II BBA

MANAGERIAL ECONOMICS

UNIT-I

Meaning of Managerial Economics :

Managerial economics is a discipline which deals with the application of economic theory to business management. It deals with the use of economic concepts and principles of business decision making.

Definition of Managerial Economics:

According to **Spencer** and **Siegelman**:

"The integration of economic theory with business practice for the purpose of facilitating decision-making and forward planning by management".

According to **McGutgan** and **Moyer:**

"Managerial economics is the application of economic theory and methodology to decision-making problems faced by both public and private institutions".

Definitions of Economics

These definitions can conveniently be grouped into three:

(i) Smith's Wealth definition;

(ii) Marshall's Welfare definition; and

(iii) Robbins' Scarcity definition.

1. Adam Smith's Wealth Definition:

According to Smith:

"The great object of the Political Economy of every country is to increase the riches and power of that country." Like the mercantilists, he did not believe that the wealth of a nation lies in the accumulation of precious metals like gold and silver.

To him, wealth may be defined as those goods and services which command value-in- exchange. Economics is concerned with the generation of the wealth of nations. Economics is not to be concerned only with the production of wealth but also the distribution of wealth. The manner in which production and distribution of wealth will take place in a market economy is the Smithian

'invisible hand' mechanism or the 'price system'. Anyway, economics is regarded by Smith as the 'science of wealth.'

2.. Marshall's Welfare Definition:

Alfred Marshall in his book 'Principles of Economics published in 1890 placed emphasis on human activities or human welfare rather than on wealth. Marshall defines economics as "a study of men as they live and move and think in the ordinary business of life." He argued that economics, on one side, is a study of wealth and, on the other, is a study of man.

Emphasis on human welfare is evident in Marshall's own words: "Political Economy or Economics is a study of mankind in the ordinary business of life; it examines that part of individual and social action which is most closely connected with the attainment and with the use of the material requisites of well-being."

Thus, "Economics is on the one side a study of wealth; and on the other and more important side, a part of the study of man." According to Marshall, wealth is not an end in itself as was thought by classical authors; it is a means to an end—the end of human welfare.

3. Robbins' Scarcity Definition:

The most accepted definition of economics was given by Lord Robbins in 1932 in his book 'An Essay on the Nature and Significance of Economic Science. According to Robbins, neither wealth nor human welfare should be considered as the subject-matter of economics. His definition runs in terms of scarcity: "Economics is the science which studies human behaviour as a relationship between ends and scarce means which have alternative uses."

Nature of Managerial Economics:

Managers study managerial economics because it gives them insight to reign the functioning of the organization. If manager uses the principles applicable to economic behaviour in a reasonably, then it will result in smooth functioning of the organisation.

Managerial Economics is a Science

Managerial Economics is an essential scholastic field. Science is a Systematic body of Knowledge. It is based on the methodical observation. Managerial economics is also a science of making decisions with regard to scarce resources with alternative applications. It is a body of knowledge that determines or observes the internal and external environment for decision making.

Managerial Economics requires Art

Managerial economist is required to have an art of utilising his capability, knowledge and understanding to achieve the organizational objective. Managerial economist should have an art to put in practice his theoretical knowledge regarding elements of economic environment.

Managerial Economics for administration of organization

Managerial economics helps the management in decision making. These decisions are based on the economic rationale and are valid in the existing economic environment.

Managerial economics is helpful in optimum resource allocation

The resources are scarce with alternative uses. Managers need to use these limited resources optimally. Each resource has several uses. It is manager who decides with his knowledge of economics that which one is the preeminent use of the resource.

Managerial Economics has components of micro economics

Managers study and manage the internal environment of the organization and work for the profitable and long-term functioning of the organization. This aspect refers to the micro economics study. The managerial economics deals with the problems faced by the individual organization such as main objective of the organization, demand for its product, price and output determination of the organization, available substitute and complimentary goods, supply of inputs and raw material, target or prospective consumers of its products etc.

Managerial Economics has components of macro economics

None of the organization works in isolation. They are affected by the external environment of the economy in which it operates such as government policies, general price level, income and employment levels in the economy, stage of business cycle in which economy is operating, exchange rate, balance of payment, general expenditure, saving and investment patterns of the consumers, market conditions etc. These aspects are related to macro economics.

Managerial Economics is dynamic in nature

- Managerial Economics deals with human-beings (i.e. human resource, consumers, producers etc.). The nature and attitude differs from person to person. Thus to cope up with dynamism and vitality managerial economics also changes itself over a period of time.

Scope of Managerial Economics:

The scope of managerial economics is not yet clearly laid out because it is a developing science. Even then the following fields may be said to generally fall under Managerial Economics:

1. Demand Analysis and Forecasting
2. Cost and Production Analysis
3. Pricing Decisions, Policies and Practices
4. Profit Management
5. Capital Management

1.Demand Analysis and Forecasting: A major part of managerial decision making depends on accurate estimates of demand. A forecast of future sales serves as a guide to management for

preparing production schedules and employing resources. It will help management to maintain or strengthen its market position and profit base. Demand analysis also identifies a number of other factors influencing the demand for a product. Demand analysis and forecasting occupies a strategic place in Managerial Economics.

2. **Cost and production analysis**: A firm's profitability depends much on its cost of production. A wise manager would prepare cost estimates of a range of output, identify the factors causing are cause variations in cost estimates and choose the cost-minimising output level, taking also into consideration the degree of uncertainty in production and cost calculations. Production processes are under the charge of engineers but the business manager is supposed to carry out the production function analysis in order to avoid wastages of materials and time. Sound pricing practices depend much on cost control. The main topics discussed under cost and production analysis are: Cost concepts, cost-output relationships, Economics and Diseconomies of scale and cost control.

3. **Pricing decisions, policies and practices**: Pricing is a very important area of Managerial Economics. In fact, price is the genesis of the revenue of a firm ad as such the success of a business firm largely depends on the correctness of the price decisions taken by it. The important aspects dealt with this area are: Price determination in various market forms, pricing methods, differential pricing, product-line pricing and price forecasting.

4. **Profit management:** Business firms are generally organized for earning profit and in the long period, it is profit which provides the chief measure of success of a firm. Economics tells us that profits are the reward for uncertainty bearing and risk taking. A successful business manager is one who can form more or less correct estimates of costs and revenues likely to accrue to the firm at different levels of output. The more successful a manager is in reducing uncertainty, the higher are the profits earned by him. In fact, profit-planning and profit measurement constitute the most challenging area of Managerial Economics.

5. **Capital management:** The problems relating to firm's capital investments are perhaps the most complex and troublesome. Capital management implies planning and control of capital expenditure because it involves a large sum and moreover the problems in disposing the capital assets off are so complex that they require considerable time and labour. The main topics dealt with under capital management are cost of capital, rate of return and selection of projects.

Important Concepts/Principles of Managerial Economics

There are six basic principles of managerial economics. They are:

1. The Incremental Concept

2. The Concept of Time Perspective

3. The Opportunity Cost Concept

4. The Discounting Concept

5. The Equi-marginal Concept

6. Risk and Uncertainty

1. The Incremental Concept:

The incremental concept is probably the most important concept in economics and is certainly the most frequently used in Managerial Economics. Incremental concept is closely related to the marginal cost and marginal revenues of economic theory.

The two major concepts in this analysis are incremental cost and incremental revenue. Incremental cost denotes change in total cost, whereas incremental revenue means change in total revenue resulting from a decision of the firm.

The incremental principle may be stated as follows:

A decision is clearly a profitable one if

(i) It increases revenue more than costs.

(ii) It decreases some cost to a greater extent than it increases others.

(iii) It increases some revenues more than it decreases others.

(iv) It reduces costs more than revenues.

2. Concept of Time Perspective:

The time perspective concept states that the decision maker must give due consideration both to the short run and long run effects of his decisions. The economic concepts of the long run and the short run have become part of everyday language. Managerial economists are also concerned with the short run and long run effects of decisions on revenues as well as costs. The main problem in decision making is to establish the right balance between long run and short run.

In the short period, the firm can change its output without changing its size. In the long period, the firm can change its output by changing its size. In the short period, the output of the industry is fixed because the firms cannot change their size of operation and they can vary only variable factors. In the long period, the output of the industry is likely to be more because the firms have enough time to increase their sizes and also use both variable and fixed factors.

3. The Opportunity Cost Concept:

Both micro and macro economics make abundant use of the fundamental concept of opportunity cost. In everyday life, we apply the notion of opportunity cost even if we are unable to articulate its significance. In Managerial Economics, the opportunity cost concept is useful in decision involving a choice between different alternative courses of action.

Opportunity cost of a decision is the sacrifice of alternatives required by that decision. Sacrifice of alternatives is involved when carrying out a decision requires using a resource that is limited in

supply with the firm. Opportunity cost, therefore, represents the benefits or revenue forgone by pursuing one course of action rather than another.

The concept of opportunity cost implies three things:

1. The calculation of opportunity cost involves the measurement of sacrifices.

2. Sacrifices may be monetary or real.

3. The opportunity cost is termed as the cost of sacrificed alternatives.

Opportunity cost is just a notional idea which does not appear in the books of account of the company. If resource has no alternative use, then its opportunity cost is nil.

4. Equi-Marginal Concept:

One of the widest known principles of economics is the equi-marginal principle. The principle states that an input should be allocated so that value added by the last unit is the same in all cases. This generalisation is popularly called the equi-marginal.

An optimum allocation cannot be achieved if the value of the marginal product is greater in one activity than in another. It would be, therefore, profitable to shift labour from low marginal value activity to high marginal value activity, thus increasing the total value of all products taken together.

5. Discounting Concept:

This concept is an extension of the concept of time perspective. Since future is unknown and incalculable, there is lot of risk and uncertainty in future. Everyone knows that a rupee today is worth more than a rupee will be two years from now. This appears similar to the saying that "a bird in hand is more worth than two in the bush." This judgment is made not on account of the uncertainty surrounding the future or the risk of inflation.

It is simply that in the intervening period a sum of money can earn a return which is ruled out if the same sum is available only at the end of the period. In technical parlance, it is said that the present value of one rupee available at the end of two years is the present value of one rupee available today. The mathematical technique for adjusting for the time value of money and computing present value is called 'discounting'.

The concept of discounting is found most useful in managerial economics in decision problems pertaining to investment planning or capital budgeting.

6. Risk and Uncertainty:

Managerial decisions are actions of today which bear fruits in future which is unforeseen. Future is uncertain and involves risk. The uncertainty is due to unpredictable changes in the business cycle, structure of the economy and government policies.

This means that the management must assume the risk of making decisions for their institution in uncertain and unknown economic conditions in the future. Firms may be uncertain about production, market prices, strategies of rivals, etc. Under uncertainty, the consequences of an action are not known immediately for certain. Uncertainty arises because producers simply cannot foresee the dynamic changes in the economy and hence, cost and revenue data of their firms with reasonable accuracy.

5 Basic Problems of an Economy

Problem # 1. What to Produce and in What Quantities?

The first central problem of an economy is to decide what goods and services are to be produced and in what quantities. This involves allocation of scarce resources in relation to the composition of total output in the economy. Since resources are scarce, the society has to decide about the goods to be produced: wheat, cloth, roads, television, power, buildings, and so on.

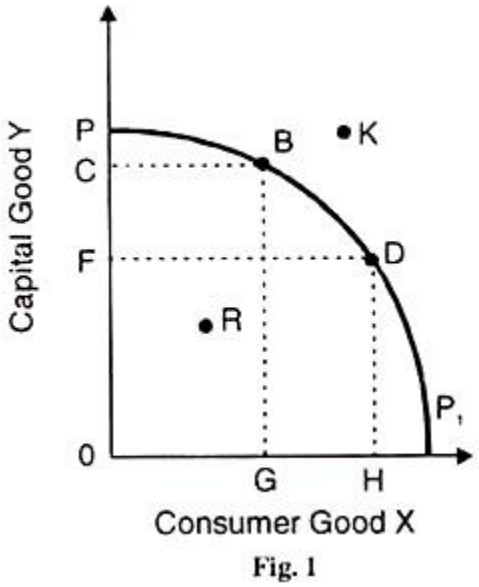


Fig. 1

This problem can also be explained with the help of the production possibility curve as shown in Figure 1.

Suppose the economy produces capital goods and consumer goods. In deciding the total output of the economy, the society has to choose that combination of capital goods and consumer goods which is in keeping with its resources.

It cannot choose the combination R which is inside the production possibility curve PP_1 because it reflects economic inefficiency of the system in the form of unemployment of resources. Nor can it choose the combination R which is outside the current production possibilities of the society. The society lacks the resources to produce this combination of capital goods and consumer goods.

It will, therefore, have to choose among the combinations B, E, or D which give the highest level of satisfaction. If the society decides to have more capital goods, it will choose combination B; and if it wants more consumer goods, it will choose combination D.

Problem # 2. How to Produce these Goods?

The next basic problem of an economy is to decide about the techniques or methods to be used in order to produce the required goods. This problem is primarily dependent upon the availability of resources within the economy.

If land is available in abundance, it may have extensive cultivation. If land is scarce, intensive methods of cultivation may be used. If labour is in abundance, it may use labour-intensive techniques; while in the case of labour shortage, capital-intensive techniques may be used.

The technique to be used also depends upon the type and quantity of goods to be produced. For producing capital goods and large outputs, complicated and expensive machines and techniques are required. On the other hand, simple consumer goods and small outputs require small and less expensive machines and comparatively simple techniques.

Further, it has to be decided what goods and services are to be produced in the public sector and what goods and services in the private sector. But in choosing between different methods of production, those methods should be adopted which bring about an efficient allocation of resources and increase the overall productivity in the economy.

Suppose the economy is producing certain quantities of consumer and capital goods at point A on PP curve in Figure 2. y adopting new techniques of production, given the supplies of factors, the productive efficiency of the economy increases. As a result, the PP_0 curve shifts outwards to P_1P_1.

It leads to the production of more quantities of consumer and capital gods from point A on PP_0 curve to point C of PP with be the new production possibility curve and the economy will move from point A to B where more of both the goods are produced.

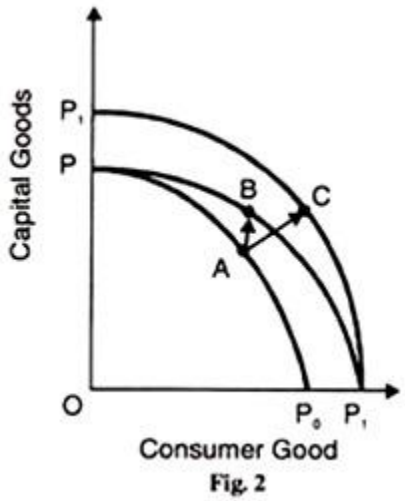


Fig. 2

Problem # 3. For whom is the Goods Produced?

The third basic problem to be decided is the allocation of goods among the members of the society. The allocation of basic consumer goods or necessities and luxuries comforts and among the household takes place on the basis of among the distribution of national income.

Whosoever possesses the means to buy the goods may have then. A rich person may have a large share of the luxuries goods, and a poor person may have more quantities of the basic consumer goods he needs. This problem is illustrated in Figure 3 where the production possibility curve PP shows the combinations of luxuries and necessaries.

At point B on the PP curve, the economy is producing more of luxuries OC for the rich and less of necessaries OC for the at whereas at point D more of necessaries OH are being produced for the poor and less of luxuries OF for the rich.

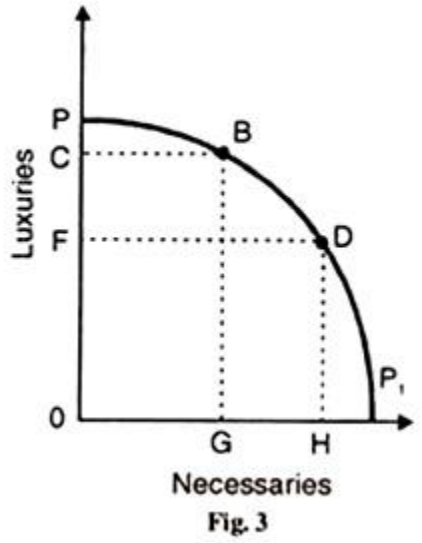


Fig. 3

Problem # 4. How Efficiently are the Resources being Utilised?

This is one of the important basic problems of an economy because having made the three earlier decisions, the society has to see whether the resources it owns are being utilised fully or not. In case the resources of the economy are lying idle, it has to find out ways and means to utilise them fully.

If the idleness of resources, say manpower, land or capital, is due to their male allocation, the society will have to adopt such monetary, fiscal, or physical measures whereby this is corrected. This is illustrated in Figure 4 where the production possibility curve PP reflects idle resources within the economy at point A, while the production possibility curve P_1P_1 reflects the full utilisation of the resources at point B or C.

It is for the society to decide whether to produce more capital goods at point B or more consumer goods at point *C,* or both at point D at the level of full employment represented by the In an

economy where the available resources are being fully utilised, it is characterised by technical efficiency or full employment.

To maintain it at this level, the economy must always be increasing the output of some goods and services by giving up something of others.

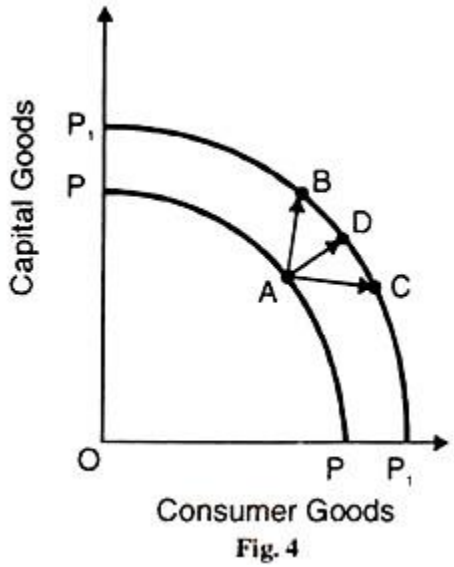


Fig. 4

Problem # 5. Is the Economy Growing?

The last and the most important problem is to find out whether the economy is growing through time or is it stagnant. If the economy is stagnant at any point inside the production possibility curve, says in Figure 5, it has to be moved on to the production possibility curve PP whereby the economy now produces larger quantities of consumer goods and capital goods.

Economic growth takes place through a higher rate of capital formation which consists of replacing existing capital goods with new and more productive ones by adopting more efficient production techniques or through innovations.

This leads to the outward shifting of the production possibility curve from PP to P_1P_1; (in Figure 5). The economy moves, say after 5 years, from point A to B or C or D on the P_1P_1 curve. Point C represents the situation where larger quantities of both consumer and capital goods are produced in the economy. Economic growth enables the economy to have more of both the goods.

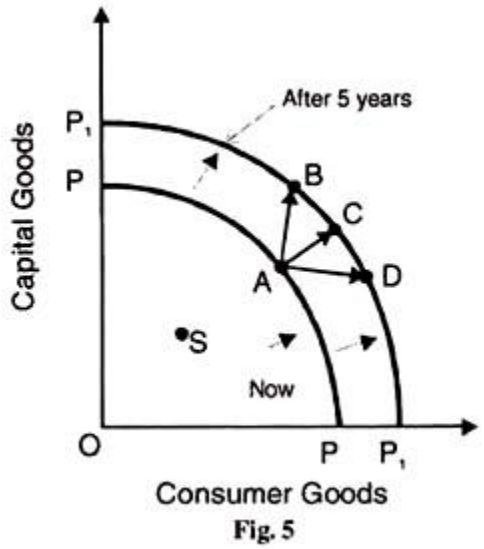


Fig. 5

Relationship between Micro and Macro Economics

Microeconomic*s* ; Microeconomics is the study of economics in a miniature scale. It breaks down the economy into attributes and analyzes each specific component. Key features are to explore the possibilities of lowering production costs and increasing income.

