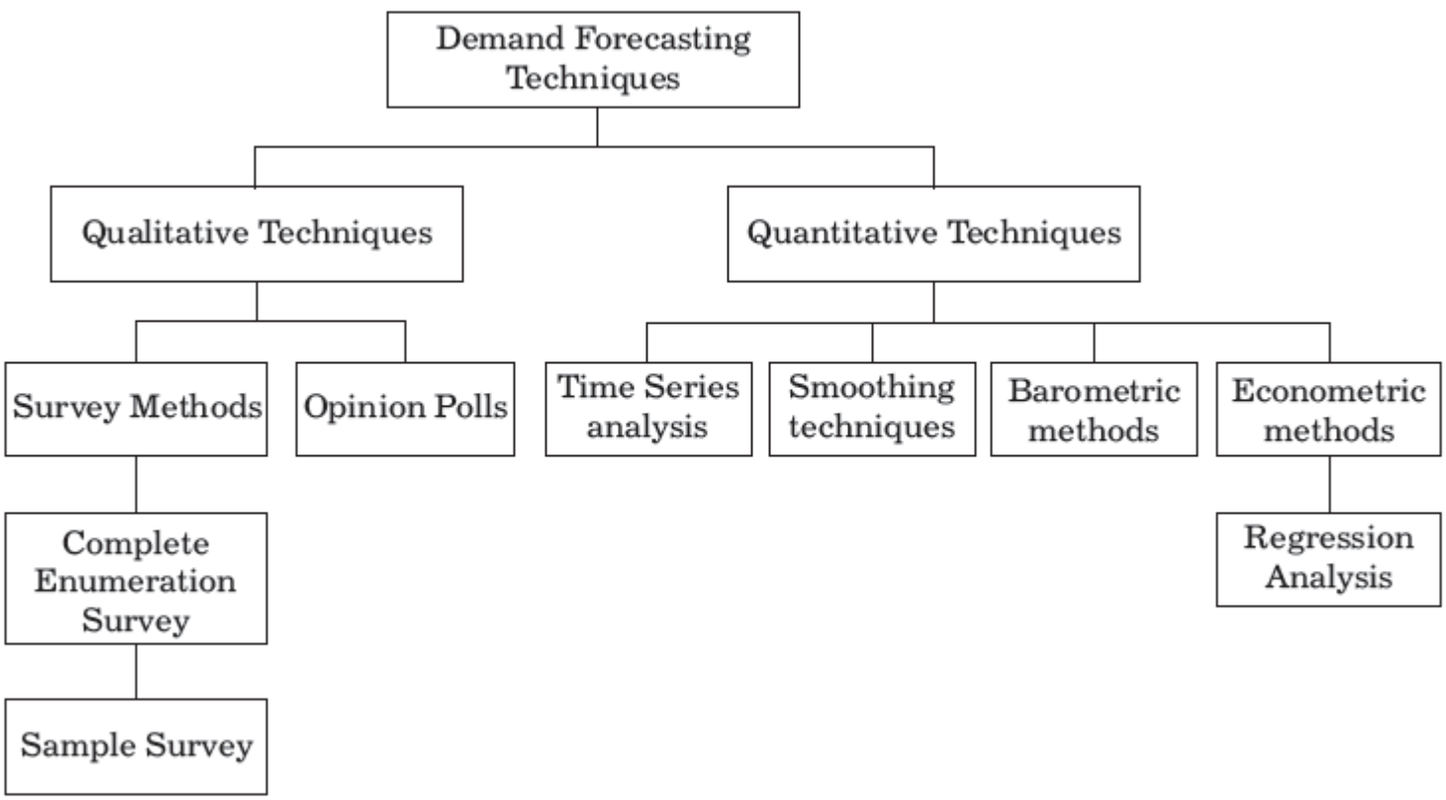
Methods of demand forecasting are broadly categorised into two types. Let us discuss these techniques & methods of demand forecasting in detail:

Qualitative Techniques

- Survey Methods

Quantitative Techniques

- Time Series Analysis
- Smoothing Techniques
- Barometric Methods
- Econometric Methods



Methods of Demand Forecasting

Qualitative Techniques

Qualitative techniques rely on collecting data on the buying behaviour of consumers from experts or through conducting surveys in order to forecast demand.These techniques are generally used to make shortterm forecasts of demand.
Qualitative techniques are especially useful in situations when historical data is not available; for example, introduction of a new product or service. These techniques are based on experience, judgment, intuition, conjecture, etc.

