INTRODUCTION TO MANAGERIAL ECONOMICS

Managers,in their day-today activities,are always confronted with several issues such as how much quantity is to be supplied; at what price; should the product be made internally; or whether it should be bought from outside; how much quantity is to be produced to make a given amount of profit and so on. Managerial economics provides us a basic insight into seeking solutions for managerial problems.

Managerial economics, as the name itself implies, is an offshoot of two distinct disciplines: Economics and Management. In other words, it is necessary to understand what these disciplines are, at least in brief, to understand the nature and scope of managerial economics.

IntroductiontoEconomics

Economics is a study of human activity both at individual and national level. The economists of early age treated economics merely as the science of wealth. The reason for this is clear. Every one of us in involved in efforts aimed at earning money and spending this money to satisfy our wants such as food, Clothing, shelter, and others. Such activities of earning and spending money are called

"Economic activities". It was only during the eighteenth century that Adam Smith, the Father of Economics, defined economics as the study of nature and uses of national wealth'.

Dr.Alfred Marshall,one of the greatest economists of the nineteenth century,writes" Economics is a study of man's actions in the ordinary business of life: it enquire show he gets his income and how he uses it". Thus ,it is one side, a study of wealth; and on the other, and more important side; it is the study of man.

Microeconomics

The study of an individual consumer or a firm is called microeconomics (also called theTheoryof Firm).Micro means 'one millionth'. Microeconomics deals with behavior and problems of single individual and of micro organization. Managerial economics has its roots in microeconomics and it deals with the micro or individual enterprises. It is concerned with the application of the concepts such as price theory, Law of Demand and theories of market structure and so on.

Macroeconomics

The study of 'aggregate' or total level of economics activity in a country is called macroeconomics. It studies the flow of economics resources or factors of production (such as land, labour, capital, organisation and technology) from the resource owner to the business firms and then from the business firms to the households. It deals with total aggregates, for instance, total national income total employment, output and totalinvestment.Itstudiestheinterrelationsamongvariousaggregatesandexaminestheirnatureand behaviour, their determination and causes of fluctuations in the. It deals with the price level in

general, instead of studying the prices of individual commodities. It is concerned with the level of employment in the economy. It discusses aggregate consumption, aggregate investment, price level, and payment, theories of employment, and so on.

Though macroeconomics provides the necessary framework in term of government policies etc., for the firm to act upon dealing with analysis of business conditions, it has less direct relevance in the study of theory of firm.

Microeconomics	Macroeconomics
Meaning	
Microeconomics is the branch of Economics that is related to the study of individual, household and firm's behaviour in decision making and allocation of the resources. It comprises markets of goods and services and deals with economic issues.	Macroeconomics is the branch of Economics that deals with the study of the behaviour and performance of the economy in total. The most important factors studied in macroeconomics involve gross domestic product (GDP), unemployment, inflation and growth rate etc.
Area of study	
Microeconomics studies the particular market segment of the economy	Macroeconomics studies the whole economy, that covers several market segments
Deals with	
Microeconomics deals with various issues like demand, supply, factor pricing, product pricing, economic welfare, production, consumption, and more.	Macroeconomics deals with various issues like national income, distribution, employment, general price level, money, and more.
Business Application	
It is applied to internal issues.	It is applied to environmental and external issues.
Scope	
It covers several issues like demand, supply, factor pricing, product pricing, economic welfare, production, consumption, and more.	It covers several issues like distribution, national income, employment, money, general price level, and more.
Significance	
It is useful in regulating the prices of a product alongside the prices of factors of production (labour, land, entrepreneur, capital, and more) within the economy.	It perpetuates firmness in the broad price level, and solves the major issues of the economy like deflation, inflation, rising prices (reflation), unemployment, and poverty as a whole.
Limitations	
It is based on impractical presuppositions, i.e., in microeconomics, it is presumed that there is full employment in the community, which is not at all feasible.	It has been scrutinised that the misconception of composition' incorporates, which sometimes fails to prove accurate because it is feasible that what is true for aggregate (comprehensive) may not be true for individuals as well.

Management

Management is the science and art of getting things done through people in formally organized groups. It is necessary that every organisation be well managed to enable it to achieve its desired goals. Management includes a number of functions: Planning, organizing, staffing, directing, and controlling. The manager while directing the efforts of his staff communicates to them the goals, objectives, policies, and procedures; coordinates their efforts; motivates them to sustain their enthusiasm; and leads them to achieve the corporate goals.