Microeconomics is the study of particular markets, and segments of the economy. It looks at issues such as consumer behaviour, individual labour markets, and the theory of firms.

Macroeconomics ; Macroeconomics is the study of the economy as a whole. The economy's actions are looked at together. It reflects on the governmental aspect of the economy, regarding tax and regulation actions they address.

Macro economics is the study of the whole economy. It looks at 'aggregate' variables, such as aggregate demand, national output and inflation.

The Relationship Between Microeconomics and Macroeconomics

Microeconomicsis the study of the decision-making process of individuals.

Macroeconomicsis the study of aggregate decision making.

The players in the economy include households, businesses, government, and foreign trade.

Nominal variablesare measured in terms of actual dollar values.

Real variablesare measured in terms of physical goods and services.

Micro economics is concerned with:

- Supply and demand in individual markets
- Individual consumer behaviour. e.g. Consumer choice theory
- Individual labour markets – e.g. demand for labour, wage determination
- Externalities arising from production and consumption. e.g. Externalities

Macro economics is concerned with

- Monetary / fiscal policy. e.g. what effect does interest rates have on the whole economy?
- Reasons for inflation and unemployment.
- Economic growth
- International trade and globalisation
- Reasons for differences in living standards and economic growth between countries.
- Government borrowing

Parameter	Micro Economics	Macro Economics
Economic Unit	It is the study of **individual economic units** of an economy	It is the study of economy as a **whole and its aggregates.**
Scope	It deals with individual income, individual prices and individual output, etc.	It deals with aggregates like national income, general price level and national output, etc.
Central Problem	Its **Central problem** is price determination and allocation of resources	Its **central problem** is determination of level of income and employment.
Main Tools	Its main tools are demand and suply of a particular commodity/factor.	Its main tools are aggregate demand and aggregate supply of economy as a whole.
Use	It helps to solve the central problem of what, how and for whom to produce in the economy	It helps to solve the central problem of full employment of resources in the economy.
Equilibrium Analysis	It discusses how equilibrium of a consumer, a producer or an industry is attained.	It is concerned with the determination of equilibrium level of income and employment of the economy
Determinants	Price is the main determinant of microeconomic problems	Price is the main determinant of microeconomic problems
Limitation	It is based on unrealistic assumptions, i.e. In microeconomics it is assumed that there is a full employment in the society which is not at all possible.	It has been analyzed that 'Fallacy of Composition' involves, which sometimes doesn't proves true because it is possible that what is true for aggregate may not be true for individuals too.
Approach	While analyzing any economy, microeconomics takes a bottom-up approach.	The macroeconomics takes a top-down approach into the consideration.
Examples	Examples are: individual income, individual savings, price determination of a commodity, individual firm's output, consumer's equilibrium	Examples are: National income, national savings, general price level, aggregate demand, aggregate supply, poverty, unemployment etc.

Similarities between microeconomics and macroeconomics

Although it is convenient to split up economics into two branches – microeconomics and macroeconomics, it is to some extent an artificial divide.

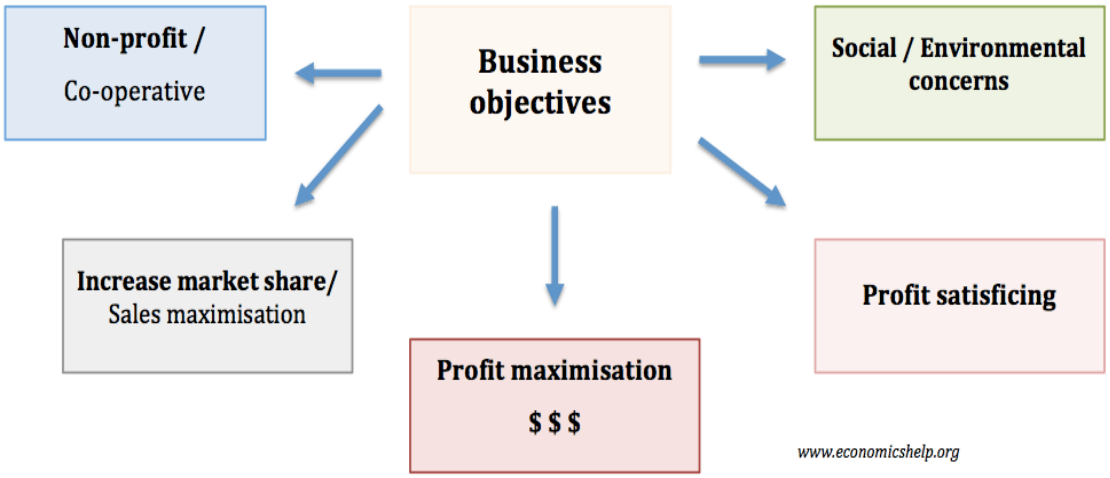
1. Micro principles are used in macro economics. If you study the impact of devaluation, you are likely to use same economic principles, such as the elasticity of demand to changes in price.
2. Micro effects macro economics and vice versa. If we see a rise in oil prices, this will have a significant impact on cost-push inflation. If technology reduces costs, this enables faster economic growth.
3. Blurring of distinction. If house prices rise, this is a micro economic effect for the housing market. But, the housing market is so influential that it could also be considered a macro-economic variable, and will influence monetary policy.
4. There have been efforts to use computer models of household behaviour to predict the impact on the macro economy.

Economic objectives of firms

The main objectives of firms are:

1. Profit maximisation
2. Sales maximisation
3. Increased market share/market dominance
4. Social/environmental concerns
5. Profit satisficing
6. Co-operatives/

Sometimes there is an overlap of objectives. For example, seeking to increase market share, may lead to lower profits in the short-term, but enable profit maximisation in the long run.



1.Profit maximisation

Usually, in economics, we assume firms are concerned with maximising profit. Higher profit means:

- Higher dividends for shareholders.
- More profit can be used to finance research and development.
- Higher profit makes the firm less vulnerable to takeover.
- Higher profit enables higher salaries for workers

2. Sales maximisation

Firms often seek to increase their market share – even if it means less profit. This could occur for various reasons:

- Increased market share increases monopoly power and may enable the firm to put up prices and make more profit in the long run.

- Managers prefer to work for bigger companies as it leads to greater prestige and higher salaries.
- Increasing market share may force rivals out of business. E.g. the growth of supermarkets have lead to the demise of many local shops. Some firms may actually engage in predatory pricing which involves making a loss to force a rival out of business.

3. Growth maximization ***(*** Increased market share/market dominance)

This is similar to sales maximisation and may involve mergers and takeovers. With this objective, the firm may be willing to make lower levels of profit in order to increase in size and gain more market share. More market share increases their monopoly power and ability to be a price setter.

4. Long run profit maximisation

In some cases, firms may sacrifice profits in the short term to increase profits in the long run. For example, by investing heavily in new capacity, firms may make a loss in the short run but enable higher profits in the future.

5. Social/environmental concerns

A firm may incur extra expense to choose products which don't harm the environment or products not tested on animals. Alternatively, firms may be concerned about local community / charitable concerns.

- Some firms may adopt social/environmental concerns as part of its branding. This can ultimately help profitability as the brand becomes more attractive to consumers.
- Some firms may adopt social/environmental concerns on principal alone – even if it does little to improve sales/brand image.

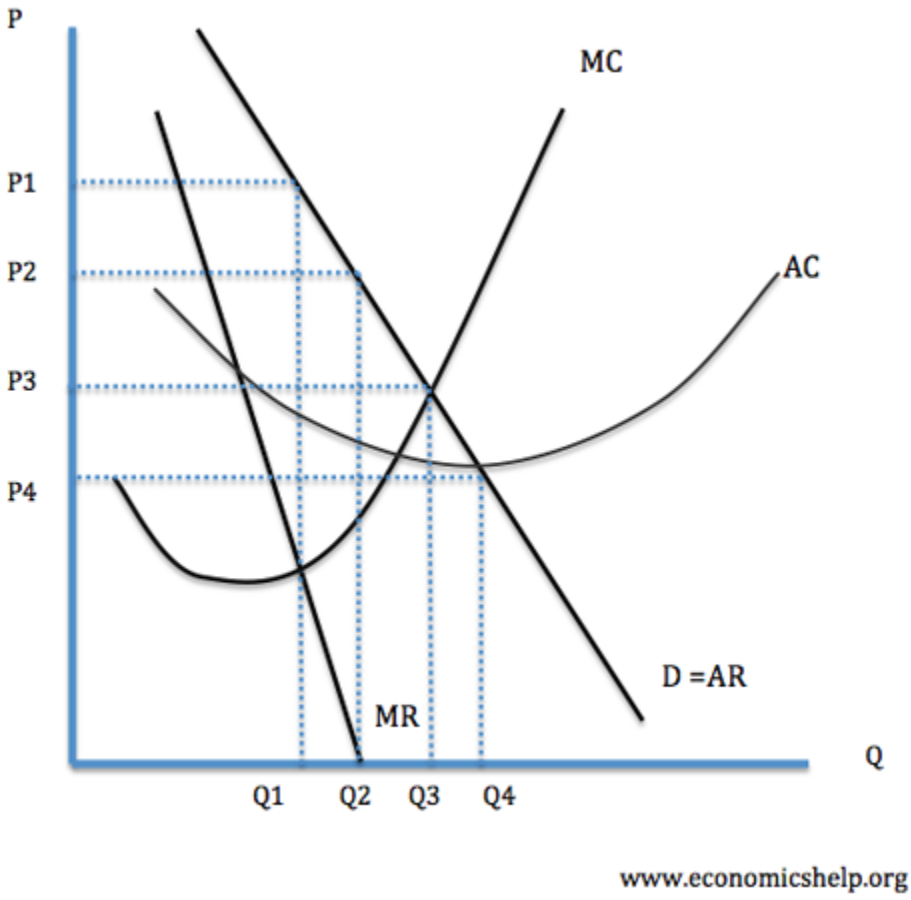
6. Profit Satisficing

- In many firms, there is a separation of ownership and control. Those who own the company (shareholders) often do not get involved in the day to day running of the company.
- This is a problem because although the owners may want to maximise profits, the managers have much less incentive to maximise profits because they do not get the same rewards, (share dividends)

6. Co-operatives

Co-operatives may have completely different objectives to a typical PLC. A co-operative is run to maximise the welfare of all stakeholders – especially workers. Any profit the co-operative makes will be shared amongst all members.

Diagram showing different objectives of firms



- Q1 = Profit maximisation (MR=MC)
- Q2 = Revenue Maximisation (MR=0)
- Q3 = Marginal cost pricing (P=MC) – allocative efficiency
- Q4 = Sales maximisation – maximum sales while still making normal profit (AR=ATC)

UNIT-II

Demand analysis

Definition: The **Demand Analysis** is a process whereby the management makes decisions with respect to the production, cost allocation, advertising, inventory holding, pricing, etc. Although, how much a firm produces depends on its production capacity but how much it must endeavor to produce depends on the potential demand for its product.

Demand analysis is a research done to estimate or find out the customer demand for a product or service in a particular market. Demand analysis is one of the important consideration for a variety of business decisions like determining sales forecasting, pricing products/services, marketing and advertisement spending, manufacturing decisions, expansion planning etc. Demand analysis covers both future and retrospective analysis so that they can analyse the demand better and understand the product/service's past success and failure too.

Demand: Demand means the ability and willingness to buy a specific quantity of a commodity at the prevailing price in a given period of time. Therefore, demand for a commodity implies the desire to acquire it, willingness and the ability to pay for it.

Demand may be defined as the quantity of goods or services desired by an individual, backed by the ability and willingness to pay.

Features/Characteristics of Demand

The following are the main features or characteristics of demand that the marketer must keep in mind while analyzing the demand for its product:

- The demand is the **specific quantity** that a consumer is willing to purchase. Thus, it is expressed in **numbers**.
- The demand must mean the **demand per unit of time**, per month, per week, per day.
- The demand is always **at a price,** e. any change in the price of a commodity will bring about a certain change in its quantity demanded.
- The demand is always in a **market**, a place where a set of buyers and sellers meet. The market needs not to be a geographical area.

Determinants Of Demand:

There are various factors affecting the demand for a commodity. They are:

1.Price of the good: The price of a commodity is an important determinant of demand. Price and demand are inversely related. Higher the price less is the demand and vice versa.

2.Price of related goods: The price of related goods like substitutes and complementary goods also affect the demand. In the case of substitutes, rise in price of one commodity lead to increase in demand for its substitute.

In the case of complementary goods, fall in the price of one commodity lead to rise in demand for both the goods.

3.Consumer's Income: This is directly related to demand. A change in the income of the consumer significantly influences his demand for most commodities. If the disposable income increases, demand will be more. 4.Taste, preference, fashions and habits: These are very effective factors affecting demand for a commodity. When there is a change in taste, habits or preferences of the consumer, his demand will change. Fashions and customs in society determine many of our demands.

5.Population: If the size of the population is more, demand for goods will be more . The market demand for a commodity substantially changes when there is change in the total population.

6.Money Circulation: More the money in circulation, higher the demand and vice versa.

7.Value of money: The value of money determines the demand for a commodity in the market. When there is a rise or fall in the value of money there may be changes in the relative prices of different goods and their demand.

8.Weather Condition: Weather is also an important factor that determines the demand for certain goods.

9.Advertisement and Salesmanship: If the advertisement is very attractive for a commodity, demand will be more. Similarly if the salesmanship and publicity is effective then the demand for the commodity will be more.

10.Consumer's future price expectation: If the consumers expect that there will be a rise in prices in future, he may buy more at the present price and so his demand increases.

11.Government policy (taxation): High taxes will increase the price and reduce demand, while low taxes will reduce the price and extend the demand.

12.Credit facilities: Depending on the availability of credit facilities the demand for commodities will change. More the facilities higher the demand.

13.Multiplicity of uses of goods: if the commodity has multiple uses then the demand will be more than if the commodity is used for a single purpose.

Types Of Demand:

1.Direct and indirect demand: (or) Producers' goods and consumers' goods: demand for goods that are directly used for consumption by the ultimate consumer is known as direct demand (example: Demand for T shirts). On the other hand demand for goods that are used by producers for producing goods and services. (example: Demand for cotton by a textile mill)

2.Derived demand and autonomous demand: when a produce derives its usage from the use of some primary product it is known as derived demand. (example: demand for tyres derived from demand for car) Autonomous demand is the demand for a product that can be independently used. (example: demand for a washing machine)

3.Durable and non durable goods demand: durable goods are those that can be used more than once, over a period of time (example: Microwave oven) Non durable goods can be used only once (example: Band-aid)

4.Firm and industry demand: firm demand is the demand for the product of a particular firm. (example: Dove soap) The demand for the product of a particular industry is industry demand (example: demand for steel in India)

5.Total market and market segment demand: a particular segment of the markets demand is called as segment demand (example: demand for laptops by engineering students) the sum total of the demand for laptops by various segments in India is the total market demand. (example: demand for laptops in India)

6.Short run and long run demand: short run demand refers to demand with its immediate reaction to price changes and income fluctuations. Long run demand is that which will ultimately exist as a result of the changes in pricing, promotion or product improvement after market adjustment with sufficient time.

7.Joint demand and Composite demand: when two goods are demanded in conjunction with one another at the same time to satisfy a single want, it is called as joint or complementary demand. (example: demand for petrol and two wheelers) A composite demand is one in which a good is wanted for several different uses. (example: demand for iron rods for various purposes)

8.Price demand, income demand and cross demand: demand for commodities by the consumers at alternative prices are called as price demand. Quantity demanded by the consumers at alternative levels of income is income demand. Cross demand refers to the quantity demanded of commodity 'X' at a price of a related commodity 'Y' which may be a substitute or complementary to X.

Price Demand: The ability and willingness to buy specific quantities of a good at the prevailing price in a given time period.

Income Demand: The ability and willingness to buy a commodity at the available income in a given period of time.

Market Demand: The total quantity of a good or service that people are willing and able to buy at prevailing prices in a given time period. It is the sum of individual demands.

Cross Demand: The ability and willingness to buy a commodity or service at the prevailing price of the related commodity i.e. substitutes or complementary products. For example, people

What is the Law of Demand?

Law of demand: The quantity of a commodity demanded in a given time period increases as its price falls, ceteris paribus. (I.e. other things remaining constant)

Law of Demand:

The law of demand expresses a relationship between the quantity demanded and its price. It may be defined in Marshall's words as **"the amount demanded increases with a fall in price, and diminishes with a rise in price".** Thus it expresses an inverse relation between price and demand. The law refers to the direction in which quantity demanded changes with a change in price.

Assumptions of the Law of Demand:

These assumptions are:

(i) There is no change in the tastes and preferences of the consumer;

(ii) The income of the consumer remains constant;

(iii) There is no change in customs;

(iv) The commodity to be used should not confer distinction on the consumer;

(v) There should not be any substitutes of the commodity;

(vi) There should not be any change in the prices of other products;

(vii) There should not be any possibility of change in the price of the product being used;

(viii) There should not be any change in the quality of the product; and

(ix) The habits of the consumers should remain unchanged. Given these conditions, the law of demand operates. If there is change even in one of these conditions, it will stop operating.

Given these assumptions, the law of demand is explained in terms of Table 3 and Figure 7.

Table 3.
Demand Schedule

Price (Rs)	Quantity Demanded
5	100 Units
4	200 Units
3	300 Units
2	400 Units
1	600 Units

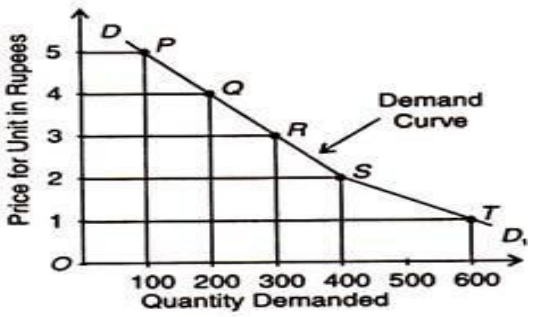


Fig. 7

The above table shows that when the price of say, orange, is Rs. 5 per unit, 100 units are demanded. If the price falls to Rs.4, the demand increases to 200 units. Similarly, when the price declines to Re.1, the demand increases to 600 units. On the contrary, as the price increases from Re. 1, the demand continues to decline from 600 units.

In the figure, point P of the demand curve DD_1 shows demand for 100 units at the Rs. 5. As the price falls to Rs. 4, Rs. 3, Rs. 2 and Re. 1, the demand rises to 200, 300, 400 and 600 units respectively. This is clear from points Q, R, S, and T. Thus, the demand curve DD_1 shows increase in demand of orange when its price falls. This indicates the inverse relation between price and demand.

Exceptions to the Law of Demand:

In certain cases, the demand curve slopes up from left to right, i.e., it has a positive slope. Under certain circumstances, consumers buy more when the price of a commodity rises, and less when price falls, as shown by the D curve in Figure 8. Many causes are attributed to an upward sloping demand curve.

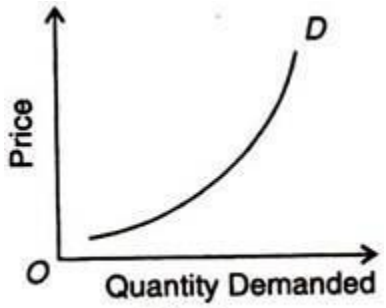


Fig. 8

(i) War:

If shortage is feared in anticipation of war, people may start buying for building stocks or for hoarding even when the price rises.

(ii) Depression:

During a depression, the prices of commodities are very low and the demand for them is also less. This is because of the lack of purchasing power with consumers.