Survey Methods

Survey methods are the most commonly used methods of forecasting demand in the short run. This method relies on the future purchase plans of consumers and their intentions to anticipate demand.
Thus, in this method, an organization conducts surveys with consumers to determine the demand for their existing products and services and anticipate the future demand accordingly. The two types of survey methods are explained as follows:

- **Complete enumeration survey**: This method is also referred to as the **census method** of demand forecasting. In this method, almost all potential users of the product are contacted and surveyed about their purchasing plans.

  Based on these surveys, demand forecasts are made. The aggregate demand forecasts are attained by totalling the probable demands of all individual consumers in the market.

- **Sample survey:** In this method, only a few potential consumers (called sample) are selected from the market and surveyed. In this method, the average demand is calculated based on the information gathered from the sample.

Opinion poll

Opinion poll methods involve taking the opinion of those who possess knowledge of market trends, such as sales representatives, marketing experts, and consultants.

The most commonly used opinion polls methods are explained as follows:

- **Expert opinion method:** In this method, sales representatives of different organisations get in touch with consumers in specific areas. They gather information related to consumers' buying behaviour, their reactions and responses to market changes, their opinion about new products, etc.

- **Delphi method:** In this method, market experts are provided with the estimates and assumptions of forecasts made by other experts in the industry. Experts may reconsider and revise their own estimates and assumptions based on the information provided by other experts.

- **Market studies and experiments:** This method is also referred to as market experiment method. In this method, organisations initially select certain aspects of a market such as population, income levels, cultural and social background, occupational distribution, and consumers' tastes and preferences.

  Among all these aspects, one aspect is selected and its effect on demand is determined while keeping all other aspects constant.

Quantitative Techniques

Quantitative techniques for demand forecasting usually make use of statistical tools. In these techniques, demand is forecasted based on historical data. These methods are generally used to make long-term forecasts of demand. Unlike survey methods, statistical methods are cost effective and reliable as the element of subjectivity is minimum in these methods. Let us discuss different types of quantitative methods:

Time Series Analysis

Time series analysis or trend projection method is one of the most popular methods used by organisations for the prediction of demand in the long run. The term time series refers to a sequential order of values of a variable (called trend) at equal time intervals.
Using trends, an organisation can predict the demand for its products and services for the projected time. There are four main components of time series analysis that an organisation must take into consideration while forecasting the demand for its products and services. These components are:

- **Trend component:** The trend component in time series analysis accounts for the gradual shift in the time series to a relatively higher or lower value over a long period of time.

- **Cyclical component:** The cyclical component in time series analysis accounts for the regular pattern of sequences of values above and below the trend line lasting more than one year.

- **Seasonal component:** The seasonal component in time series analysis accounts for regular patterns of variability within certain time periods, such as a year.

- **Irregular component:** The irregular component in time series analysis accounts for a short term, unanticipated and non-recurring factors that affect the values of the time series.

Smoothing Techniques

In cases where the time series lacks significant trends, smoothing techniques can be used for demand forecasting. Smoothing techniques are used to eliminate a random variation from the historical demand.

This helps in identifying demand patterns and demand levels that can be used to estimate future demand. The most common methods used in smoothing techniques of demand forecasting are simple moving average method and weighted moving average method.

The **simple moving average** method is used to calculate the mean of average prices over a period of time and plot these mean prices on a graph which acts as a scale.

For example, a five-day simple moving average is the sum of values of all five days divided by five.
The **weighted moving average** method uses a predefined number of time periods to calculate the average, all of which have the same importance.