Managerial Economics

Introduction

Managerial Economics as a subject gained popularity in USA after the publication of the book "Managerial Economics" by Joel Dean in 1951.

Managerial Economics refers to the firm's decision making process. It could be also interpreted as"Economics of Management" or "Economics of Management". Managerial Economics is also called as "Industrial Economics" or "Business Economics".

As Joel Dean observes managerial economics shows how economic analysis can be used in formulating polices.

Meaning&Definition:

In the words of E. F. Brigham and J. L.PappasManagerialEconomics is "the applications of economics theory and methodology to business administration practice".

Managerial Economics bridges the gap between traditional economics theory and real business practices in two days. First it provides a number of tools and techniques to enable the manager to become more competent to take decisions in real and practical situations. Secondly it serves as an integrating course to show the interaction between various areas in which the firm operates.

C. I. Savage & T. R. Small therefore believes that managerial economics "is concerned with business efficiency".

M. H. Spencer and Louis Siegelman explain the "Managerial Economics is the integration of economic theory with business practice for the purpose of facilitating decision making and forward planning by management".

Nature of Managerial Economics

Managerial economics is, perhaps, the youngest of all the social sciences. Since it originates from Economics, it has the basis features of economics, such as assuming that other things remaining the same (or the Latin equivalent ceteris paribus). This assumption is made to simplify the complexity of the managerial phenomenon under study in a dynamic business environment so many things are changing simultaneously. This set a limitation that we cannot really hold

other things remaining the same. In such a case, the observations made out of such a study will have a limited purpose or value. Managerial economics also has inherited this problem from economics.

Further, it is assumed that the firm or the buyer acts in a rational manner (which normally does not happen). The buyer is carried away by the advertisements, brand loyalties, incentives and so on, and, therefore, the innate behaviour of the consumer will be rational is not a realistic assumption. Unfortunately, there are no other alternatives to understand the subject other than by making such assumptions. This is because the behaviour of a firm or a consumer is a complex phenomenon.

The other features of managerial economics are explained as below:

(a) **Close to microeconomics**: Managerial economics is concerned with finding the solutions for different managerial problems of a particular firm. Thus, it is more close to microeconomics.

(b) **Operates against the backdrop of macroeconomics**: The macroeconomics conditions of the economy are also seen as limiting factors for the firm to operate. In other words, the managerial economist has to be aware of the limits set by the macroeconomics conditions such as government industrial policy, inflation and so on.

(c) **Normative statements**: A normative statement usually includes or implies the words 'ought' or 'should'. They reflect people's moral attitudes and are expressions of what a team of people ought to do. For instance, it deals with statements such as 'Government of India should open up the economy. Such statement are based on value judgments and express views of what is 'good' or 'bad', 'right' or ' wrong'. One problem with normative statements is that they cannot to verify by looking at the facts, because they mostly deal with the future. Disagreements about such statements are usually settled by voting on them.

(d) **Prescriptive actions**: Prescriptive action is goal oriented. Given a problem and the objectives of the firm, it suggeststhecourse of actionfrom theavailable alternativesfor optimal solution.If does not merely mention theconcept, it also explains whether the concept can be applied in a given context on not. For instance, the fact that variable costs are marginal costs can be used to judge the feasibility of an export order.

(e) **Applied in nature**: 'Models' are built to reflect the real life complex business situations and these models are of immense help to managers for decision-making. The different areas where modelsare extensively used include inventory control, optimization, project management etc. Inmanagerial economics, we also employ case study methods to conceptualize the problem, identify that alternative and determine the best course of action.

(f) **Offers scope to evaluate each alternative**: Managerial economics provides an opportunity to evaluate each alternative in terms of its costs and revenue. The managerial economist can decide which is the better alternative to maximize the profits

for the firm.

(g) **Interdisciplinary**: The contents, tools and techniques of managerial economics are drawn from different subjects such as economics, management, mathematics, statistics, accountancy, psychology, organizational behavior, sociology and etc.

(h) **Assumptions and limitations**: Every concept and theory of managerial economics is based oncertainassumptionandassuchtheirvalidityisnot universal.Wherethereischangeinassumptions, the theory may not hold good at all.