(iii) Giffen Paradox:

If a commodity happens to be a necessity of life like wheat and its price goes up, consumers are forced to curtail the consumption of more expensive foods like meat and fish, and wheat being still the cheapest food they will consume more of it. The Marshallian example is applicable to developed economies.

In the case of an underdeveloped economy, with the fall in the price of an inferior commodity like maize, consumers will start consuming more of the superior commodity like wheat. As a result, the demand for maize will fall. This is what Marshall called the Giffen Paradox which makes the demand curve to have a positive slope.

(iv) Demonstration Effect:

If consumers are affected by the principle of conspicuous consumption or demonstration effect, they will like to buy more of those commodities which confer distinction on the possessor, when their prices rise. On the other hand, with the fall in the prices of such articles, their demand falls, as is the case with diamonds.

(v) Ignorance Effect:

Consumers buy more at a higher price under the influence of the "ignorance effect", where a commodity may be mistaken for some other commodity, due to deceptive packing, label, etc.

(vi) Speculation:

Marshall mentions speculation as one of the important exceptions to the downward sloping demand curve. According to him, the law of demand does not apply to the demand in a campaign between groups of speculators. When a group unloads a great quantity of a thing on to the market, the price falls and the other group begins buying it. When it has raised the price of the thing, it arranges to sell a great deal quietly. Thus when price rises, demand also increases.

(vii) Necessities of Life:

Normally, the law of demand does not apply on necessities of life such as food, cloth etc. Even the price of these goods increases, the consumer does not reduce their demand. Rather, he purchases them even the prices of these goods increase often by reducing the demand for comfortable goods. This is also a reason that the demand curve slopes upwards to the right.

(viii) Seasonal Goods:

Goods which are not used during the off-season (seasonal goods) will also be subject to similar demand behaviour.

(ix) Goods In Short Supply:

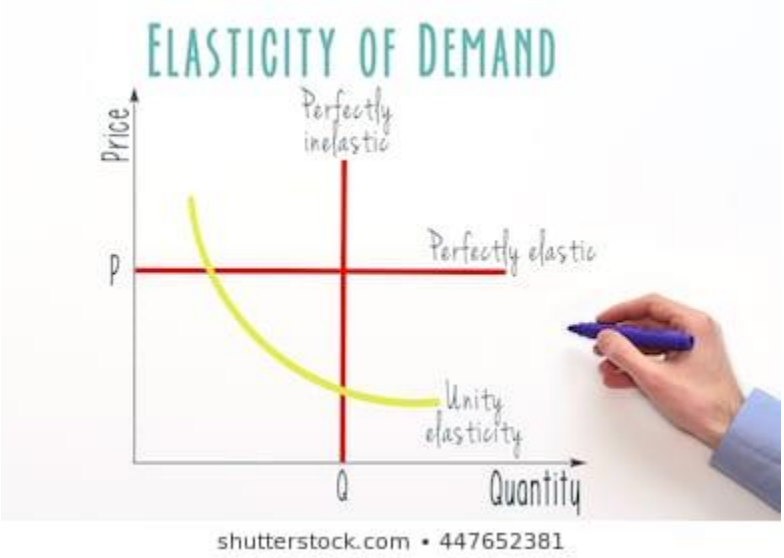
Goods that are available in limited quantity or whose future availability is uncertain also violate the law of demand.

Demand schedule: a table showing the quantities of a good that a consumer is willing and able to buy at the prevailing price in a given time period. (Table – 1)

Law Of Demand And Elasticity Of Demand

Now that we are familiar with the concept of demand and the determinants of demand, let us study about another important concept – the elasticity of demand. We will be studying the meaning and the types of demand elasticity. Let's get started.

Elasticity of Demand



(Source: ShutterStock)

The elasticity of demand is an economic term. It refers to demand sensitivity. In other words, it helps to understand how the demand for good changes is when there are changes in other economic variables. These economic variables include factors such as prices and consumer income.

Demand elasticity is calculated as the percent change in the quantity demanded divided by a percent change in another economic variable. A higher value for the demand elasticity with respect to an economic variable means that consumers are more sensitive to changes in this variable.

The elasticity of demand = (% Change in demanded quantity)/(% Change in another economic variable)

Types of Demand Elasticity

Let us take a look at the types of demand elasticity. There are broadly three types of demand elasticity.

1] Price Elasticity of Demand

This refers to the change or sensitivity in the customer's demand for the quantity of a good with respect to a change in its price. Companies often collect this data on the consumer response to price changes. This helps them adjust the price to maximize profits.

2] Income Elasticity of Demand

This is the responsiveness of demand for a product with respect to the change in income. So it will help measure the increase or decrease in demand when the income of the consumer increases or decreases.

3] Cross Elasticity of Demand

This value is calculated by using the percent change in demanded quantity for a good and dividing it by the percent change in the price of some other good. Moreover, this indicates the consumer reaction to demand a particular good in accordance with price changes of other goods.

Demand elasticity is generally measured in absolute terms. This implies the sign of the variable is ignored. If the value is greater than 1, it is elastic. Furthermore, this implies demand is responsive to economic changes (like price). If the value is less than 1 is inelastic.

This further implies demand does not show change according to economic changes such as price. Demand is unit elastic when its value is equal to 1. This implies the value of demand moves proportionately with economic changes.

Law of Demand

Economists use the term demand as a reference to the quantity of a good or service that a consumer is willing and has the ability to purchase at a price. Demand is based on needs and the ability to pay. Ability to pay is important as in its absence the demand becomes ineffective.

The law of demand states that if all other factors remain constant, then the price and the demanded quantity of any good and service are inversely related to one another. This implies that if the price of an article increases then its corresponding demand decreases. Similarly, if the price of an article decreases then its demand should increase accordingly.

The price of the good and its price are plotted to form the demand curve. The demand quantity at a particular price can be calculated from the demand curve. This price and value relation is represented in a table known as the demand schedule.

Elasticity of Demand

A change in the price of a commodity affects its demand. We can find the elasticity of demand, or the degree of responsiveness of demand by comparing the percentage price changes with the quantities demanded. In this article, we will look at the concept of elasticity of demand and take a quick look at its various types.

Elasticity of Demand

"Elasticity of demand is the responsiveness of the quantity demanded of a commodity to changes in one of the variables on which demand depends. In other words, it is the percentage change in quantity demanded divided by the percentage in one of the variables on which demand depends."

The variables on which demand can depend on are:

- Price of the commodity
- Prices of related commodities
- Consumer's income, etc.

Types of Elasticity of Demand

Based on the variable that affects the demand, the elasticity of demand is of the following types. One point to note is that unless otherwise mentioned, whenever the elasticity of demand is mentioned, it implies price elasticity.

Price Elasticity

The price elasticity of demand is the response of the quantity demanded to change in the price of a commodity. It is assumed that the consumer's income, tastes, and prices of all other goods are steady. It is measured as a percentage change in the quantity demanded divided by the percentage change in price. Therefore,

Price Elasticity=*Ep*=Percentage change in quantity demandedPercentage change in price or

Ep=Change in Quantity×100Original QuantityChange in Price×100Original Price

=Change in QuantityOriginal Quantity×Original PriceChange in Price

Income Elasticity

The income elasticity of demand is the degree of responsiveness of the quantity demanded to a change in the consumer's income. Symbolically,

EI=Percentage change in quantity demandedPercentage change in income

Cross Elasticity

The cross elasticity of demand of a commodity X for another commodity Y, is the change in demand of commodity X due to a change in the price of commodity Y. Symbolically,

$Ec=\Delta qx\Delta py\times pyqx$

Where,

Ec

is the cross elasticity,

Δqx

is the original demand of commodity X,

Δqx

is the change in demand of X,

Δpy

is the original price of commodity Y, and

Δpy

is the change in price of Y.

Demand Forecasting

Demand forecasting is a combination of two words; the first one is Demand and another forecasting. Demand means outside requirements of a product or service. In general, forecasting means making an estimation in the present for a future occurring event. Here we are going to discuss demand forecasting and its usefulness.

Demand Forecasting

It is a technique for estimation of probable demand for a product or services in the future. It is based on the analysis of past demand for that product or service in the present market condition. Demand forecasting should be done on a scientific basis and facts and events related to forecasting should be considered.

Therefore, in simple words, we can say that after gathering information about various aspect of the market and demand based on the past, an attempt may be made to estimate future demand. This concept is called forecasting of demand.

For example, suppose we sold 200, 250, 300 units of product X in the month of January, February, and March respectively. Now we can say that there will be a demand for 250 units approx. of product X in the month of April, if the market condition remains the same.

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

In the words of Cundiff and Still, "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."

The objectives of demand forecasting

The objectives of demand forecasting are divided into short and long-term objectives, which are shown in Figure-1:

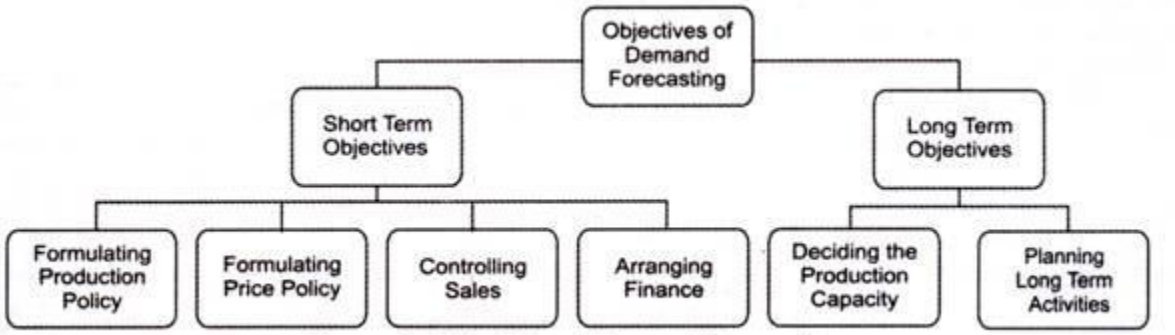


Figure-1: Objectives of Demand Forecasting

The objectives of demand forecasting (as shown in Figure-1) are discussed as follows:

i. Short-term Objectives:

Include the following:

a. Formulating production policy:

Helps in covering the gap between the demand and supply of the product. The demand forecasting helps in estimating the requirement of raw material in future, so that the regular supply of raw material can be maintained. It further helps in maximum utilization of resources as operations are planned according to forecasts. Similarly, human resource requirements are easily met with the help of demand forecasting.

b. Formulating price policy:

Refers to one of the most important objectives of demand forecasting. An organization sets prices of its products according to their demand. For example, if an economy enters into depression or

recession phase, the demand for products falls. In such a case, the organization sets low prices of its products.

c. Controlling sales:

Helps in setting sales targets, which act as a basis for evaluating sales performance. An organization make demand forecasts for different regions and fix sales targets for each region accordingly.

d. Arranging finance:

Implies that the financial requirements of the enterprise are estimated with the help of demand forecasting. This helps in ensuring proper liquidity within the organization.

ii. Long-term Objectives:

Include the following:

a. Deciding the production capacity:

Implies that with the help of demand forecasting, an organization can determine the size of the plant required for production. The size of the plant should conform to the sales requirement of the organization.

b. Planning long-term activities:

Implies that demand forecasting helps in planning for long term. For example, if the forecasted demand for the organization's products is high, then it may plan to invest in various expansion and development projects in the long term.

Factors Influencing Demand Forecasting:

Demand forecasting is a proactive process that helps in determining what products are needed where, when, and in what quantities. There are a number of factors that affect demand forecasting.

Some of the factors that influence demand forecasting are shown in Figure-2:

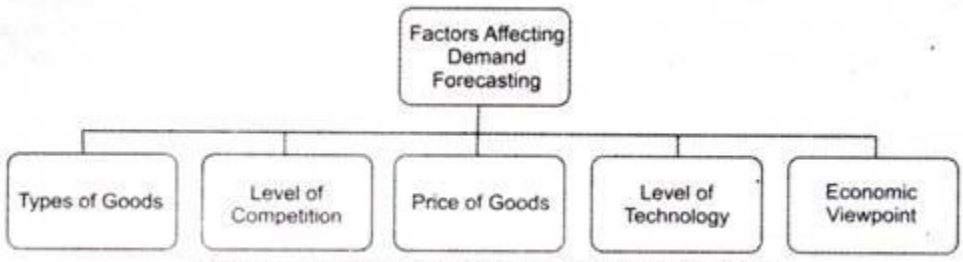


Figure-2: Factors Affecting Demand Forecasting

The various factors that influence demand forecasting ("as shown in Figure-2) are explained as follows:

i. Types of Goods:

Affect the demand forecasting process to a larger extent. Goods can be producer's goods, consumer goods, or services. Apart from this, goods can be established and new goods. Established goods are those goods which already exist in the market, whereas new goods are those which are yet to be introduced in the market.

Information regarding the demand, substitutes and level of competition of goods is known only in case of established goods. On the other hand, it is difficult to forecast demand for the new goods. Therefore, forecasting is different for different types of goods.

ii. Competition Level:

Influence the process of demand forecasting. In a highly competitive market, demand for products also depend on the number of competitors existing in the market. Moreover, in a highly competitive market, there is always a risk of new entrants. In such a case, demand forecasting becomes difficult and challenging.

iii. Price of Goods:

Acts as a major factor that influences the demand forecasting process. The demand forecasts of organizations are highly affected by change in their pricing policies. In such a scenario, it is difficult to estimate the exact demand of products.

iv. Level of Technology:

Constitutes an important factor in obtaining reliable demand forecasts. If there is a rapid change in technology, the existing technology or products may become obsolete. For example, there is a high decline in the demand of floppy disks with the introduction of compact disks (CDs) and pen drives for saving data in computer. In such a case, it is difficult to forecast demand for existing products in future.

v. Economic Viewpoint:

Play a crucial role in obtaining demand forecasts. For example, if there is a positive development in an economy, such as globalization and high level of investment, the demand forecasts of organizations would also be positive.

Apart from aforementioned factors, following are some of the other important factors that influence demand forecasting:

a. Time Period of Forecasts:

Act as a crucial factor that affect demand forecasting. The accuracy of demand forecasting depends on its time period.

Forecasts can be of three types, which are explained as follows:

1. Short Period Forecasts:

Refer to the forecasts that are generally for one year and based upon the judgment of the experienced staff. Short period forecasts are important for deciding the production policy, price policy, credit policy, and distribution policy of the organization.

2. Long Period Forecasts:

Refer to the forecasts that are for a period of 5-10 years and based on scientific analysis and statistical methods. The forecasts help in deciding about the introduction of a new product, expansion of the business, or requirement of extra funds.

3. Very Long Period Forecasts:

Refer to the forecasts that are for a period of more than 10 years. These forecasts are carried to determine the growth of population, development of the economy, political situation in a country, and changes in international trade in future.

Among the aforementioned forecasts, short period forecast deals with deviation in long period forecast. Therefore, short period forecasts are more accurate than long period forecasts.

4. Level of Forecasts:

Influences demand forecasting to a larger extent. A demand forecast can be carried at three levels, namely, macro level, industry level, and firm level. At macro level, forecasts are undertaken for general economic conditions, such as industrial production and allocation of national income. At the industry level, forecasts are prepared by trade associations and based on the statistical data.

Moreover, at the industry level, forecasts deal with products whose sales are dependent on the specific policy of a particular industry. On the other hand, at the firm level, forecasts are done to estimate the demand of those products whose sales depends on the specific policy of a particular firm. A firm considers various factors, such as changes in income, consumer's tastes and preferences, technology, and competitive strategies, while forecasting demand for its products.

5. Nature of Forecasts:

Constitutes an important factor that affects demand forecasting. A forecast can be specific or general. A general forecast provides a global picture of business environment, while a specific forecast provides an insight into the business environment in which an organization operates. Generally, organizations opt for both the forecasts together because over-generalization restricts accurate estimation of demand and too specific information provides an inadequate basis for planning and execution.

Steps of Demand Forecasting:

The Demand forecasting process of an organization can be effective only when it is conducted systematically and scientifically.

It involves a number of steps, which are shown in Figure-3:

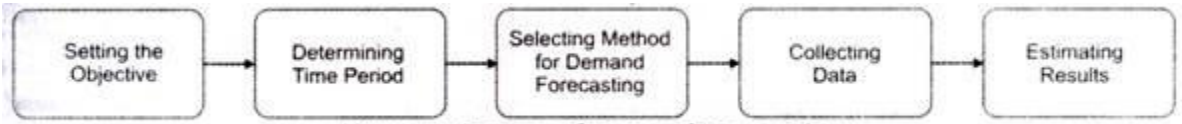


Figure-3: Process of Demand Forecasting

The steps involved in demand forecasting (as shown in Figure-3) are explained as follows:

1. Setting the Objective:

Refers to first and foremost step of the demand forecasting process. An organization needs to clearly state the purpose of demand forecasting before initiating it.

Setting objective of demand forecasting involves the following:

a. Deciding the time period of forecasting whether an organization should opt for short-term forecasting or long-term forecasting

b. Deciding whether to forecast the overall demand for a product in the market or only- for the organizations own products

c. Deciding whether to forecast the demand for the whole market or for the segment of the market

d. Deciding whether to forecast the market share of the organization

2. Determining Time Period:

Involves deciding the time perspective for demand forecasting. Demand can be forecasted for a long period or short period. In the short run, determinants of demand may not change significantly or may remain constant, whereas in the long run, there is a significant change in the determinants of demand. Therefore, an organization determines the time period on the basis of its set objectives.

3. Selecting a Method for Demand Forecasting:

Constitutes one of the most important steps of the demand forecasting process Demand can be forecasted by using various methods. The method of demand forecasting differs from organization to organization depending on the purpose of forecasting, time frame, and data requirement and its availability. Selecting the suitable method is necessary for saving time and cost and ensuring the reliability of the data.

4. Collecting Data:

Requires gathering primary or secondary data. Primary' data refers to the data that is collected by researchers through observation, interviews, and questionnaires for a particular research. On the

other hand, secondary data refers to the data that is collected in the past; but can be utilized in the present scenario/research work.

5. Estimating Results:

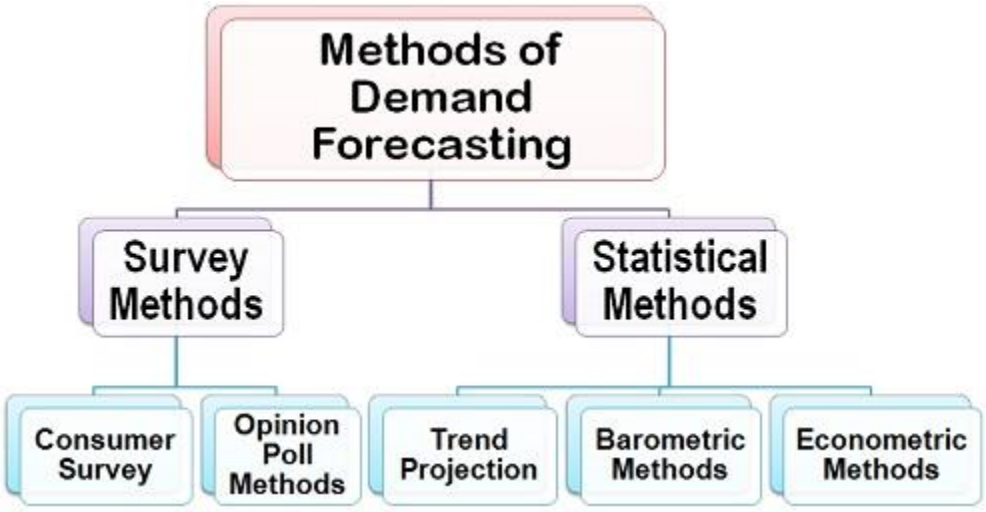
Involves making an estimate of the forecasted demand for predetermined years. The results should be easily interpreted and presented in a usable form. The results should be easy to understand by the readers or management of the organization.