For example, in a four-month moving average, each month represents 25% of the moving average.

Barometric Methods

Barometric methods are used to speculate the future trends based on current developments. This methods are also referred to as the leading indicators approach to demand forecasting.
Many economists use barometric methods to forecast trends in business activities. The basic approach followed in barometric methods of demand analysis is to prepare an index of relevant economic indicators and forecast future trends based on the movements shown in the index.

The barometric methods make use of the following indicators:

- **Leading indicators:** When an event that has already occurred is considered to predict the future event, the past event would act as a leading indicator.

  For example, the data relating to working women would act as a leading indicator for the demand of working women hostels.

- **Coincident indicators:** These indicators move simultaneously with the current event.

  For example, a number of employees in the non-agricultural sector, rate of unemployment, per capita income, etc., act as indicators for the current state of a nation's economy.

- **Lagging indicators:** These indicators include events that follow a change. Lagging indicators are critical to interpret how the economy would shape up in the future. These indicators are useful in predicting the future economic events.

  For example, inflation, unemployment levels, etc. are the indicators of the performance of a country's economy.

Econometric Methods

Econometric methods make use of statistical tools combined with economic theories to assess various economic variables (for example, price change, income level of consumers, changes in economic policies, and so on) for forecasting demand.

The forecasts made using econometric methods are much more reliable than any other demand forecasting method. An econometric model for demand forecasting could be single equation regression analysis or a system of simultaneous equations. A detailed explanation of regression analysis is given in the next section.

- **Regression Analysis:** The regression analysis method for demand forecasting measures the relationship between two variables. Using regression analysis a relationship is established between the dependent (quantity demanded) and independent variable (income of the consumer, price of related goods, advertisements, etc.).

For example, regression analysis may be used to establish a relationship between the income of consumers and their demand for a luxury product. In other words, regression analysis is a statistical tool to estimate the unknown value of a variable when the value of the other variable is known.
After establishing the relationship, the regression equation is derived assuming the relationship between variables is linear.

The formula for a simple linear regression is as follows:

Y =a + bX
Where Y is the dependent variable for which the demand needs to be forecasted; b is the slope of the regression curve; X is the independent variable; and a is the Y-intercept. The intercept a will be equal to Y if the value of X is zero.

Law of Supply

Introduction :

The study of supply is as important as the study of demand. Supply is a fundamental economic concept that describes the total amount of a specific good or service that is available to a seller. The total amount of goods or services available for sale at any specified price is known as supply.

Concept of Total Output, Stock and Supply : Total Output :

Output is produced in the process of production. "Total output can be defined as the sum total of the quantity of the commodity produced at a given period of time in the economy.'' Production leads to consumption. In the process of production inputs are converted into output or final goods.

Stock :

Stock is the total quantity of commodity available for sale with a seller at a particular point of time. It is the source of supply. It is potential supply. By

increasing production, stock can be increased. Without stock, supply is not possible. Normally, stock exceeds supply and it is fixed and inelastic. In case of perishable goods such as milk, fish etc. stock may be equal to supply. On the other hand, for durable goods such as furniture, garments etc. stock can exceed the supply.

Supply :

Supply is a relative term. It is always expressed in relation to price, time and quantity.

Meaning of Supply :

The word 'supply' implies the various quantities of a commodity offered for sale by producers during a given period of time at a given price. It is related to time and price.

Definition of Supply :

According to Paul Samuelson, "Supply refers to the relation between market prices and the amount of goods that producers are willing to supply.''

Supply refers to the quantity of a commodity that a seller is willing and able to offer for sale at a given price, during a certain period of time. For example, a farmer's total output of rice is 4000 kgs. This is the total stock. If the price is ` 40 per kg, he offers 1000 kgs for sale. This is the actual supply.