ScopeofManagerialEconomics:

The scope of managerial economics refers to its area of study. Managerial economics refers to its area of study. Managerial economics, Provides management with a strategic planning tool that can be used to get a clear perspective of the way the business world works and what can be done to maintain profitability in an ever-changing environment. Managerial economics is primarily concerned with the application of economic principles and theories to five types of resource decisions made by all types of business organizations.

a. The selection of product or service to be produced.
b. The choice of production methods and resource combinations.
c. The determination of the best price and quantity combination
d. Promotional strategy and activities.
e. The selection of the location from which to produce and sell goods or service to consumer.

The production department, marketing and sales department and the finance department usually handle these five types of decisions.

The scope of managerial economics covers two areas of decision making

a. Operational or Internal issues
b. Environmental or Externalissues

a.Operational issues:

Operational issues refer to those, which wise within the business organization and they are under the control of the management. Those are:

1. Theory of demand and Demand Forecasting
2. Pricing and Competitive strategy
3. Production cost analysis
4. Resource allocation
5. Profit analysis
6. Capital or Investment analysis
7. Strategic planning

1. Demand Analyses and Forecasting:

A firm can survive only if it is able to the demand for its product at the right time, within the right quantity. Understanding the basic concepts of demand is essential for demand forecasting. Demand analysis should be a basic activity of the firm because many of the other activities of the firms depend upon the outcome of the demand forecast. Demand analysis provides:

1. The basis for analyzing market influences on the firms; products and thus helps in the adaptation to those influences.

2. Demand analysis also highlights for factors, which influence the demand for a product. This helps to manipulate demand. Thus demand analysis studies not only the price elasticity but also income elasticity, cross elasticity as well as the influence of advertising expenditure with the advent of computers, demand forecasting has become an increasingly important function of managerial economics.

2. Pricing and competitive strategy:

Pricing decisions have been always within the preview of managerial economics. Pricing policies are merely a subset of broader class of managerial economic problems. Price theory helps to explain how prices are determined under different types of market conditions. Competitions analysis includes the anticipation of the response of competitions the firm's pricing, advertising and marketing strategies. Product line pricing and price forecasting occupy an important place here.

3. Production and cost analysis:

Production analysis is in physical terms. While the cost analysis is in monetary terms cost concepts and classifications, cost-out-put relationships, economies and diseconomies of scale and production functions are some of the points constituting cost and production analysis.

4. Resource Allocation:

Managerial Economics is the traditional economic theory that is concerned with the problem of optimum allocation of scarce resources. Marginal analysis is applied to the problemof determining the level of output, which maximizes profit. In this respect linear programming techniques has been used to solve optimization problems. In fact lines programming is one of the most practical and powerful managerial decision making tools currently available.

5. Profit analysis:

Profit making is the major goal of firms. There are several constraints here an account of competition from other products, changing input prices and changing business environment hence in spite of careful planning, there is always certain risk involved. Managerial economics deals with techniques of averting of minimizing risks. Profit theory guides in the measurement and management of profit, in calculating the pure return on capital, besides future profit planning.

6. Capital or investment analyses:

Capital is the foundation of business. Lack of capital may result in small size of operations. Availability of capital from various sources like equity capital, institutional finance etc. may help to undertake large-scale operations. Hence efficient allocation and management of capital is one of the most important tasks of the managers. The major issues related to capital analysis are:

1. The choice of investment project
2. Evaluation of the efficiency of capital
3. Most efficient allocation of capital

Knowledge of capital theory can help very much in taking investment decisions. This involves, capital budgeting, feasibility studies, analysis of cost of capital etc.

7. Strategic planning:

Strategic planning provides management with a framework on which long-term decisions can be made which has an impact on the behavior of the firm. The firm sets certain long-term goals and objectives and selects the strategies to achieve the same. Strategic planning is now a new addition to the scope of managerial economics with the emergence of multinational corporations. The perspective of strategic planning is global.

B.Environmental or External Issues:

An environmental issue in managerial economics refers to the general business environment in which the firm operates. They refer to general economic, social and political atmosphere within which the firm operates.

The social environment refers to social structure as well as social organization like trade unions, consumer's co-operative etc. The Political environment refers to the nature of state activity, chiefly states' attitude towards private business, political stability etc.

The environmental or external issues relate managerial economics to macro economic theory while operational issues relate the scope to micro economic theory. The scope of managerial economics is ever widening with the dynamic role of big firms in a society.