Methods of Demand Forecasting

Demand forecasting is the art as well as the science of predicting the likely demand for a product or service in future. This prediction is based on the past behavior patterns and the continuing trends in the present. Hence, it is not simply guessing the future demand but is estimating the demand scientifically and objectively. Thus, there are various methods of demand forecasting which we will discuss here.

Methods of Demand Forecasting

There is no easy or simple formula to forecast the demand. Proper judgment along with the scientific formula is needed to correctly predict the future demand for a product or service. Some methods of demand forecasting are discussed below:



1] Survey of Buyer's Choice

When the demand needs to be forecasted in the short run, say a year, then the most feasible method is to ask the customers directly that what are they intending to buy in the forthcoming time period.

Thus, under this method, the potential customers are directly interviewed. This survey can be done in any of the following ways:

a. **Complete Enumeration Method:** Under this method, nearly all the potential buyers are asked about their future purchase plans.
b. **Sample Survey Method:** Under this method, a sample of potential buyers is chosen scientifically and only those chosen are interviewed.
c. **End-use Method:** It is especially used for forecasting the demand of the inputs. Under this method, the final users i.e. the consuming industries and other sectors are identified. The desirable norms of consumption of the product are fixed, the targeted output levels are estimated and these norms are applied to forecast the future demand of the inputs.

Hence, it can be said that under this method the burden of demand forecasting is on the buyer. However, the judgments of the buyers are not completely reliable and so the seller should take decisions in the light of his judgment also.

The customer may misjudge their demands and may also change their decisions in the future which in turn may mislead the survey. This method is suitable when goods are supplied in bulk to industries but not in the case of household customers.

2] Collective Opinion Method

Under this method, the salesperson of a firm predicts the estimated future sales in their region. The individual estimates are aggregated to calculate the total estimated future sales. These estimates are reviewed in the light of factors like future changes in the selling price, product designs, changes in competition, advertisement campaigns, the purchasing power of the consumers, employment opportunities, population, etc.

The principle underlying this method is that as the salesmen are closest to the consumers they are more likely to understand the changes in their needs and demands. They can also easily find out the reasons behind the change in their tastes.

Therefore, a firm having good sales personnel can utilize their experience to predict the demands. Hence, this method is also known as Salesforce opinion or Grassroots approach method. However, this method depends on the personal opinions of the sales personnel and is not purely scientific.

3] Barometric Method

This method is based on the past demands of the product and tries to project the past into the future. The economic indicators are used to predict the future trends of the business. Based on the future trends, the demand for the product is forecasted. An index of economic indicators is formed. There are three types of economic indicators, viz. leading indicators, lagging indicators, and coincidental indicators.

The leading indicators are those that move up or down ahead of some other series. The lagging indicators are those that follow a change after some time lag. The coincidental indicators are those that move up and down simultaneously with the level of economic activities.

4] Market Experiment Method

Another one of the methods of demand forecasting is the market experiment method. Under this method, the demand is forecasted by conducting market studies and experiments on consumer behavior under actual but controlled, market conditions.

Certain determinants of demand that can be varied are changed and the experiments are done keeping other factors constant. However, this method is very expensive and time-consuming.

5] Expert Opinion Method

Usually, the market experts have explicit knowledge about the factors affecting the demand. Their opinion can help in demand forecasting. The Delphi technique, developed by Olaf Helmer is one such method.

Under this method, experts are given a series of carefully designed questionnaires and are asked to forecast the demand. They are also required to give the suitable reasons. The opinions are shared with the experts to arrive at a conclusion. This is a fast and cheap technique.

6] Statistical Methods

The statistical method is one of the important methods of demand forecasting. Statistical methods are scientific, reliable and free from biases. The major statistical methods used for demand forecasting are:

a. **Trend Projection Method:** This method is useful where the organization has sufficient amount of accumulated past data of the sales. This date is arranged chronologically to obtain a time series. Thus, the time series depicts the past trend and on the basis of it, the future market trend can be predicted. It is assumed that the past trend will continue in future. Thus, on the basis of the predicted future trend, the demand for a product or service is forecasted.
b. **Regression Analysis:** This method establishes a relationship between the dependent variable and the independent variables. In our case, the quantity demanded is the dependent variable and income, the price of goods, price of related goods, the price of substitute goods, etc. are independent variables. The regression equation is derived assuming the relationship to be linear. Regression Equation: $Y = a + bX$. Where Y is the forecasted demand for a product or service.

The main challenge to forecast demand is to select an effective technique.

There is no particular method that enables organizations to anticipate risks and uncertainties in future. Generally, there are two approaches to demand forecasting.

The first approach involves forecasting demand by collecting information regarding the buying behavior of consumers from experts or through conducting surveys. On the other hand, the second method is to forecast demand by using the past data through statistical techniques.

hus, we can say that the techniques of demand forecasting are divided into survey methods and statistical methods. The survey method is generally for short-term forecasting, whereas statistical methods are used to forecast demand in the long run.

These two approaches are shown in Figure-10:

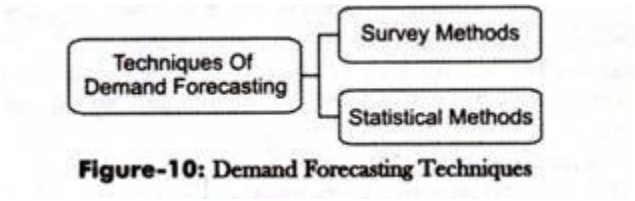


Figure-10: Demand Forecasting Techniques

Let us discuss these techniques (as shown in Figure-10).

Survey Method:

Survey method is one of the most common and direct methods of forecasting demand in the short term. This method encompasses the future purchase plans of consumers and their intentions. 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 survey method undertakes three exercises, which are shown in Figure-11:

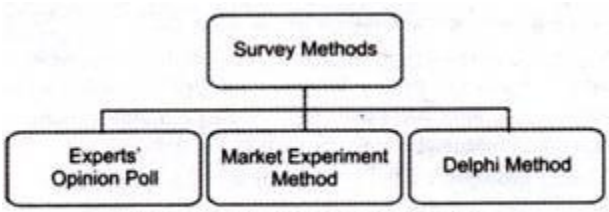


Figure-11: Survey Methods

The exercises undertaken in the survey method (as shown in Figure-11) are discussed as follows:

i. Experts' Opinion Poll:

Refers to a method in which experts are requested to provide their opinion about the product. Generally, in an organization, sales representatives act as experts who can assess the demand for the product in different areas, regions, or cities.

Sales representatives are in close touch with consumers; therefore, they are well aware of the consumers' future purchase plans, their reactions to market change, and their perceptions for other competing products. They provide an approximate estimate of the demand for the organization's products. This method is quite simple and less expensive.

However, it has its own limitations, which are discussed as follows:

a. Provides estimates that are dependent on the market skills of experts and their experience. These skills differ from individual to individual. In this way, making exact demand forecasts becomes difficult.

b. Involves subjective judgment of the assessor, which may lead to over or under-estimation.

c. Depends on data provided by sales representatives who may have inadequate information about the market.

d. Ignores factors, such as change in Gross National Product, availability of credit, and future prospects of the industry, which may prove helpful in demand forecasting.

ii. Delphi Method:

Refers to a group decision-making technique of forecasting demand. In this method, questions are individually asked from a group of experts to obtain their opinions on demand for products in future. These questions are repeatedly asked until a consensus is obtained.

In addition, in this method, each expert is provided information regarding the estimates made by other experts in the group, so that he/she can revise his/her estimates with respect to others' estimates. In this way, the forecasts are cross checked among experts to reach more accurate decision making.

Ever expert is allowed to react or provide suggestions on others' estimates. However, the names of experts are kept anonymous while exchanging estimates among experts to facilitate fair judgment and reduce halo effect.

The main advantage of this method is that it is time and cost effective as a number of experts are approached in a short time without spending on other resources. However, this method may lead to subjective decision making.

iii. Market Experiment Method:

Involves collecting necessary information regarding the current and future demand for a product. This method carries out the studies and experiments on consumer behavior under actual market conditions. In this method, some areas of markets are selected with similar features, such as population, income levels, cultural background, and tastes of consumers.

The market experiments are carried out with the help of changing prices and expenditure, so that the resultant changes in the demand are recorded. These results help in forecasting future demand.

There are various limitations of this method, which are as follows:

a. Refers to an expensive method; therefore, it may not be affordable by small-scale organizations

b. Affects the results of experiments due to various social-economic conditions, such as strikes, political instability, natural calamities

Statistical Methods:

Statistical methods are complex set of methods of demand forecasting. These methods are used to forecast demand in the long term. In this method, demand is forecasted on the basis of historical data and cross-sectional data.

Historical data refers to the past data obtained from various sources, such as previous years' balance sheets and market survey reports. On the other hand, cross-sectional data is collected by conducting interviews with individuals and performing market surveys. Unlike survey methods, statistical methods are cost effective and reliable as the element of subjectivity is minimum in these methods.

These different statistical methods are shown in Figure-12:

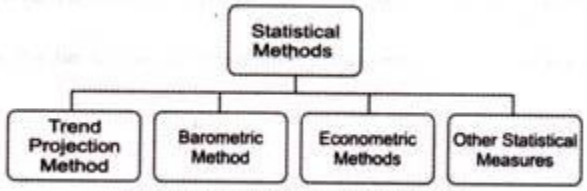


Figure-12: Statistical Methods

The different statistical methods (as shown in Figure-12).

Trend Projection Method:

Trend projection or least square method is the classical method of business forecasting. In this method, a large amount of reliable data is required for forecasting demand. In addition, this method assumes that the factors, such as sales and demand, responsible for past trends would remain the same in future.

In this method, sales forecasts are made through analysis of past data taken from previous year's books of accounts. In case of new organizations, sales data is taken from organizations already existing in the same industry. This method uses time-series data on sales for forecasting the demand of a product.

Table-1 shows the time-series data of XYZ Organization:

Table-1: Time Series Data on Sales of XYZ Organization

Year	Sales (In 1000 tones)
2000	20
2001	24
2002	22
2003	30
2004	36
2005	28

The trend projection method undertakes three more methods in account, which are as follows:

i. Graphical Method:

Helps in forecasting the future sales of an organization with the help of a graph. The sales data is plotted on a graph and a line is drawn on plotted points.

Let us learn this through a graph shown in Figure-13:

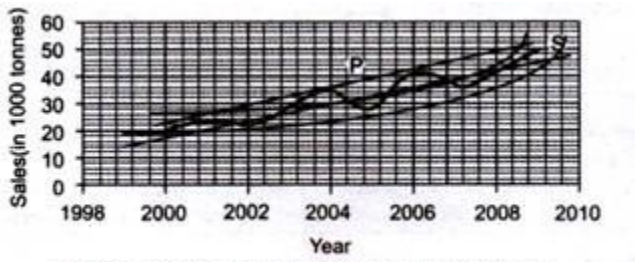


Figure-13: An Example of Graphical Method

Figure-13 shows a curve which is plotted by taking into the account the sales data of XYZ Organization (Table-1). Line P is drawn through mid-points of the curve and S is a straight line. These lines are extended to get the future sales for year 2010 which is approximately 47 tons. This method is very simple and less expensive; however, the projections made by this method may be based on the personal bias of the forecaster.

ii. Fitting Trend Method:

Implies a least square method in which a trend line (curve) is fitted to the time-series data of sales with the help of statistical techniques.

In this method, there are two types of trends taken into account, which are explained as follows:

a. Linear Trend:

Implies a trend in which sales show a rising trend.

In linear trend, following straight line trend equation is fitted:

$S = A+BT$

Where

S= annual sales

T=time (in years)

A and B are constant

B gives the measure of annual increase in sales

b. Exponential Trend:

Implies a trend in which sales increase over the past years at an increasing rate or constant rate.

The appropriate trend equation used is as follows:

$Y = aT^b$

Where

Y= annual sales

T= time in years

a and b are constant

Converting this into logarithm, the equation would be:

Log Y = Log a + b Log T

The main advantage of this method is that it is simple to use. Moreover, the data requirement of this method is very limited (as only sales data is required), thus it is inexpensive method.

However, this method also suffers from certain limitations, which are as follows:

1. Assumes that the past rate of changes in variables will remain same in future too, which is not applicable in the practical situations.

2. Fails to be applied for short-term estimates and where trend is cyclical with lot of fluctuations

3. Fails to measure relationship between dependent and independent variables.

iii. Box-Jenkins Method:

Refers to a method that is used only for short-term predictions. This method forecasts demand only with stationary time-series data that does not reveal the long-term trend. It is used in those situations where time series data depicts monthly or seasonal variations with some degrees of regularity. For instance, this method can be used for estimating the sales forecasts of woolen clothes during the winter season.

Barometric Method:

In barometric method, demand is predicted on the basis of past events or key variables occurring in the present. This method is also used to predict various economic indicators, such as saving, investment, and income. This method was introduced by Harvard Economic Service in 1920 and further revised by National Bureau of Economic Research (NBER) in 1930s.

This technique helps in determining the general trend of business activities. For example, suppose government allots land to the XYZ society for constructing buildings. This indicates that there would be high demand for cement, bricks, and steel.

The main advantage of this method is that it is applicable even in the absence of past data. However, this method is not applicable in case of new products. In addition, it loses its applicability when there is no time lag between economic indicator and demand.

Econometric Methods:

Econometric methods combine statistical tools with economic theories for forecasting. The forecasts made by this method are very reliable than any other method. An econometric model consists of two types of methods namely, regression model and simultaneous equations model.

These two types of methods are explained as follows:

i. Regression Methods:

Refer to the most popular method of demand forecasting. In regression method, the demand function for a product is estimated where demand is dependent variable and variables that determine the demand are independent variable.

If only one variable affects the demand, then it is called single variable demand function. Thus, simple regression techniques are used. If demand is affected by many variables, then it is called multi-variable demand function. Therefore, in such a case, multiple regression is used.

The simple and multiple regression techniques are discussed as follows:

a. Simple Regression:

Refers to studying the relationship between two variables where one is independent variable and the other is dependent variable.

The equation to calculate simple regression is as follows:

$Y = a + bx$

Where, Y = Estimated value of Y for a given value of X

b = Amount of change in Y produced by a unit change in X

a and b = Constants

The equations to calculate a and b are as follows:

$a = Y - bX$

$b = \sum xiyi / \sum xi2$

$\sum xi2 = \sum Xi2 - nX\ 2$

$\sum xiyi = \sum XiYi - nXY$

Let us learn to calculate simple regression with the help of an example. Suppose a researcher wants to study the relationship between the employee (sales group) satisfaction and sales of an organization.

He/she has taken the feedback from the employees in the form of questionnaire and asked them to rate their satisfaction level on a 10-pointer scale where 10 is the highest and 1 is the lowest. The researcher has taken the sales data for every individual member of the sales group. He/she has taken the average of monthly sales for an year for every individual.

The collected data is arranged in Table-2:

Table-2: Data to Calculate Simple Regression

Number of Observations	Employee Satisfaction (Xi)	Sales (in Lacs),Yi	Xi^2	XiYi
1	2	2	4	4
2	4	3	16	12
3	5	6	25	30
4	7	8	49	56
5	8	6	64	48
6	10	9	100	90

Table-2: Data to Calculate Simple Regression				
Number of Observations	**Employee Satisfaction (Xi)**	**Sales (in Lacs),Yi**	**Xi^2**	**XIYi**
7	9	10	81	90
8	3	2	9	6
9	1	3	1	3
10	2	4	4	8
11	4	5	16	20
12	6	8	36	48
13	8	9	64	72
14	10	11	100	110
15	4	5	16	20
16	7	12	49	84
17	9	15	81	135
18	5	6	25	30
19	8	16	64	128
20	9	20	81	180
21	10	20	100	200
22	7	6	49	42
23	6	5	36	30
24	8	14	64	112
25	9	19	81	171
Total	161	224	1215	1729

The calculation of mean for employee satisfaction (X) and sales is as follows:

Mean for X= ∑Xi/n Mean for Y= ∑Yi/n

X= 6.44Y= 8.96

Following equation is used to calculate the value of b:

∑xi2= ∑Xi2– nX 2 and

∑xiyi= ∑XiYi- nXY

Calculating the value of b for the preceding data is as follows:

∑xi2 =∑Xi2– nX 2

∑xi2= 1215-25*6.44*6.44

∑xi2 = 178.16

∑xiyi= ∑XiYi- nXY

∑xiyi=1729-25*6.44*8.96

∑xiyi=286.44

b= ∑xiyi/∑xi2

b = 286.44/ 178.16

b= 1.61

a = Y- bX

a = 8.96 – 1.61*6.44

a = -1.39

Y = a + bX

Y = -1.39 + 1.61X

This is the regression equation in which the researcher can take any value of X to find the estimated value of Y.

For example, if the value of X is 9, then the value of Y would be calculated as follows:

$Y = -1.39 + 1.61X$

$Y = -1.39 + 1.61(9)$

$Y = 13.1$

With the help of preceding example, it can be concluded that if an employee is satisfied, then his/her output would increase.

b. Multiple Regression:

Refers to studying the relationship between more than one independent and dependent variables.

In case of two independent variables and one dependent variable, following equation is used to calculate multiple regression:

$Y = a + b1X1 + b2X2$

Where, Y (Dependent variable) = Estimated value of Y for a given value of X1 and X1

X1 and X2 = Independent variables

b1 = Amount of change in Y produced by a unit change in X1

b2 = Amount of change in Y produced by a unit change in X2

a, b1 and b2 = Constants

The equations used to calculate a and b values are as follows:

$$\sum Yi = na + b1\sum X1i + b2\sum X2i$$
$$\sum X1iYi = a\sum X1i + b1\sum X21i + b2\sum X1iX2i$$
$$\sum X2iYi = a\sum X2i + b1\sum X1iX2i + b2\sum X22i$$

The number of equations depends on the number of independent variables. If there are two independent variables, then there would be three equations and so on.

Let us learn to calculate multiple regression with the help of an example. Suppose the researcher wants to study the relationship between intermediate percentage, graduation percentage, and MAT percentile of a group of 25 students.

It is important to note that intermediate percentage and graduation percentage are independent variables and MAT percentile is dependent variable. The researcher wants to find out whether the percentile in MAT depends on the percentage of intermediate and graduation or not.

The collected data is shown in Table-3:

Table-3: Data to Calculate Multiple Regression

Number of observations	Intermediate percentage (X1i)	Graduation percentage (X2i)	MAT percentile (Yi)
1	60	72	78
2	61	75	75
3	63	78	80
4	66	80	85
5	70	85	84
6	72	86	82
7	74	84	80
8	75	89	81
9	67	90	92
10	69	75	93
11	68	74	96
12	65	72	86
13	64	71	87
14	63	70	88
15	62	86	85
16	79	85	94

Table-3: Data to Calculate Multiple Regression

Number of observations	Intermediate percentage (X1i)	Graduation percentage (X2i)	MAT percentile (Yi)
17	80	89	96
18	84	90	97
19	95	91	98
20	75	88	99
21	92	94	86
22	86	86	85
23	81	94	98
24	85	99	99
25	95	99	99
Total	$\sum X_{1i}=1851$	$\sum X_{2i}=2102$	$\sum Y_i=2223$

The equations required to calculate multiple regression are as follows:

$$\sum Y_i = na + b1\sum X1i + b2\sum X2i$$
$$\sum X1iY_i = a\sum X1i + b1\sum X21i + b2\sum X1iX2i$$
$$\sum X2iY_i = a\sum X2i + b1\sum X1iX2i + b2\sum X22i$$

These equations are used to solve the multiple regression equation manually. However, you can also use SPSS to find out multiple regression.