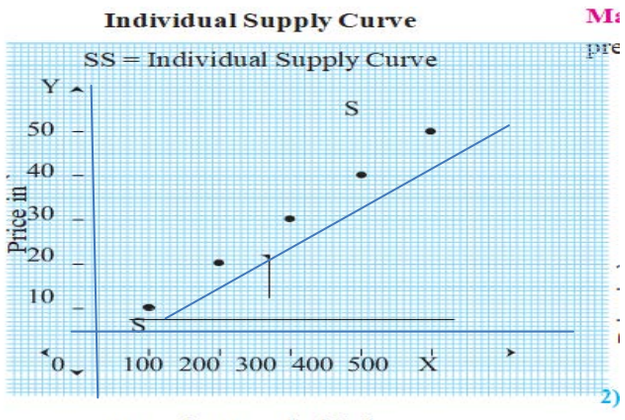
Supply Schedule

Price of a commodity *x* (in ` per kgs.)	Supply of a commodity *x* (in kgs.)
10	100
20	200
30	300
40	400
50	500

Above table explains the functional relationship between price and quantity supplied of a commodity. Lower the price, lower the quantity of a

commodity supplied and vice versa. At the lowest price of ` 10, supply is also lowest at 100 kgs. At the highest price of ` 50, quantity supplied is highest at 500 kgs.

Supply Curve : It is a graphical presentation of supply schedule.



FACTOR DETERMINANTS OF SUPPLY

1) **Price of commodity :** Price is an important factor influencing the supply of a commodity. More quantities are supplied at a higher price and less quantities are supplied at a lower price. Thus, there is a direct relationship between price and quantity supplied.
2) **State of technology :** Technological improvements reduce the cost of production which lead to an increase in production and supply.
3) **Cost of Production :** If the factor price increases, the cost of production also increases, as a result, supply decreases.
4) **Infrastructural facility :** Infrastructure in the form of transport, communication, power, etc. influences the production process as well as supply. Shortage of these facilities decreases the supply and vice versa.
5) **Government policy :** Favourable Government policies may encourage supply and unfavourable government policies may discourage the supply. Government policies like taxation, subsidies, industrial policies, etc. may encourage or discourage production and supply, depending upon government policy measures.

6) **Natural conditions :** The supply of agricultural products depends on the natural conditions. For example, a good monsoon and favourable climatic condition will produce a good harvest, so the supply of agricultural products will increase and unfavourable climatic conditions will lead to a decrease in supply.

7) **Future expectations about price :** If the prices are expected to rise in the near future, the producer may withhold the stock. This will reduce or vice versa.

8) **Other factors :** It includes,
- nature of the market,
- relative prices of other goods,
- export and imports,
- industrial relations,
- availability of factors of production etc. If all factors are favourable, supply of a commodity will be more and vice versa.

Law of Supply Introduction :

The law of supply is also a fundamental principle of economic theory like law of demand. It was introduced by Prof. Alfred Marshall in his book, 'Principles of Economics' which was published in 1890. The law explains the functional relationship between price and quantity supplied.

Statement of the Law:

"Other things being constant, higher the price of a commodity, more is the quantity supplied and lower the price of a commodity less is the quantity supplied"

In simple words, "other factors remaining constant, a rise in price results in a rise in the quantity supplied and vice-versa. Thus, there is a direct relationship between price and quantity supplied. Symbolically,

$S_x = f(P_x)$, S = Supply, x = Commodity f = Function, P = Price of commodity

Assumptions of the law :

The law of supply is based on the following assumptions :

1) **Constant cost of production :** It is assumed that there is no change in the cost of production .A change in cost of production will affect the profits of the seller. Therefore less quantity will be supplied at the same price.
2) **Constant technique of production :** It is also assumed that technique of production does not change. Improved technique of production may lead to an increase in production. This in turn may lead to an increase in the supply at the same price.
3) **No change in weather conditions :** It is assumed that there is no change in the weather conditions. Natural calamities like floods, earthquakes etc. may decrease supply.
4) **No change in Government policy :** It is also assumed that government policies like taxation policy, trade policy etc. remain unchanged.
5) **No change in transport cost :** It is assumed that there is no change in the condition of transport facilities and transport cost. For example, better transport facility increases supply at the same price.
6) **Prices of other goods remain constant :** Prices of other goods are assumed to remain constant. If they change, the law of supply may not hold true because producer may transfer resources to other products.
7) **No future expectations :** The law also assumes that the sellers do not expect future changes in the price of the product.