Managerial economics relationship with other disciplines:

Many new subjects have evolved in recent years due to the interaction among basic disciplines. While there are many such new subjects in natural and social sciences, managerial economics can be taken as the best example of such a phenomenon among social sciences. Hence it is necessary to trace its roots and relation ship with other disciplines.

1. Relationship with economics:

The relationship between managerial economics and economics theory may be viewed form the point of view of the two approaches to the subject Viz. Micro Economics and Marco Economics. Microeconomics is the study of the economic behavior of individuals, firms and other such micro organizations. Managerial economics is rooted in Micro Economic theory. Managerial Economics makes use to several Micro Economic concepts such as marginal cost, marginal revenue, elasticity of demand as well as price theory and theories of market structure to name only a few. The relationship between managerial economics and economics theory is like that of engineering science to physics or of medicine to biology. Managerial economics has an applied bias and its wider scope lies in applying economic theory to solve real life problems of

enterprises. Both managerial economics and economics deal with problems of scarcity and resource allocation.

2. Management theory and accounting:

Managerial economics has been influenced by the developments in management theory and accounting techniques. Accounting refers to the recording of pecuniary transactions of the firm in certain books. A proper knowledge of accounting techniques is very essential for the success of the firm because profit maximization is the major objective of the firm.

Managerial Economics requires a proper knowledge of cost and revenue information and their classification. A student of managerial economics should be familiar with the generation, interpretation and use of accounting data. The focus of accounting within the firm is fast changing from the concepts of store keeping to that if managerial decision making, this has resulted in a new specialized area of study called "Managerial Accounting".

3. Managerial Economics and mathematics:

The use of mathematics is significant for managerial economics in view of its profit maximization goal long with optional use of resources. The major problem of the firm is how to minimize cost, hoe to maximize profit or how to optimize sales. Mathematical concepts and techniques are widely used in economic logic to solve these problems. Also mathematical methods help to estimate and predict the economic factors for decision making and forward planning.

Mathematical symbols are more convenient to handle and understand various concepts like incremental cost, elasticity of demand etc., Geometry, Algebra and calculus are the major branches of mathematics which are of use in managerial economics. The main concepts of mathematics like logarithms, and exponentials, vectors and determinants, input-output models etc., are widely used. Besides these usual tools, more advanced techniques designed in the recent years viz. linear programming, inventory models and game theory fine wide application in managerial economics.

4. Managerial Economics and Statistics:

Managerial Economics needs the tools of statistics in more than one way. A successful businessman must correctly estimate the demand for his product. He should be able to analyses the impact of variations in tastes. Fashion and changes in income on demand only then he can adjust his output. Statistical methods provide and sure base for decision-making. Thus statistical tools are used in collecting data and analyzing them to help in the decision making process.

Statistical tools like the theory of probability and forecasting techniques help the firm to predict the future course of events. Managerial Economics also make use of correlation and multiple regressions in related variables like price and demand to estimate the extent of dependence of

one variable on the other. The theory of probability is very useful in problems involving uncertainty.

5. Managerial Economics and Operations Research:

Taking effectives decisions is the major concern of both managerial economics and operations research. The development of techniques and concepts such as linear programming, inventory models and game theory is due to the development of this new subject of operations research in the post war years. Operations research is concerned with the complex problems arising out of the management of men, machines, materials and money.

Operation research provides a scientific model of the system and it helps managerial economists in the field of product development, material management, and inventory control, quality control, marketing and demand analysis. The varied tools of operations Research are helpful to managerial economists in decision- making.

6. Managerial Economics and the theory of Decision-making:

The Theory of decision-making is a new field of knowledge grown in the second half of this century. Most of the economic theories explain a single goal for the consumer i.e., Profit maximization for the firm. But the theory of decision-making is developed to explain multiplicity of goals and lot of uncertainty.

As such this new branch of knowledge is useful to business firms, which have to take quick decision in the case of multiple goals. Viewed this way the theory of decision making is more practical and application oriented than the economic theories.

7. Managerial Economics and Computer Science:

Computers have changes the way of the world functions and economic or business activity is no exception. Computers are used in data and accounts maintenance, inventory and stock controls and supply and demand predictions. What used to take days and months is done in a few minutes or hours by the computers. In fact computerization of business activities on a large scale has reduced the workload of managerial personnel. In most countries a basic knowledge of computer science, is a compulsory programme for managerial trainees. To conclude, managerial economics, which is an offshoot traditional economics, has gained strength to be a separate branch of knowledge. It strength lies in it sability to integrate ideas from various specialized subjects to gain a proper perspective for decision-making.