If we use SPSS in the preceding example, we would get the output shown in Table-4:

Table-4: Summary of Variables used in Multiple Regression Analysis

Variables Entered/Removed

Model	Variables Entered	Variables Removed	Method
1	graduation, intermediate[a]	.	Enter

a. All requested variables entered.

The regression model is shown in Table-5:

Table-5: Summary of Regression Model

Model Summary

R Square	Adjusted R Square	Std. Error of the Estimate
.965	.962	1.96938

a. Predictors: (Constant), graduation, intermediate

Table-5 shows the summary of the regression model. In this table, R is the correlation coefficient between the independent and dependent variables, which is very high in this case. R Square shows that a large part of variation in the model is shown by employment opportunities in a state. Standard error of estimate is quite low that is 1.97. It also indicates that the variation in the present data is less.

Table-6 shows the coefficients of regression model:

Table-6: Coefficients of Linear Regression Analysis

Coefficients[a]

Unstandardized Coefficients		Standardized Coefficients	t	Sig.
B	Std. Error	Beta		
55.704	12.771		4.362	.000
.352	.201	.506	1.753	.093
.085	.250	.098	.340	.737

a. Dependent Variable: MAT

Table-6 shows that the calculated t value is greater than the significance t value. Thus, the coefficients show cause and effect relationship between the independent and dependent variables.

Table-7 shows the AN OVA table for the two variables under study:

Table-7: Variation Analysis of Linear Regression

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2332.514	2	1166.257	300.702	.000[a]
	Residual	85.326	22	3.878		
	Total	2417.840	24			

a. Predictors: (Constant), graduation, intermediate

b. Dependent Variable: MAT

Table-7 shows the analysis of variation in the model. The regression row shows the variation occurred due to regression model. However, the residual row shows the variation that occurred by chance. In Table-7, the value of sum of squares for regression row is greater than the value of sum of squares for residual row; therefore, most of the variations are produced only due to model.

The calculated F value is very large as compared to the significance value. Therefore, we can say that the intermediate percentage and graduation percentage have a strong effect on the MAT percentile of a student.

Simultaneous Equations:

Involve several simultaneous equations.

There are two types of variables that are included in this model, which are as follows:

i. Endogenous Variables:

Refer to inputs that are determined within the model. These are controlled variables.

ii. Exogenous Variables:

Refer to inputs of the model. Examples are time, government spending, and weather conditions. These variables are determined outside the model.

For developing a complete model, endogenous and exogenous variables are determined first. After that, necessary data on both exogenous and endogenous variables are collected. Sometimes, data is not available in required form, thus, it needs to be adjusted into the model.

After the development of necessary data, the model is estimated through some appropriate method. Finally, the model is solved for each endogenous variable in terms of exogenous variable. The prediction is finally made.

Other Statistical Measures:

Apart from statistical methods, there are other methods for demand forecasting. These measures are very specific and used for only particular datasets. Therefore, there usage cannot be generalized for all types of research.

These measures are shown in Figure-14:

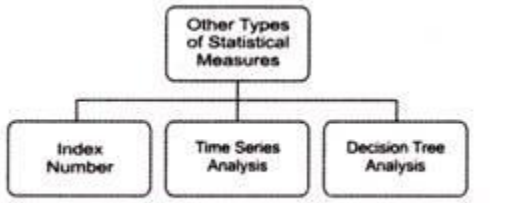


Figure-14: Different Types of Statistical Measures

The different types of statistical measures (as shown in Figure-14) are discussed as follows:

iii. Index Number:

Refers to the measures used to study the fluctuations in a variable or group of related variables with respect to time period/base period. They are most commonly used in economics and financial research to study various factors, such as price and quantity of a product. The factors that are responsible for the problem are identified and calculated.

There are mainly four types of index numbers, which are as follows:

a. Simple index number:

Refers to the number that measures a relative change in a single variable with respect to the base year.

b. Composite index number:

Refers to the number that measures a relative change in a group of related variables with respect to the base year.

c. Price index number:

Refers to the number that measures a relative change in the price of a commodity in different time periods.

d. Quantity index number:

Refers to the number that measures a relative change in the physical quantity of goods produced, consumed or sold for a commodity in different time periods.

Time Series Analysis: Refers to the analysis of a series of observations over a period of equally spaced time intervals. For example analyzing the growth of a company from its incorporation to the present situation. Time series analysis is applicable in various fields, such as public sector, economics, and research.

There are various components of time series analysis, which are as follows:

a. Secular Trend:

Refers to the trend that is denoted by T and prevalent over a period of time. Secular trend for a data series can be upward or downward. The upward trend shows the increase in a variable, such as increase in prices of commodities; whereas, the downward trend shows the declining phases, such as decline in the rate of diseases and sales for a particular product.

b. Short Time Oscillation:

Refers to a trend that remains for a shorter period of time.

It can be classified into the following three trends:

1. Seasonal trend:

Refers to the trend that is denoted by S and occurs year after year for a particular period. The reason for such trends is weather conditions, festivals, and some other customs. Examples of seasonal trend are the increase in the demand for woolens in winters and increase in sales for sweet near Diwali.

2. Cyclical Trend:

Refers to the trend that is denoted by C and lasts more than for an year. Cyclical trends are neither continuous nor seasonal in nature. An example of cyclical trend is business cycle.

3. Irregular trend:

Refers to the trend that is denoted by I and is short and unpredictable in nature. Examples of irregular trends are earthquakes, volcano eruptions, and floods.

Decision Tree Analysis:

Refers to the model that is used to take decision in an organization. In the decision tree analysis, a tree-type structure is drawn to decide the best solution for a problem. In this analysis, we first find out different options that we can apply to solve a particular problem.

After that, we can find out the outcome of each option. These options/decisions are connected with a square node while the outcomes are demonstrated with a circle node. The flow of a decision tree should be from left to right.

The shape of the decision tree is shown in Figure-15:

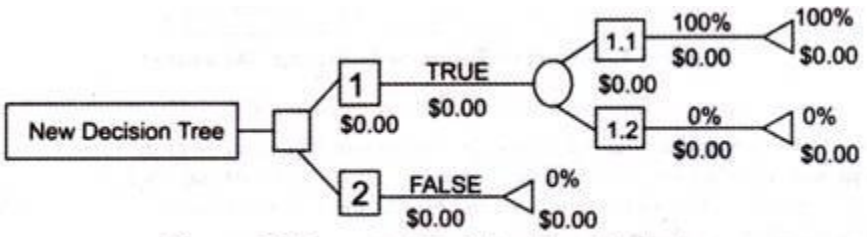


Figure-15: Format of Decision Tree Analysis

Let us understand the working of a decision tree with the help of an example. Suppose an organization wants to decide the type of segmentation to increase the customer base.

This problem can be solved by using the decision tree shown in Figure-16:

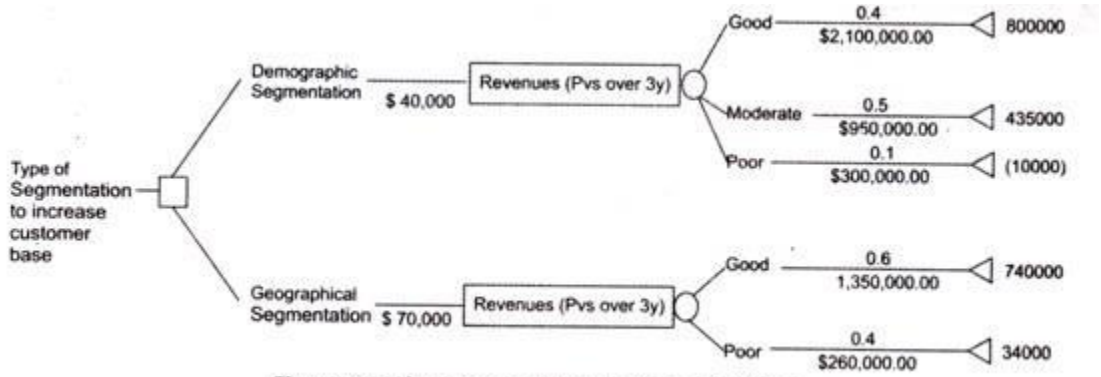


Figure-16: Showing an Example of Decision Tree

In Figure-16, the decision tree shows two types of segmentation, namely demographic segmentation and geographical segmentation. Now, we would analyze the outcomes of these two segmentations. To analyze the demographic segmentation, the company has to incur S 40,000 (estimated cost). The outcome of the demographic segmentation can be good, moderate, and poor.

The estimated revenue projected for three years for the three options (good, moderate, and poor) are as follows:

Good = $ 21500000

Moderate = $ 950000

Poor= S300000

The probabilities assigned to the outcomes are 0.4 for good, 0.5 for moderate, and 0.1 for poor.

Now, we calculate the outcomes of demographic segmentation in the following manner:

Good= 0.4*2100000 = 840000

Moderate = 0.5*950000=475000

Poor = 0.1*300000= 30000

Similarly, in case of geographical segmentation, the cost incurred is $ 70000 (estimated cost). The outcome of the geographical segmentation can be good and poor.

The estimated revenue projected for three years for the two options (good and poor) are as follows:

Good = $ 1350000

Poor= $ 260000

The probabilities assigned to the outcomes are 0.6 for good and 0.4 for poor.

Now, we calculate the outcomes of geographical segmentation in the following manner:

Good= 0.6*1350000 = $ 810000

Poor = 0.4*260000 = $ 104000

Now, we would analyze the two outcomes for taking a decision to select one segmentation out of the two segmentations in the following manner:

For demographic segmentation:

Good= 840000-40000= $ 800000

Moderate = 475000-40000= $ 435000

Poor = 30000-40000= $ (10000)

Similarly, for geographical segmentation:

Theory of Consumer behavior

Economics is not just statistics and graphs. It also deals with human behavior and human wants. The theory of consumer behavior in particular deals with how consumers allocated and spend their income among all the different goods and services. Let us learn more about this.

Meaning and Definition:

Consumer behaviour is the study of how individual customers, groups or organizations select, buy, use, and dispose ideas, goods, and services to satisfy their needs and wants. It refers to the actions of the consumers in the marketplace and the underlying motives for those actions.

Marketers expect that by understanding what causes the consumers to buy particular goods and services, they will be able to determine—which products are needed in the marketplace, which are obsolete, and how best to present the goods to the consumers.

The study of consumer behaviour assumes that the consumers are actors in the marketplace. The perspective of role theory assumes that consumers play various roles in the marketplace. Starting from the information provider, from the user to the payer and to the disposer, consumers play these roles in the decision process.

Some selected definitions of consumer behaviour are as follows:

1. According to Engel, Blackwell, and Mansard, 'consumer behaviour is the actions and decision processes of people who purchase goods and services for personal consumption'.

2. According to Louden and Bitta, 'consumer behaviour is the decision process and physical activity, which individuals engage in when evaluating, acquiring, using or disposing of goods and services'.

Nature of Consumer Behaviour:

1. Influenced by various factors:

The various factors that influence the consumer behaviour are as follows:

a. Marketing factors such as product design, price, promotion, packaging, positioning and distribution.

b. Personal factors such as age, gender, education and income level.

c. Psychological factors such as buying motives, perception of the product and attitudes towards the product.

d. Situational factors such as physical surroundings at the time of purchase, social surroundings and time factor.

e. Social factors such as social status, reference groups and family.

f. Cultural factors, such as religion, social class—caste and sub-castes.

2. Undergoes a constant change:

Consumer behaviour is not static. It undergoes a change over a period of time depending on the nature of products. For example, kids prefer colourful and fancy footwear, but as they grow up as teenagers and young adults, they prefer trendy footwear, and as middle-aged and senior citizens they prefer more sober footwear. The change in buying behaviour may take place due to several other factors such as increase in income level, education level and marketing factors.

3. Varies from consumer to consumer:

Natur All consumers do not behave in the same manner. Different consumers behave differently. The differences in consumer behaviour are due to individual factors such as the nature of the

consumers, lifestyle and culture. For example, some consumers are technoholics. They go on a shopping and spend beyond their means.

They borrow money from friends, relatives, banks, and at times even adopt unethical means to spend on shopping of advance technologies. But there are other consumers who, despite having surplus money, do not go even for the regular purchases and avoid use and purchase of advance technologies.

4. Varies from region to region and country to county:

The consumer behaviour varies across states, regions and countries. For example, the behaviour of the urban consumers is different from that of the rural consumers. A good number of rural consumers are conservative in their buying behaviours.

The rich rural consumers may think twice to spend on luxuries despite having sufficient funds, whereas the urban consumers may even take bank loans to buy luxury items such as cars and household appliances. The consumer behaviour may also varies across the states, regions and countries. It may differ depending on the upbringing, lifestyles and level of development.

5. Information on consumer behaviour is important to the marketers:

Marketers need to have a good knowledge of the consumer behaviour. They need to study the various factors that influence the consumer behaviour of their target customers.

The knowledge of consumer behaviour enables them to take appropriate marketing decisions in respect of the following factors:

a. Product design/model

b. Pricing of the product

c. Promotion of the product

d. Packaging

e. Positioning

f. Place of distribution

6. Leads to purchase decision:

A positive consumer behaviour leads to a purchase decision. A consumer may take the decision of buying a product on the basis of different buying motives. The purchase decision leads to higher demand, and the sales of the marketers increase. Therefore, marketers need to influence consumer behaviour to increase their purchases.

7. Varies from product to product:

Consumer behaviour is different for different products. There are some consumers who may buy more quantity of certain items and very low or no quantity of other items. For example, teenagers may spend heavily on products such as cell phones and branded wears for snob appeal, but may not spend on general and academic reading. A middle- aged person may spend less on clothing, but may invest money in savings, insurance schemes, pension schemes, and so on.

8. Improves standard of living:

The buying behaviour of the consumers may lead to higher standard of living. The more a person buys the goods and services, the higher is the standard of living. But if a person spends less on goods and services, despite having a good income, they deprives themselves of higher standard of living.

9. Reflects status:

The consumer behaviour is not only influenced by the status of a consumer, but it also reflects it. The consumers who own luxury cars, watches and other items are considered belonging to a higher status. The luxury items also give a sense of pride to the owners.

Nature and Classification of Human Wants

What do humans really want? And can these wants be satisfied or are human wants endless? While these questions may seem philosophical, we actually study the economic wants of humans in economics. It helps us explain consumer behavior and in turn demand and supply. Let us take a look at the nature and classification of human wants.

Nature of Human Wants

All the desires and aspirations and motives of humans are known as human wants in economics. And the wants that can be satisfied with goods and services of any kind are economic wants. Like for example food, shelter, clothing, etc are economic human wants. And those which cannot be bought are non-economic wants like peace, love, affection, etc.

All human wants to have some basic common characteristics. Let us have a look at the similar nature of human wants.

- Wants are unlimited. A human is never truly satisfied, and so his wants to are endless. We may temporarily satisfy some of our wants but they always reoccur.
- Different wants have varying degrees of intensity. Some wants are extremely urgent, some are less intense.
- Human wants tend to be competitive. We have limited means and so we cannot satisfy all of our wants. So they compete with each other. And the most urgent want will be satisfied.
- Wants can be complementary as well. To satisfy our want for one good we have to make arrangements for another. So now we have the want of two goods. For example to run a car you need petrol.
- The wants of any person will constantly be changing according to the time and place and situation of the person.

- Over time wants of a person can become his habits or customs.

Classification of Human Wants

We can classify wants into three broad categories in economics. These are Necessaries, Comforts, and Luxuries. Let us take a look at all three.

1] Necessaries

These are the human wants absolutely essential for living and surviving. Further necessaries will divide into necessaries for life, for efficiency and finally conventional necessaries. First and most important wants are obviously necessaries for life. These include food, water, clothing, shelter, etc.

And then there are necessaries that improve our efficiency and well being like comfortable housing, nourishing foods, etc. Finally, there are conventional necessaries that arise out of habits, customs or conventions.

2] Comforts

These are the extra wants of the human after necessaries. They are not as essential or urgent as necessaries. Comforts are the wants that make the life of the human comfortable and satisfying. Generally, these include items that save labour on behalf of the human or provide comfort to him in his life. So items such as fans, furnished houses, special clothing for occasions, etc fall under this category of human wants.

3] Luxuries

These are goods that give humans pleasure and prestige in society. They are not needed for existence or comfort but provide happiness and acceptance in the world. These wants may be called superfluous. And such items tend to be expensive.

Some examples of luxuries are cars, diamond jewelry, expensive designer clothing, ACs. As you will notice all these items are not essential to our living. They are items of prestige.

Marginal Utility Analysis

Marginal Utility analysis helps us understand the behavior of a consumer by looking at the way he spends his income on different goods and services to attain maximum satisfaction. In this article, we will look at the assumptions, laws, and limitations under marginal utility analysis.

Marginal utility quantifies the added satisfaction that a consumer garners from consuming additional units of goods or services. The concept of marginal utility is used by economists to determine how much of an item consumers are willing to purchase. Positive marginal utility occurs

when the consumption of an additional item increases the total utility, while negative marginal utility occurs when the consumption of an additional item decreases the total utility.

Marginal Utility Analysis

Before we begin, let's understand the meaning of two important terms – total utility and marginal utility

- Total Utility or Full Satiety – is the sum of utility derived from different units of a commodity consumed by a consumer. Therefore, Total Utility = the sum total of all marginal utility.

- Marginal Utility or Marginal Satiety – is the additional utility derived from the consumption of an additional unit of a commodity. Therefore, Marginal Utility = the addition made to the Total Utility by consuming one more unit of a commodity.

Assumptions of Marginal Utility Analysis

1] The Cardinal Measurability of Utility

This theory states that utility is a cardinal concept. In other words, it is measurable and quantifiable. Hence, you can say that you derive a utility of 10 units from consuming 1 unit of commodity A and 5 from consuming 1 unit of commodity B. This can help you compare different commodities and analyze which commodity offers better utility or satisfaction.

The theory further states that money is the measuring rod of utility. So, the amount of money that you are willing to spend for a unit of commodity rather than going without it is the measure of utility that you derive from the said commodity.

2] The constancy of the Marginal Utility of Money

The second assumption is that when you are spending money on a commodity, the marginal utility of money remains constant throughout. This facilitates the measurement of the utility of commodities in terms of money.

3] The Hypothesis of Independent Utility

This theory ignores the complementarity between goods. It states that the total utility that you get from a collection of goods is a simple sum total of the separate utilities of each good.

The Law of Diminishing Marginal Utility

This is an important law under Marginal Utility Analysis. Alfred Marshall, British Economist defines the law of diminishing marginal utility as follows:

"The additional benefit which a person derives from a given increase in the stock of a thing diminishes with every increase in the stock that he already has."

This law is based on the fundamental tendency of human nature. Human wants are virtually unlimited. However, every single want is satiable. Hence, as we consume more and more units of a good, the intensity of our want for the good decreases. Eventually, it reaches a point where we no longer want it.

In other words, as we consume more units of a good, the extra satisfaction that we derive from the extra unit keeps falling. However, it is important to remember that the marginal utility declines NOT the total utility.

An Illustration

Let us see an example. The table below presents the total and marginal utility derived by Peter from consuming cups of tea per day.