Exceptions to the Law of Supply :

Following are the exceptions to the law of supply:

1) **Supply of labour :** Labour supply is the total number of hours that workers to work at a given wage rate. It is represented graphically by a supply curve. In case of labour, as the wage rate rises the supply of labour (hours of work) would increase. So supply curve slopes upward. Supply of labour (hours of work) falls with a further rise in wage rate and supply curve of labour bends backward. This is because the worker would prefer leisure to work after receiving higher amount of wages. Thus, after a

certain point when wage rate rises the supply of labour tends to fall.

1) **Agricultural goods :** The law of supply does not apply to agricultural goods as they are produced in a specific season and their production depends on weather conditions.

   Due to unfavorable changes in weather, if the agricultural production is low, their supply cannot be increased even at a higher price.

2) **Urgent need for cash :** If the seller is in urgent need for hard cash, he may sell his product at which may even be below the market price.

3) **Perishable goods :** In case of perishable goods, the supplier would offer to sell more quantities at lower prices to avoid losses. For example, vegetables, eggs etc.

4) **Rare goods :** The supply of rare goods cannot be increased or decreased according to its demand. Even if the price rises, supply remains unchanged. For example, rare paintings, old coins, antique goods etc.

ELASTICITY OF SUPPLY

Elasticity of supply explains the quantative change in supply of a commodity, due to given change in price of commodity.

Elasticity of supply may be defined as a ratio of % change or the proportionate change in the quantity supplied to the % change or proportionate change in price.

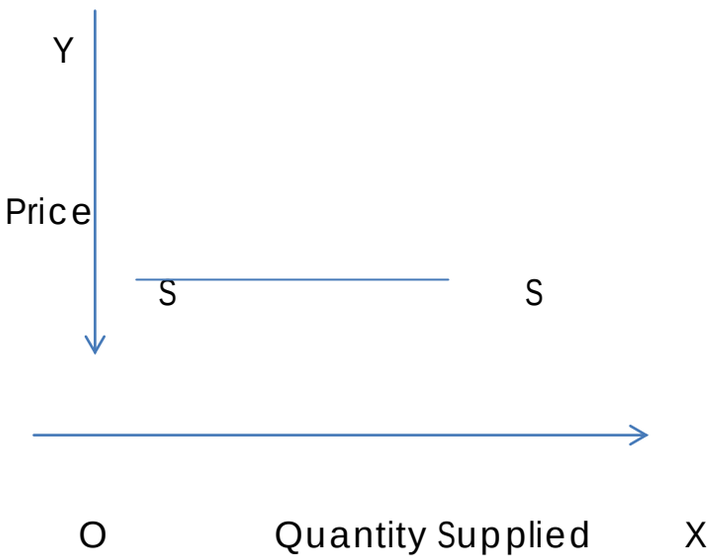
$$\frac{\%\text{ change in Q supplied}}{\%\text{ change in price}}$$

Or

$$\frac{\Delta \text{ in quantity}}{\Delta \text{ in price}}$$

Types of elasticity of Supply : -

1) Perfectly elastic supply – It is a situation in which supply of commodity changes without any change or with no change in price of commodity. The supply curve is horizontal parallel to X asis.



2) Perfectly inelastic supply – When change in price does not affect any change in quantity supplied then it is perfectly inelastic supply. Here supply curve is vertical straight line parallel to X axis.

3) Unitary elastic supply – when change in price brings about proportionately change in quantity supplied then it is unitary elastic supply. In this supply curve is equal to price. S=P

4) Relatively elastic supply – when change in supply of commodity is less than change in price then it is called relative elastic supply. Supply curve is flatter,

5) Relatively elastic supply – when % change in quantity supplied is more than the % change in price then it is called less elastic or inelastic supply. ES is less than one.