Quantity of Teas	Total Utility	Marginal Utility
1	30	30
2	50	20
3	65	15
4	75	10
5	83	8
6	89	6
7	93	4
8	96	3
9	98	2
10	99	0
11	95	-4

As seen in the table above, when Peter consumes one cup of tea in a day, he derives a total utility of 30 utils (unit of utility) and a marginal utility of 30 utils. When he takes two cups per day, the total utility rises to 50 utils but the marginal utility falls to 20. This trend continues until the last row where the marginal utility is negative. This means that if Peter consumes 11 or more cups of tea per day, then he might fall sick. Here is a graph representing the table:

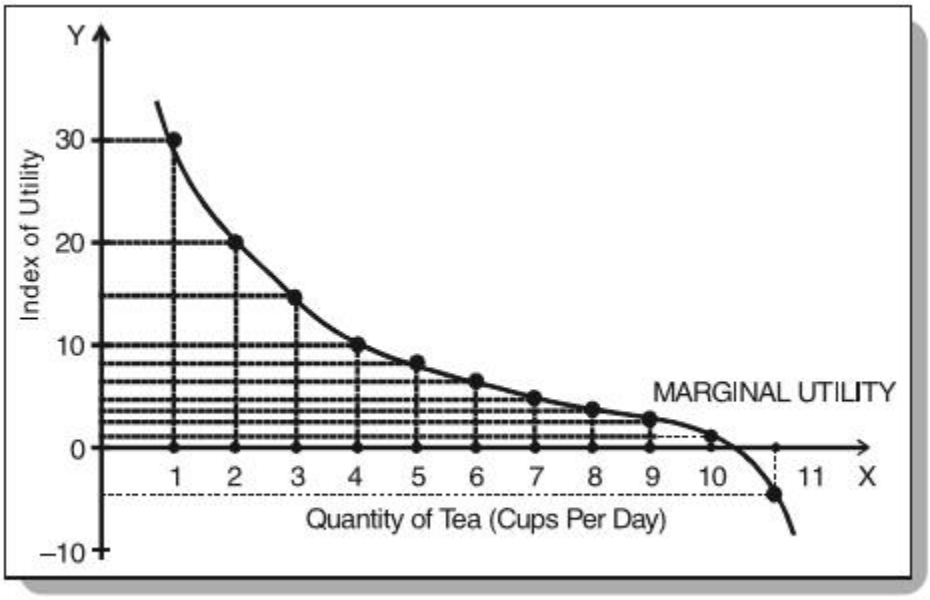


Fig. 1 : Marginal utility of tea consumed

Relationship between Total and Marginal utility

1. As the total utility rises, the marginal utility diminishes
2. When the total utility is maximum, the marginal utility is zero.
3. As the total utility starts diminishing, the marginal utility becomes negative.

This law helps us understand how a consumer reaches equilibrium in case of a single commodity. Typically, a consumer utilizes a commodity until its marginal utility becomes equal to the market price. This ensures that he derives maximum satisfaction by being in equilibrium in respect of the quantity of the commodity.

In case of a fall in the price of the commodity, the equality between marginal utility and price gets disturbed. Therefore, the consumer will consume more units of the good leading to a fall in the marginal utility. He continues consuming until the equilibrium is achieved. On the other hand, in case of a rise in the price of the commodity, he will consume less and achieve equilibrium too.

Limitations of the Law

The law of diminishing marginal utility applies only under certain assumptions:

1. *Homogeneous units* – The different units of a commodity are identical in all respects. The income, taste, temperament, habit, etc. of the consumer also remains unchanged.
2. *Standard units of consumption* – The units of consumption consist of standard units. If a man is thirsty, then water should be given in units of a glass. If you give him a spoonful of water, then the second spoon would conceivably have higher utility than the first.
3. *Continuous consumption* – There is a continuous consumption of units. That is, there is no gap between the consumption of two units.

4. *Not applicable to prestigious goods* – The law does not apply to prestigious goods like gold, cash, etc. where a greater quantity can increase the lust for it.
5. *Related goods* – If you don't have sugar, then you will consume less tea. Hence, the utility of goods can be affected by the absence of related goods.

Indifference curve Analysis

The concept of indifference curve analysis was first propounded by British economist Francis Ysidro Edgeworth and was put into use by Italian economist Vilfredo Pareto during the early 20th century. However, it was brought into extensive use by economists J.R. Hicks and R.G.D Allen.

Hicks and Allen criticized Marshallian cardinal approach of utility and developed indifference curve theory of consumer's demand. Thus, this theory is also known as ordinal approach.

Indifference curve

An indifference curve is a locus of all combinations of two goods which yield the same level of satisfaction (utility) to the consumers.

Since any combination of the two goods on an indifference curve gives equal level of satisfaction, the consumer is indifferent to any combination he consumes. Thus, an indifference curve is also known as 'equal satisfaction curve' or 'iso-utility curve'.

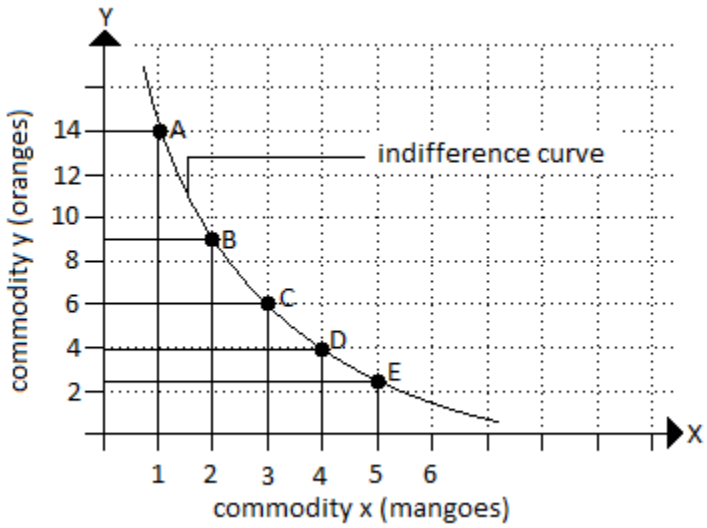
On a graph, an indifference curve is a link between the combinations of quantities which the consumer regards to yield equal utility. Simply, an indifference curve is a graphical representation of indifference schedule.

The table given below is an example of indifference schedule and the graph that follows is the illustration of that schedule.

Table: Indifference schedule

Combination	Mangoes	Oranges
A	1	14
B	2	9
C	3	6
D	4	4
E	5	2.5

Figure: Graphical representation of indifference curve



Assumptions of indifference curve

The indifference curve theory is based on few assumptions. These assumptions are

Two commodities

It is assumed that the consumer has fixed amount of money, all of which is to be spent only on two goods. It is also assumed that prices of both the commodities are constant.

Non satiety

Satiety means saturation. And, indifference curve theory assumes that the consumer has not reached the point of satiety. It implies that the consumer still has the willingness to consume more of both the goods. The consumer always tends to move to a higher indifference curve seeking for higher satisfaction.

Ordinal utility

According to this theory, utility is a psychological phenomenon and thus it is unquantifiable. However, the theory assumes that a consumer can express utility in terms of rank. Consumer can rank his/her preferences on the basis of satisfaction yielded from each combination of goods.

Diminishing marginal rate of substitution

Marginal rate of substitution may be defined as the amount of a commodity that a consumer is willing to trade off for another commodity, as long as the second commodity provides same level of utility as the first one.

And, diminishing marginal rate of substitution states that the rate by which a person substitutes X for Y diminishes more and more with each successive substitution of X for Y.

As indifference curve theory is based on the concept of diminishing marginal rate of substitution, an indifference curve is convex to the origin.

Rational consumers

According to this theory, a consumer always behaves in a rational manner, i.e. a consumer always aims to maximize his total satisfaction or total utility.

Properties of indifference curve

There are four basic properties of an indifference curve. These properties are

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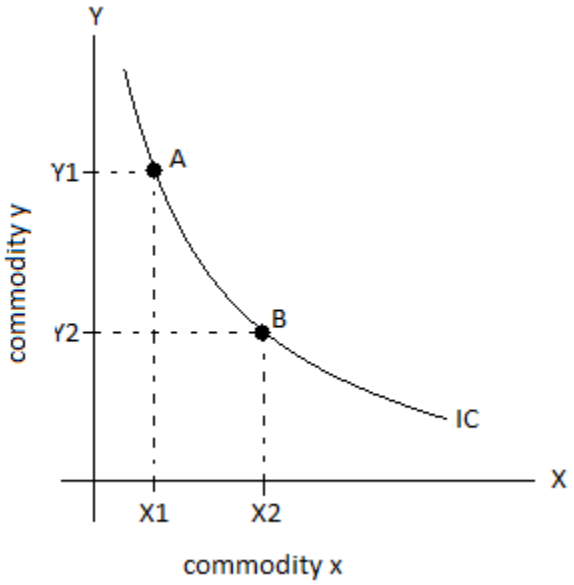
Indifference curve slope downwards to right

An indifference curve can neither be horizontal line nor an upward sloping curve. This is an important feature of an indifference curve.

When a consumer wants to have more of a commodity, he/she will have to give up some of the other commodity, given that the consumer remains on the same level of utility at constant income. As a result, the indifference curve slopes downward from left to right.



In the above diagram, IC is an indifference curve, and A and B are two points which represent combination of goods yielding same level of satisfaction.

We can see that when X1 amount of commodity X was consumed, Y1 amount of commodity Y was also consumed. When the consumer increased the consumption of commodity X to X2, the amount of commodity Y fell to Y2. And, thus the curve is sloping downward from left to right.

Indifference curve is convex to the origin

As mentioned previously, the concept of indifference curve is based on the properties of diminishing marginal rate of substitution.

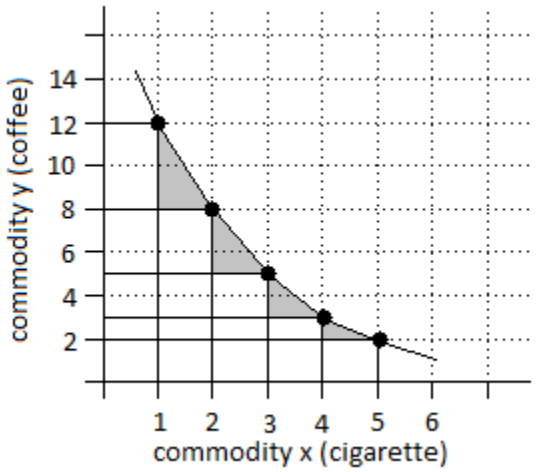
According to diminishing marginal rate of substitution, the rate of substitution of commodity X for Y decreases more and more with each successive substitution of X for Y.

Also, two goods can never perfectly substitute each other. Therefore, the rate of decrease in a commodity cannot be equal to the rate of increase in another commodity.

Table: Indifference schedule

Combination	Cigarette	Coffee
A	1	12
B	2	8
C	3	5
D	4	3
E	5	2

The above table represents various combination of coffee and cigarette that gives a man same level of utility. When the man drinks 12 cup of coffee, he consumes 1 cigarette every day. When he started consuming two cigarettes a day, his coffee consumption dropped to 8 cups a day. In the same way, we can see other combinations as 3 cigarettes + 5 cup coffee, 4 cigarettes + 3 cup coffee and 5 cigarettes + 2 cup coffee.



We can clearly see that the rate of decrease in consumption of coffee is not the same as rate of increase in consumption of cigarette. Similarly, rate of decrease in consumption of coffee has gradually decreased even with constant increase in consumption of cigarette.

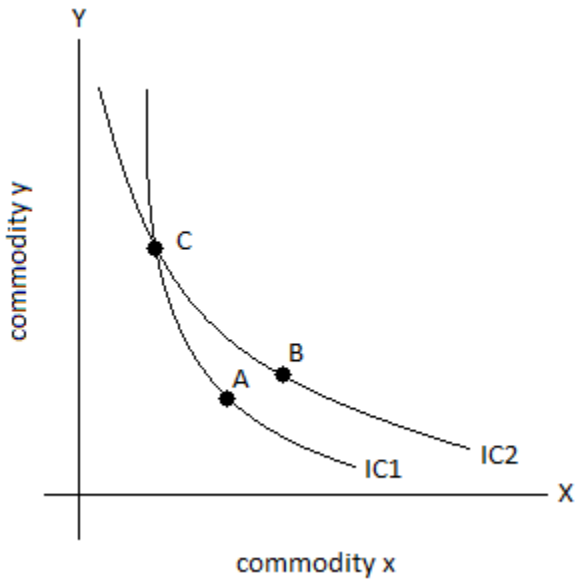
Thus, indifference curve is always convex (neither concave nor straight).

Indifference curve cannot intersect each other

Each indifference curve is a representation of particular level of satisfaction.

The level of satisfaction of consumer for any given combination of two commodities is same for a consumer throughout the curve. Thus, indifference curves cannot intersect each other.

The following diagram will help you understand this property clearer.



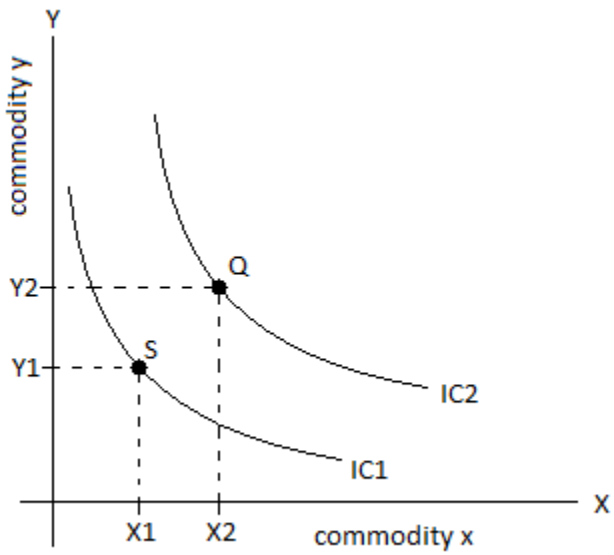
In the above image, IC1 and IC2 are two indifference curves and C is the point where both the curves intersect.

According to indifference curve theory, satisfaction at point C = satisfaction at point A
Also, satisfaction at point C = satisfaction at point B
But, satisfaction at point B ≠ satisfaction at point A.

Therefore, two indifference curves cannot intersect. Yet, two indifference curves need not be parallel to each other.

Higher indifference curve represents higher level of satisfaction

Higher the indifference curves, higher will be the level of satisfaction. This means, any combination of two goods on the higher curve give higher level of satisfaction to the consumer than the combination of goods on the lower curve.



In the above figure, IC1 and IC2 are two indifference curves, and IC2 is higher than IC1. We can also see that Q is a point on IC2 and S is a point on IC2.

Combination at point Q contains more of both the goods (X and Y) than that of the combination at point S. We know that total utility of commodity tends to increase with increase in stock of the commodity. Thus, utility at point Q is greater than utility at point S, i.e. satisfaction yielded from higher curve is greater than satisfaction yielded from lower curve.

Production Analysis

Meaning of Production

Production is a process of combining various inputs to produce an output for consumption. It is the act of creating output in the form of a commodity or a service which contributes to the utility of individuals. In other words, it is a process in which the inputs are converted into outputs.

Production Function

The Production function signifies a technical relationship between the physical inputs and physical outputs of the firm, for a given state of the technology.

Q=f(a,b,c,.....z)

Where a,b,c ....z are various inputs such as land, labor,capital etc. Q is the level of the output for a firm.If labor(L) andcapital (K) are only the input factors, the production function reduces to:

Q=f(L,K)

Production Function describes the technological relationship between inputs and outputs. It is a tool that analysis the qualitative input –output relationship and also represents the technology of a firm or the economy as a whole.

Production Analysis

Production analysis basically is concerned with the analysis in which the resources such as land, labor, and capital are employed to produce a firm's final product. To produce these goods the basic inputs are classified into two divisions:

Variable Inputs

Inputs those change or are variable in the short run or long run are variable inputs.

Fixed Inputs

Inputs that remain constant in the short term are fixed inputs

Factors of production

Factors of production include resource inputs used to produce goods and services. Economist categories input factors into four major categories such as land, labour, capital and organization.

Land: Land is heterogeneous in nature. The supply of land is fixed and it is a permanent factor of production but it is productive only with the application of capital and labour.

Labour: The supply of labour is inelastic in nature but it differs in productivity and efficiency and it can be improved.

Capital: is a man made factor and is mobile but the supply is elastic.

Organization: the organization plans, , supervises, organizes and controls the business activity and also takes risks.

Managerial Uses Of Production Function:

Production functions are logical and useful.

Production analysis can be used as aids in decision making because they can give guidance to obtain the maximum output from a given set of inputs and how to obtain a given output from the minimum aggregation of inputs.

The complex production functions with large numbers of inputs and outputs are analyzed with the help of computer based programmes.

The Law Of Returns To Scale

If all inputs are changed simultaneously or proportionately, then the concept of returns to scale has to be used to understand the behavior of output. The behavior of output is studied when all the factors of production are changed in the same direction and proportion. Returns to scale are classified as follows:

- **Increasing returns to scale**: If output increases more than proportionate to the increase in all inputs.
- **Constant returns to scale:** If all inputs are increased by some proportion, output will also increase by the same proportion.
- **Decreasing returns to scale:** If increase in output is less than proportionate to the increase in all inputs.

For example: If all factors of production are doubled and output increases by more than two times, then the situation is of increasing returns to scale. On the other hand, if output does not double even after a 100 per cent increase in input factors, we have diminishing returns to scale.The general production function is Q=F(L,K)

Isoquants

Isoquants are a geometric representation of the production function. The same level of output can be produced by various combinations of factor inputs. The locus of all possible combinations is called the 'Isoquant'.

Characteristics of Isoquant

- An isoquant slopes downward to the right.
- An isoquant is convex to origin.
- An isoquant is smooth and continuous.
- Two isoquants do notintersect

Types of Isoquants

The production isoquant may assume various shapes depending on the degree of substitutability of factors.

Linear Isoquant

This type assumes perfect substitutability of factors of production. A given commodity may be produced by using only capital or only laboror by an infinite combination of K and L.

Input-Output Isoquant

This assumes strict complementarily, that is zero substitutability of the factors of production. There is only one method of production for any one commodity. The isoquant takes the shape of a right angle. This type of isoquant is called "Leontief Isoquant"

Kinked Isoquant

This assumes limited substitutability of K and L. Generally, thereare few processes for producing any one commodity. Substitutability of factors is possible only at the kinks. It is also called "activity analysis-isoquant" or "linear-programming isoquant" because it is basically used in linear programming.

Economies Of Scale

Economies of scale exist when long run average costs decline as output is increased. Diseconomies of scale exist when long run average cost rises as output is increased. It is graphically presented in the following graph. The economies of scale occur because of

(i) technical economies: the change in production process due to technology adoption.
(ii) Managerial economies
(iii) purchasing economies,
(iv) marketing economies and
(v) financial economies.

Economies of scale means a fall in average cost of production due to growth in the size of the industry within which a firm operates.

Diseconomies Of Scale:

Arises due to managerial problems. If the size of the business becomes too large, then it becomes difficult for management to control the organizational activities therefore diseconomies of scale arise.

Factors Causing Economies Of Scale:

There are various factors influencing the economies of scale of an organization. They are generally classified in to two categories as Internal factors and External factors.

Internal Factors:

1. Labour economies: if the labour force of a firm is specialized in a specific skill then the organization can achieve economies of scale due to higher labour productivity.

2. Technical economies: with the use of advanced technology they can produce large quantities with quality which reduces their cost of production.

3. Managerial economies: the managerial skills of an organization will be advantageous to achieve economies of scale in various business activities.

4. Marketing economies: use of various marketing strategies will help in achieving economies of scale.

5. Vertical integration: if there is vertical integration then there will be efficient use of raw material due to internal factor flow.

6. Financial economies: the firm's financial soundness and past record of financial transactions will help them to get financial facilities easily.

7. Economies of risk spreading: having variety of products and diversification will help them to spread their risk and reduce losses.

8. Economies of scale in purchase: when the organization purchases raw material in bulk reduces the transportation cost and maintains uniform quality.

External Factors:

1. Better repair and maintenance facilities: When the machinery and equipments are repaired and maintained, then the production process never gets affected.

2. Research and Development: research facilities will provide opportunities to introduce new products and process methods.

3. Training and Development: continuous training and development of skills in the managerial, production level will achieve economies of scale.

4. Economies of location: the plant location plays a major role in cutting down the cost of materials, transport and other expenses.

5. Economies of Information Technology: advanced Information technology provides timely accurate information for better decision making and for better services.

6. Economies of by-products: Organizations can increase the economies of scale by minimizing waste and can be environmental responsible by using the by- products of the organization.

Revenue Curves

Revenue Curve under Perfect competition:

Perfect competition is the term applied to a situation in which the individual buyer or seller (firm) represent such a small share of the total business transacted in the market that he exerts no perceptible influence on the price of the commodity in which he deals.

Thus, in perfect competition an individual firm is price taker, because the price is determined by the collective forces of market demand and supply which are not influenced by the individual. When price is the same for all units of a commodity, naturally AR (Price) will be equal to MR i.e., AR = MR. The revenue schedule for a competitive firm is shown in the table 5.

Table 5

Units	TR	AR	MR
1	5	5	5
2	10	5	5
3	15	5	5
4	20	5	5
5	25	5	5

In table 5 we find that as output increases, AR remains the same i.e. Rs. 5. Total revenue increases but at a constant rate. Marginal revenue is also constant i.e. Rs. 5 and is equal to AR.

ThusTR = AR x Q Also TR = MR x Q [Since AR = MR]

In figure 8, on the X-axis, we take quantity whereas on Y-axis, we take revenue. At price OP, the seller can sell any amount of the commodity. In this case the average revenue curve is the horizontal line. The Marginal Revenue curve coincides with the Average Revenue.

It is because additional units are sold at the same price as before. In that case AR = MR. A noteworthy point is that OP price is determined by demand and supply of industry.

The firm only follows, (see figure below):

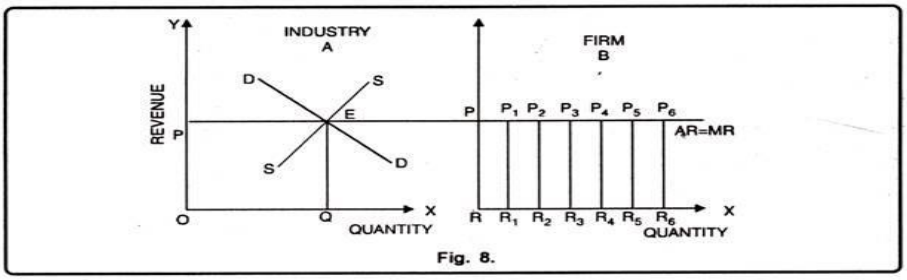


Fig. 8.

(ii) Revenue Curves under Monopoly:

Monopoly is opposite to perfect competition. Under monopoly both AR and MR curves slope downward. It indicates that to sell more units of a commodity, the monopolist will have to lower the price. This can be shown with the help of table 6.

Table 6

Unit sold	Price Rs.	TR	AR	MR
5	4	20	4	—
10	2	20	2	0
20	1	20	1	0
40	0.50	20	0.50	0
50	0.40	20	0.40	0

In case of pure monopoly, AR curve can be rectangular hyperbola as has been shown in Fig. 9. In this situation, a producer is so powerful that by selling his output at different prices, he can make the consumer spend his income on the concerned commodity. In this case AR curve is rectangular hyperbola. It implies that TR of the monopolist will remain same whatever may be the price. Area below each point of AR curve will be equal to each other. When TR is constant MR curve will be represented by OX-axis as has been shown in figure 9.

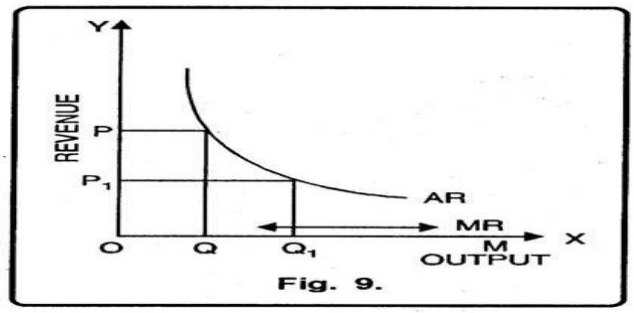


Fig. 9.

UNIT IV

Pricing Methods and Strategies

Meaning of Pricing

Pricing is the method of determining the value a producer will get in the exchange of goods and services. Simply, pricing method is used to set the price of producer's offerings relevant to both the producer and the customer.

Every business operates with the primary objective of earning profits, and the same can be realized through the Pricing methods adopted by the firms.

While setting the price of a product or service the following points have to be kept in mind:

- Nature of the product/service.
- The price of similar product/service in the market.
- Target audience i.e. for whom the product is manufactured (high, medium or lower class)
- The cost of production viz. Labor cost, raw material cost, machinery cost, inventory cost, transit cost, etc.
- External factors such as Economy, Government policies, Legal issues, etc.

Pricing Objectives

The objective once set gives the path to the business i.e. in which direction to go. The following are the pricing objectives that clears the purpose for which the business exists:

1. **Survival:** The foremost Pricing Objective of any firm is to set the price that is optimum and help the product or service to **survive in the market**. Each firm faces the danger of getting ruled out from the market because of the intense competition, a mature market or change in customer's tastes and preferences, etc.Thus, a firm must set the price covering the **fixed and variable cost** incurred without adding any profit margin to it. The survival should be the short term objective once the firm gets a hold in the market it must strive for the additional profits.The **New Firms** entering into the market adopts this type of pricing objective.

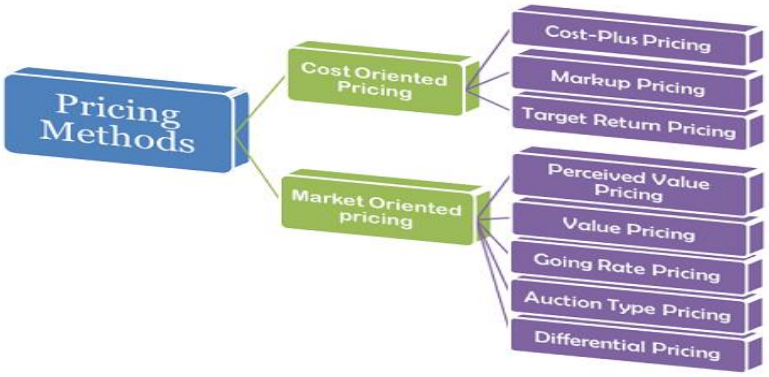
2. **Maximizing the current profits:** Many firms try to maximize their current profits by estimating **the Demand and Supply** of goods and services in the market. Pricing is done in line with the product's demand in the customers and the substitutes available to fulfill that demand. Higher the demand higher will be the price charged. **Seasonal supply and demand** of goods and services are the best examples that can be quoted here.
3. **Capturing huge market share**: Many firms charge **low prices** for their offerings to capture greater market share. The reason for keeping the price low is to have an increased sales resulting from the **Economies of Scale**. Higher sales volume lead to lower production cost and increased profits in the long run.This strategy of keeping the price low is also known as **Market Penetration Pricing**. This pricing method is generally used when competition is intense and customers are price sensitive. **FMCG industry** is the best example to supplement this.
4. **Market Skimming:** Market skimming means charging a **high price** for the product and services offered by the firms which are innovative, and uses modern technology. The prices are comparatively kept high due to the high cost of production incurred because of modern technology. **Mobile phones, Electronic Gadgets** are the best examples of skimming pricing that are launched at a very high cost and gets cheaper with the span of time.
5. **Product –Quality Leadership**: Many firms keep the price of their goods and services in accordance with the **Quality Perceived** by the customers. Generally, the **luxury goods**create their high quality, taste, and status image in the minds of customers for which they are willing to pay high prices. Luxury cars such as **BMW, Mercedes, Jaguar**, etc. create the high quality with high-status image among the customers.

Pricing Methods

Definition: The **Pricing Methods** are the ways in which the price of goods and services can be calculated by considering all the factors such as the product/service, competition, target audience, product's life cycle, firm's vision of expansion, etc. influencing the pricing strategy as a whole.

The pricing methods can be broadly classified into two parts:

1. Cost Oriented Pricing Method
2. Market Oriented Pricing Method



Cost-Oriented Pricing Method: Many firms consider the **Cost of Production** as a base for calculating the price of the finished goods. Cost-oriented pricing method covers the following ways of pricing:

- **Cost-Plus Pricing:** It is one of the simplest pricing method wherein the manufacturer calculates the cost of production incurred and add a certain percentage of markup to it to realize the selling price. The markup is the percentage of profit calculated on total cost i.e. fixed and variable cost.

  E.g. If the Cost of Production of product-A is Rs 500 with a markup of 25% on total cost, the selling price will be calculated as*Selling Price= cost of production + Cost of Production x Markup Percentage/100*
  Selling Price=500+500 x 0.25= 625
  Thus, a firm earns a profit of Rs 125 (Profit=Selling price- Cost price)

- **Markup pricing-** This pricing method is the variation of cost plus pricing wherein the percentage of markup is calculated on the selling price.**E.g.** If the unit cost of a chocolate is Rs 16 and producer wants to earn the markup of 20% on sales then mark up price will be:

  Markup Price= Unit Cost/ 1-desired return on sales
  Markup Price= 16/1-0.20 = 20
  Thus, the producer will charge Rs 20 for one chocolate and will earn a profit of Rs 4 per unit.

- **Target-Return pricing**– In this kind of pricing method the firm set the price to yield a required Rate of Return on Investment (ROI) from the sale of goods and services.**E.g.** If soap manufacturer invested Rs 1,00,000 in the business and expects 20% ROI i.e. Rs 20,000, the target return price is given by:

  Target return price= Unit Cost + (Desired Return x capital invested)/ unit salesTarget Return Price=16 + (0.20 x 100000)/5000Target Return Price= Rs 20

  Thus, Manufacturer will earn 20% ROI provided that unit cost and sale unit is accurate. In case the sales do not reach 50,000 units then the manufacturer should prepare the break-even chart wherein different ROI's can be calculated at different sales unit.

Market-Oriented Pricing Method: Under this method price is calculated on the basis of market conditions. Following are the methods under this group:

- **Perceived-Value Pricing:** In this pricing method, the manufacturer decides the price on the basis of customer's perception of the goods and services taking into consideration all the elements such as advertising, promotional tools, additional benefits, product quality, the channel of distribution, etc. that influence the customer's perception.

  E.g. Customer buy Sony products despite less price products available in the market, this is because Sony company follows the perceived pricing policy wherein the customer is willing to pay extra for better quality and durability of the product.

- **Value Pricing**: Under this pricing method companies design the low priced products and maintain the high-quality offering. Here the prices are not kept low, but the product is re-engineered to reduce the cost of production and maintain the quality simultaneously.

  E.g. Tata Nano is the best example of value pricing, despite several Tata cars, the company designed a car with necessary features at a low price and lived up to its quality.

- **Going-Rate Pricing-** In this pricing method, the firms consider the competitor's price as a base in determining the price of its own offerings. Generally, the prices are more or less same as that of the competitor and the price war gets over among the firms.

  E.g. In Oligopolistic Industry such as steel, paper, fertilizer, etc. the price charged is same.

- **Auction Type pricing**: This type of pricing method is growing popular with the more usage of internet. Several online sites such as eBay, Quikr, OLX, etc. provides a platform to customers where they buy or sell the commodities. *There are three types of auctions:*

  1. English Auctions-There is one seller and many buyers. The seller puts the item on sites such as Yahoo and bidders raise the price until the top best price is reached.

  2. *Dutch Auctions*– There may be one seller and many buyers or one buyer and many sellers. In the first case, the top best price is announced and then slowly it comes down that suit the bidder whereas in the second kind buyer announces the product he wants to buy then potential sellers competes by offering the lowest price.

  3. *Sealed-Bid Auctions*: This kind of method is very common in the case of Government or industrial purchases, wherein tenders are floated in the market, and potential suppliers submit their bids in a closed envelope, not disclosing the bid to anyone.

- **Differential Pricing**: This pricing method is adopted when different prices have to be charged from the different group of customers. The prices can also vary with respect to time, area, and product form.

  E.g. The best example of differential pricing is Mineral Water. The price of Mineral Water varies in hotels, railway stations, retail stores.

Thus, the companies can adopt either of these pricing methods depending on the type of a product it is offering and the ultimate objective for which the pricing is being done.

Factors affecting the pricing

A. Internal Factors:

1. Cost:

While fixing the prices of a product, the firm should consider the cost involved in producing the product. This cost includes both the variable and fixed costs. Thus, while fixing the prices, the firm must be able to recover both the variable and fixed costs.

2. The predetermined objectives:

While fixing the prices of the product, the marketer should consider the objectives of the firm. For instance, if the objective of a firm is to increase return on investment, then it may charge a higher price, and if the objective is to capture a large market share, then it may charge a lower price.

3. Image of the firm:
The price of the product may also be determined on the basis of the image of the firm in the market. For instance, HUL and Procter & Gamble can demand a higher price for their brands, as they enjoy goodwill in the market.

4. Product life cycle:
The stage at which the product is in its product life cycle also affects its price. For instance, during the introductory stage the firm may charge lower price to attract the customers, and during the growth stage, a firm may increase the price.

5. Credit period offered:
The pricing of the product is also affected by the credit period offered by the company. Longer the credit period, higher may be the price, and shorter the credit period, lower may be the price of the product.

6. Promotional activity:
The promotional activity undertaken by the firm also determines the price. If the firm incurs heavy advertising and sales promotion costs, then the pricing of the product shall be kept high in order to recover the cost.

B. External Factors:

1. Competition:
While fixing the price of the product, the firm needs to study the degree of competition in the market. If there is high competition, the prices may be kept low to effectively face the competition, and if competition is low, the prices may be kept high.

2. Consumers:
The marketer should consider various consumer factors while fixing the prices. The consumer factors that must be considered includes the price sensitivity of the buyer, purchasing power, and so on.

3. Government control:
Government rules and regulation must be considered while fixing the prices. In certain products, government may announce administered prices, and therefore the marketer has to consider such regulation while fixing the prices.

4. Economic conditions:
The marketer may also have to consider the economic condition prevailing in the market while fixing the prices. At the time of recession, the consumer may have less money to spend, so the marketer may reduce the prices in order to influence the buying decision of the consumers.

5. Channel intermediaries:
The marketer must consider a number of channel intermediaries and their expectations. The longer the chain of intermediaries, the higher would be the prices of the goods.

PRICING STRATEGIES

Definition: Price is the value that is put to a product or service and is the result of a complex set of calculations, research and understanding and risk taking ability. A pricing strategy takes into account segments, ability to pay, market conditions, competitor actions, trade margins and input costs, amongst others. It is targeted at the defined customers and against competitors.

Description: There are several pricing strategies:

Premium pricing: high price is used as a defining criterion. Such pricing strategies work in segments and industries where a strong competitive advantage exists for the company. Example: Porche in cars and Gillette in blades.

Penetration pricing: price is set artificially low to gain market share quickly. This is done when a new *product* is being launched. It is understood that prices will be raised once the promotion period is over and market share objectives are achieved. Example: Mobile phone rates in India; housing loans etc.

Economy pricing*:* no-frills price. Margins are wafer thin; overheads like marketing and advertising costs are very low. Targets the mass market and high market share. Example: Friendly wash detergents; Nirma; local tea producers.

Skimming strategy*:* high price is charged for a product till such time as competitors allow after which prices can be dropped. The idea is to recover maximum money before the product or segment attracts more competitors who will lower profits for all concerned. Example: the earliest prices for mobile phones, VCRs and other electronic items where a few players ruled attracted lower cost Asian players.

These are the four basic strategies, variations of which are used in the industry

DUAL PRICING

What Is Dual Pricing?

Dual pricing is the practice of setting different prices in different markets for the same product or service. This tactic may be used by a business for a variety of reasons, but it is most often an aggressive move to take market share away from competitors.

Dual pricing is similar to price discrimination.

KEY TAKEAWAYS

- Dual pricing is most often an aggressive tactic used by a manufacturer to take market share away from a competitor.
- In some cases, dual pricing is necessary to offset the additional costs of doing business in a foreign market.
- Dual pricing is illegal only when it can be proved that a manufacturer set prices unrealistically low for the purpose of unfairly driving out competition.

Understanding Dual Pricing

There are a number of reasons why a company might decide to set different price points for its products in different markets. An aggressive competitor may lower its product price dramatically to make a splash in a new market. The long-term intent is to drive out competitors. The product price will return to its normal level once the competitors have been priced out of the market. This practice is illegal under certain circumstances.

Dual pricing may be demand-based. For example, an airline may offer one price to an early customer and another, higher price to someone booking at the last minute. Additionally, businesses in many developing nations that rely on tourism employ dual pricing strategies. Local residents get lower prices for goods and services while tourists pay more. In many cases, foreigners may not know they're being charged a higher price. Those in the know can negotiate.

Dual Pricing Advantages and Disadvantages

Advantages of Dual Pricing

1. It can be used to lower prices in a new market.

When dual pricing is implemented, a company is able to offset a low price in a new market with an established higher price in a mature market. That allows the company to subsidize the losses in the new market while expanding its footprint. When implemented successfully, this strategy can be used to drive their competition out of the new market. Once that occurs, the company would be free to raise prices to then subsidize another new market.

2. It can be used to counter exchange rate issues.

When there are currency retention requirements or detrimental currency exchange rates in a targeted market, then dual pricing can be used to offset the issues. That allows a business to stay competitive in each market while being able to meet their taxation and financial obligations.

3. It can be used to counter distribution cost variances.

Let's say there is a company that is based in Maine. They have two markets: a local market in their state and one in British Columbia, Canada. To get their products to the other coast, they have higher shipping fees, border fees, and distribution fees that must be paid. By offering their products at a higher price in Canada, they can implement a dual pricing strategy which helps the company be able to maintain their required margins.

4. It can be used to meet higher demand levels.

Dual pricing is also used when there is scarcity within different markets for a specific product. An example of this method is used by the airline industry on a frequent basis. If you book a flight well in advance, there is a good chance that you'll be rewarded with a low price. For someone attempting to book a flight last-minute, the price of their ticket will likely be higher than the ticket purchase by the customer who booked early.

5. It can be used to protect domestic businesses.

Governments can implement dual pricing models too. They do this to protect domestic businesses who may be negatively impacted by a foreign competitor. Through tariffs, subsidies, and similar methods, a government is able to control the pricing of foreign goods or services to make them appear less competitive than domestic items of similar quality. This would potentially offer more local spending, which would then create the potential for more local jobs.

6. It can be used by consumers to save money.

In markets where competition is encouraged, dual pricing gives consumers an option when shopping for something specific. By comparing goods and services, consumers can choose the cheapest option if they wish, which allows them to meet their needs at a lower cost. That gives consumers more money to use for other purposes.

Disadvantages of Dual Pricing

1. It is a practice that may be illegal.

There are some legitimate reasons to consider dual pricing from an organizational viewpoint. There are also some illegal reasons why dual pricing may be considered. If a business is using a dual pricing model as a way to gain an advantage in a targeted

importing market, then it may not be permitted. Entering a new market to undercut domestic businesses may cause harm to the local economy and trigger the implementation of tariffs

2. It can increase export costs.

To create a dual pricing model, there must be a loss somewhere within the economic chain taken by the company. They must have a way to offset that loss through their other markets if this strategy is to be successful. For many organizations, the cost of subsidizing a new market with a predatory pricing strategy tends to harm overall profitability. That means it is not usually a sustainable practice.

3. It can limit the number of goods available to consumers.

One of the easiest ways to deal with a dual pricing issue is to restrict the number of goods or services permitted at discount pricing through quotas. Once the quota has been met, the product or service is no longer permitted in that market. That means consumers affected by quotas may not have the same level of access to the goods or services they want or need.

4. It can limit wage growth in developing markets.

One of the top reasons for offshoring, from a U.S.-based perspective, is that labor costs in other nations are much lower. Because labor is one of the biggest expenses a business faces, reducing its cost can create much higher profits. Now imagine an overseas company in a low-cost labor market is able to produce a similar product. Then they export it to the high-value market. They'd be able to make better profits from a local perspective, undercutting the existing business offshoring labor. By allowing dual pricing, there is no incentive to encourage wage growth at a local level.

5. It can be used for discriminatory purposes.

Dual pricing models can be implemented at the retail level as well. Individual business owners can offer one group of consumers a lower price than another group. In a country like Thailand, this method of pricing is widely practiced in the markets. Tourists, ex-pats, and other foreigners are often charged 3 times more for the same product that someone from Thailand pays. The justification for this practice varies, though it can often be used to discriminate against a specific consumer base. It becomes easier to stop serving a specific group of people if you price your items much higher for only them.

What is Price Discrimination?

Price discrimination refers to a pricing strategy that charges consumers different prices for identical goods or services.

Different Types of Price Discrimination

1. First Degree Price Discrimination

Also known as perfect price discrimination, first-degree price discrimination involves charging consumers the maximum price that they are willing to pay for a good or service. Here, consumer surplus is entirely captured by the firm. In practice, a consumer's maximum willingness to pay is difficult to determine. Therefore, such a pricing strategy is rarely employed.

2. Second Degree Price Discrimination

Second-degree price discrimination involves charging consumers a different price for the amount or quantity consumed. Examples include:

- A phone plan that charges a higher rate after a determined amount of minutes are used
- Reward cards that provide frequent shoppers with a discount on future products

- Quantity discounts for consumers that purchase a specified number of more of a certain good

3. Third Degree Price Discrimination

Also known as group price discrimination, third-degree price discrimination involves charging different prices depending on a particular market segment or consumer group. It is commonly seen in the entertainment industry.

For example, when an individual wants to see a movie, prices for the same screening are different depending on if you are a minor, adult, or senior.

Primary Requirements for a Successful Price Discrimination

For a firm to employ this pricing strategy, there are certain conditions that must be met:

#1 Imperfect competition

The firm must be a price maker (i.e., operate in a market with imperfect competition). There must be a degree of monopoly power to be able to employ price discrimination. If the company is operating in a market with perfect competition, this pricing strategy would not be possible, as there would not be sufficient ability to influence prices.

#2 Prevention of resale

The firm must be able to prevent resale. In other words, consumers who already purchased a good or service at a lower price must not be able to re-sell it to other consumers who would've otherwise paid a higher price for the same good or service.

#3 Elasticity of demand

Consumer groups must demonstrate varying elasticities of demand (i.e., low-income individuals being more elastic to airplane tickets compared to business travelers). If consumers all show the same elasticity of demand, this pricing strategy will not work.

Example of Price Discrimination: Cineplex

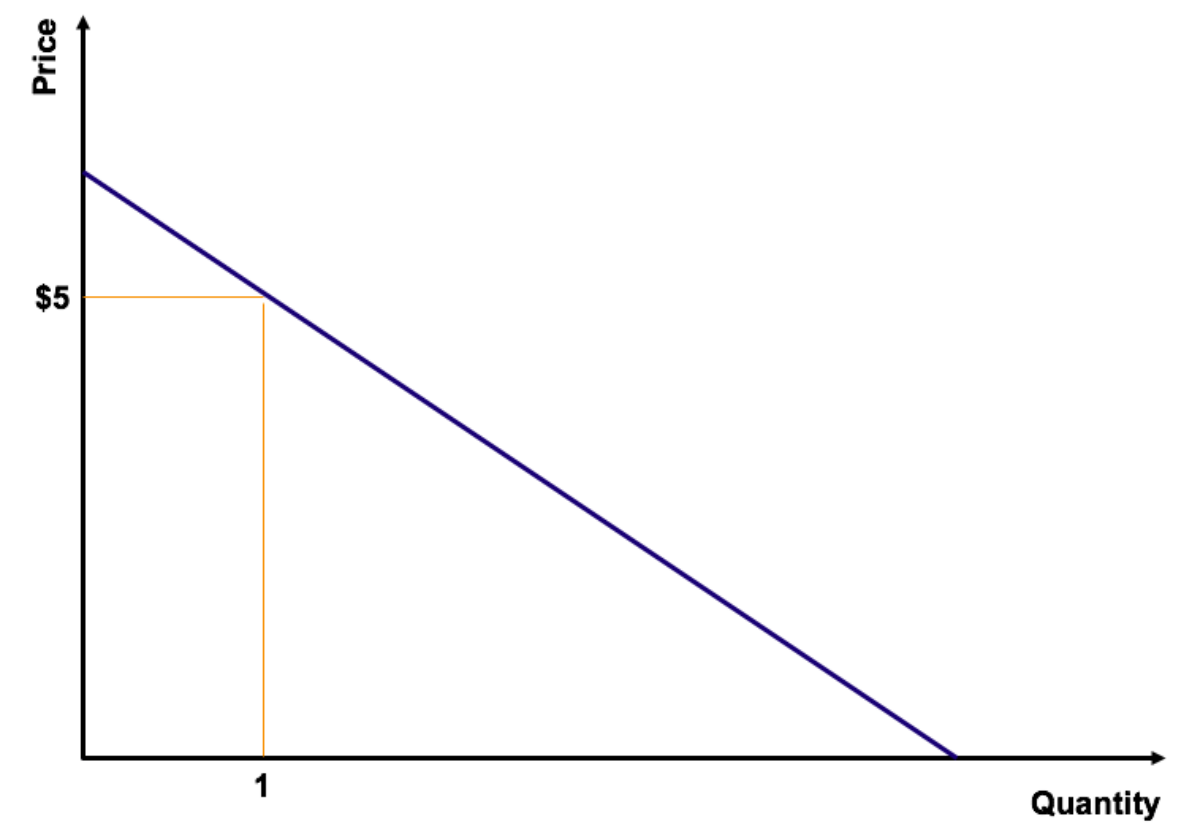
The Canadian entertainment company, Cineplex, is a classic example of a firm using the price discrimination strategy. Depending on the age demographic, tickets for the same movie are sold at different prices. In addition, Cineplex charges different prices on different days (Tuesday being the cheapest and weekends being the most expensive). The following is a diagram from Cineplex for a movie screening on a Monday.

	Child (3-13)	General (14-64)	Senior (65+)
General	$9.25	$13.25	$9.99
3D	$12.25	$16.25	$12.99
UltraAVX	$12.25	$16.25	$12.99
UltraAVX 3D	$14.25	$18.25	$14.99
D-BOX UltraAVX	$20.25	$24.25	$20.99
D-BOX UltraAVX 3D	$20.25	$24.25	$20.99

As indicated in the diagram above, different age demographics face a different price for the same screening. This is an example of third-degree price discrimination.

Price Discrimination in Increasing a Firm's Profitability

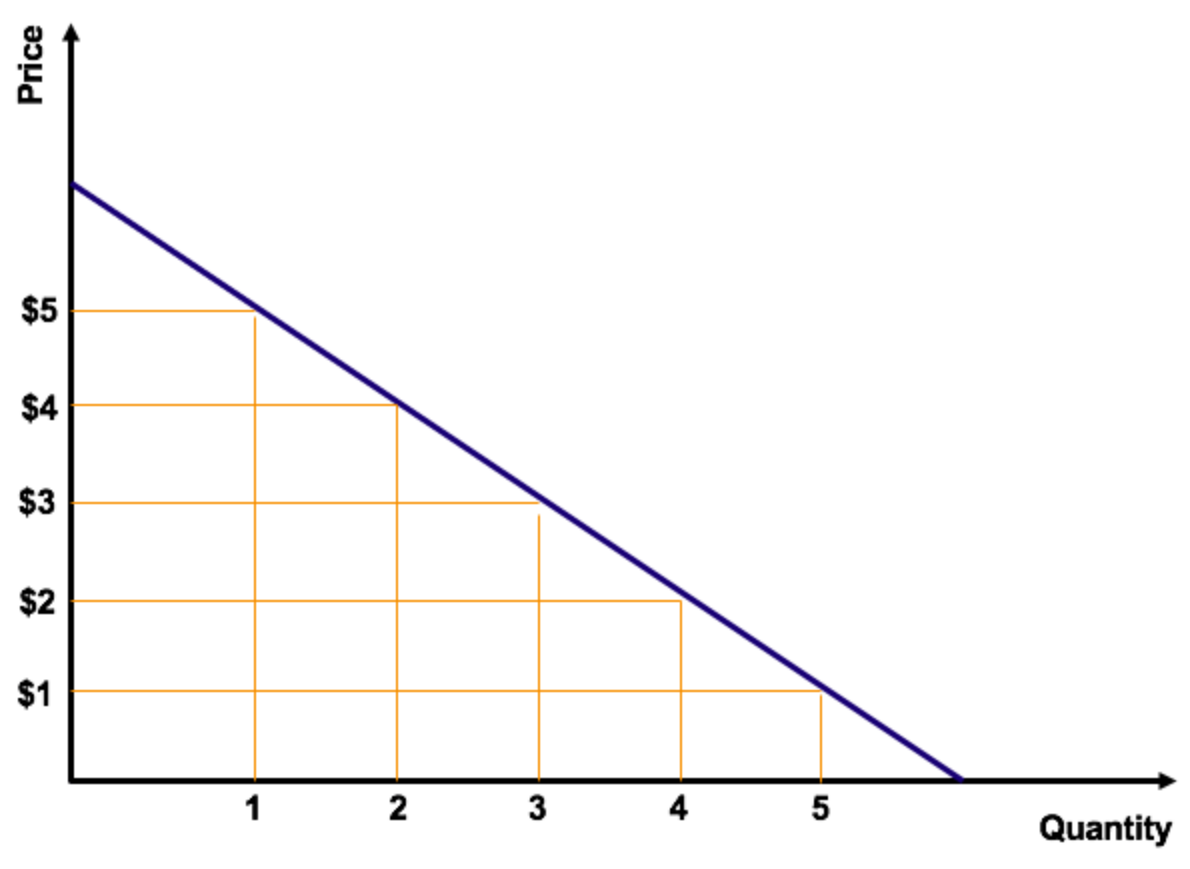
Consider a firm that charges a single price for an apple: $5. In such a case, it would lead to one sale and total revenue of $5:



Now, consider a firm that is able to charge a different price to each customer. For example:

- $5 for the first consumer
- $4 for the second consumer
- $3 for the third consumer, and so on.

In such a situation, the firm is able to increase its revenues by selling to customers who were originally not going to purchase, by offering price = each customer's willingness to pay. This leads to five sales and total revenue of $5+$4+$3+$2+1 = $15.



As indicated above, price discrimination allows a firm to reap additional profits and convert consumer surplus into producer surplus.

Advantages of Price Discrimination

Advantages of this pricing strategy can be viewed from the perspective of both the firm and the consumer:

The Firm

- **Profit maximization**: The firm is able to turn consumer surplus into producer surplus. In a first-degree price discrimination strategy, all consumer surplus is turned into producer surplus. It also ties into survivability, as smaller firms are able to better survive if they are able to offer different prices in times of greater and lower demand.
- **Economies of scale**: By charging different prices, sales volume is likely to increase. As a result, firms can benefit from increasing their production towards capacity and utilizing economies of scale.

The Consumer

- **Lower prices**: Although not all consumers are winners, consumers that are highly elastic may gain consumer surplus from the lower prices, due to price discrimination. For example, at a movie theatre, tickets for seniors and children are typically priced at a discount to adult tickets.

Disadvantages of Price Discrimination

- **Higher prices**: As indicated above, some consumers will face lower prices while others will face higher prices. Consumers that face higher prices (i.e., consumers who purchase airline tickets during peak season) are disadvantaged.
- **Reduction in consumer surplus**: The pricing strategy reduces consumer surplus and transfers money from consumers to producers, leading to inequality.

Market Structure

UNIT-V

Market Structure:

Market is a place where people can buy and sell commodities. It may be vegetables market, fish market, financial markets or foreign exchange markets.

In economic language market is a study about the demand for and supply of a particular item and its consequent fixing of prices, example bullion on market and foreign exchange market or a commodity market like food grains market etc.

Market is classified into various types based on the characteristic features. They are classified on the basis of:

Area: family market, local, regional, national and international

Time: very short period, short period, long period, very long period

Commodity: produce exchange, bullion market, capital market, stock market

Nature of Transaction: spot market, forward market and futures market

Volume of business: whole sale market, retail market

Importance: primary market, secondary market, territory market

Regulation: regulated market, unregulated market

Economics or competition: Perfect market and imperfect market

Market In Economic Sense Implies:

1. Presence of buyers and sellers of the commodity

2. Establishment of contact between the buyer and seller

3. Similarity of the product

4. Exchange of commodity for a price

Classification Of Market Structure Based On The Nature Of Competitor:

1. Perfect market 2. Imperfect market

The imperfect market in turn can be classified as

a. Monopoly market

b. Duopoly market

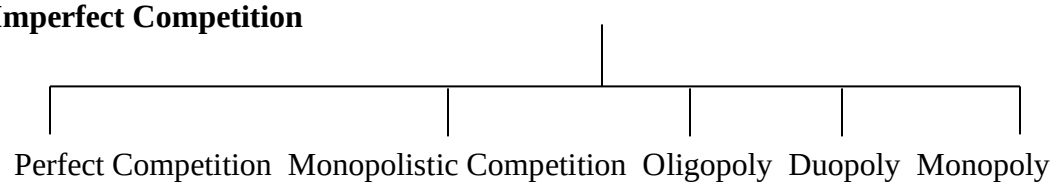
c. Oligopoly market

d. Monopolistic market/ competition

The number and relative size of firms producing a good vary across industries. Market structures range from perfect competition to monopoly. Most real-world firms are along the continuum of

imperfect competition. Market structure affects market outcomes, ie., the price and quantity of goods supplied.

Imperfect Competition



The above chart tells us that there are four types of imperfect competition existing in the present market environment. It is classified based on the number of buyers, sellers and competitors in the market. This chapter explains the price determination and profit maximization methods followed in these markets. Let us understand the meaning of each competition.

Monopoly market: a market with only one seller and a large number of buyers.

Monopolistic competition: a market in which firms can enter freely, each producing its own brand or version of a differentiated product.

Oligopoly market: market in which only a few firms compete with one another and entry by new firms is impeded/restricted.

Duopoly: market in which two firms compete with each other.

Monopsony: is a market with only one buyer, and a few/large sellers.

Perfect Market

Perfect competition is a market structure characterized by a complete absence of rivalry among the individual firms. A perfectly competitive firm is one whose output is so small in relation to market volume that its output decisions have no perceptible impact on price. No single producer or consumer can have control over the price or quantity of the product.

Characteristic features of perfect market:

1. Large number of buyers and sellers

2. Homogeneous product

3. Perfect knowledge about the market

4. Ruling prices

5. Absence of transport cost

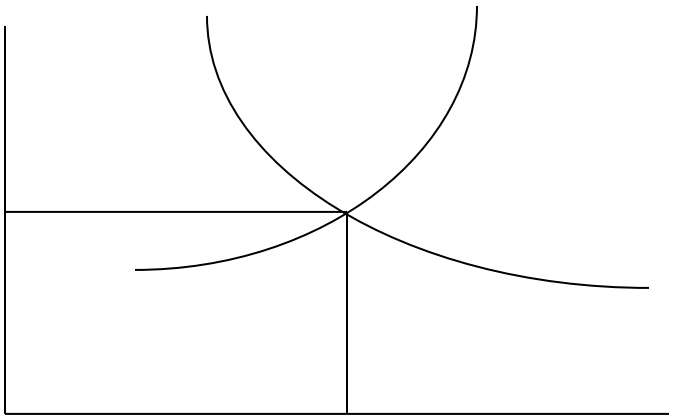
6. Perfect mobility of factors

7. Profit maximization

8. Freedom in decision making

In perfect market, the price of the commodity is determined based on the demand for and supply of the product in the market. The equilibrium price and output determination is as shown in the graph.

Graph - Price And Output Determination In The Perfect Market



The demand curve (D) and the supply curve (S) intersect each other at a particular point which is called the equilibrium point. At the equilibrium point 'E' the quantity demanded and the quantity supplied are equal (that is OQ quantity of commodity is demanded and the same level is supplied etc). Based on the equilibrium the price of the commodity is fixed as OP. This is the fundamental pricing strategy followed in the perfect market.

Pricing Under Perfect Competition

Demand and supply curves can be used to analyze the equilibrium market price and the optimum output.

1. If quantity demanded is equal to quantity supplied at a particular price then the market is in equilibrium

2. If quantity demanded is more than the quantity supplied then market price may not be stable. i.e., it will rise.

3. If quantity demanded is less than quantity supplied then market price is fixed not in a equilibrium position.

Monopoly Market

Mono means single, poly means seller and hence monopoly is a market structure where only one sells the goods and many buyers buy the same. Monopoly lies at the opposite extreme from perfect competition on the market structure continuum. A firm produces the entire supply of a particular good or service that has no close substitute.

Characteristic Features:

1. A single seller in the market

2. There are no close substitutes

3. There is a restriction for the entry and exit for the firms in the market

4. Imperfect dissemination of information

This does not mean that the monopoly firms are large in size. For example a doctor who has a clinic in a village has no other competitor in the village but in the town there may be more doctors. Therefore the barrier to the entry is due to economies of scale, economies of scope, cost complementarities, patents and other legal barriers.

Profit maximization under Monopoly Competition

For monopolist there are two options for maximizing the profit i.e. maximize the output and the limit the price or limit the production of the goods and services and fix a higher price (market driven price). In monopoly competition, the demand curve of the firm is identical to the market demand curve of that product. In monopoly the MR is always less than the price of the commodity.

Profit Maximization Rule:

Produce at that rate of output where MR = MC. From the graph we can understand the profit maximization under monopoly. 'X' axis indicates the output and 'Y' the price/cost and revenue. The marginal revenue curve is denoted as MR. The average revenue curve is AR which is also the demand curve. MC is the marginal cost curve, It looks like a tick mark and average cost curve AC is boat shape.

Graph- Profit Maximization Under Monopoly Market

From the above graph it is seen that the demand curve D and average revenue curve AR are depicted as a single curve. The marginal revenue curve MR also slopes the same but the MR curve

is below the AR curve. The short run marginal cost curve SMC looks like a tick mark and the boat shaped average cost curve SAC is also seen in the graph. The profit maximization criteria of MR=MC is followed in the monopoly market and the equilibrium point 'E' is derived from the intersection of

MR and SMC curves in the short run. i.e. MC curve or SMC here intersects the MR curve from below. Based on the equilibrium point, the output is the optimum level of production i.e., at OM quantity. The price of the commodity is determined as OP. On an average the firm receives MQ amount as revenue. The total revenue of selling OM quantity gives OMQP amount of total revenue (OM quantity x OP price). The firm has spent MR as an average cost to produce OM quantity and the total cost of production is OMRS (OM quantity x MR cost per unit)

Profit = TR - TC

= OMQP - OMRS

= PQRS (the shaded portion in the graph)

In the short run the monopoly firm will earn profit continuously even with various returns.