A successful managerial economist must be a mathematician, a statistician and an economist. He must bealso able to combine philosophic methods with historical methods to get the right perspective only then; he will be good at predictions. In short managerial practices with the help of other allied sciences.

DEMANDANALYSIS

Introduction & Meaning:

Demand in common parlance means the desire for an object. But in economics demand is something more than this. According to Stonier and Hague, “Demand in economics means demand backed up by enough money to pay for the goods demanded”. This means that the demand becomes effective only it if is backed by the purchasing power in addition to this there must be willingness to buy a commodity.

Thus demand in economics means the desire backed by the willingness to buy a commodity and the purchasing power topay. Inthe words of “Benham” “The demand for anythingata given price isthe amount of it which will be bought per unit of time at that Price”. (Thus demand is always at a price for a definite quantity at a specified time.) Thus demand has three essentials – price, quantity demanded and time.Without these, demand has to significance in economics.

LAWof Demand:

Law of demand shows the relation between price and quantity demanded of a commodity in the market. In the wordsofMarshall, “the amount demand increases with a fall in price and diminishes witha rise in price”.

A rise in the price of a commodity is followed by a reduction in demand and a fall in priceis followed by an increase in demand, if a condition of demand remains constant.

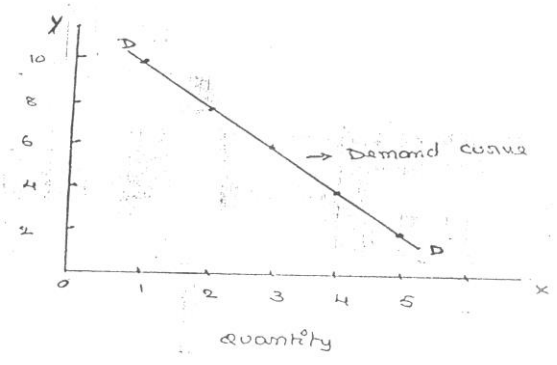
The law of demand may be explained with the help of the following demand schedule.

Demand Schedule.

Price of Appel (In.Rs.)	Quantity Demanded
10	1
8	2
6	3
4	4
2	5

When the price falls from Rs. 10 to 8 quantity demand increases from 1 to 2. In the same way as pricefalls, quantity demand increases on the basis of the demand schedule we can draw the demand curve.

Price



The demand curve DD shows the inverse relation between price and quantity demand of apple . It is downward sloping.

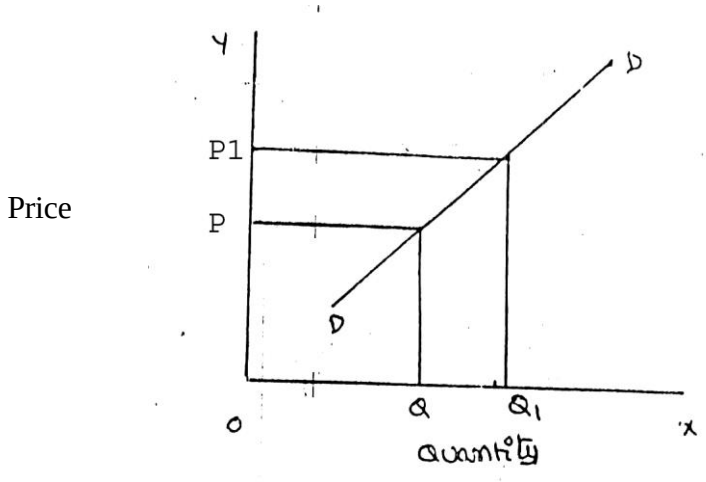
Assumptions:

Law is demand is based on certain assumptions:

1. This is no change in consumer s taste and preferences.
2. Income should remain constant.
3. Prices of other goods should not change.
4. There should be no substitute for the commodity
5. The commodity should not confer at any distinction.
6. The demand for the commodity should be continuous
7. People should not expect any change in the price of the commodity

Exceptional demand curve:

Some times the demand curve slopes upwards from left to right. In this case the demand curve hasa positive slope.



When price increases from OP to Op1 quantity demanded also increases from to OQ1 and vice versa. The reasons for exceptional demand curve are as follows.

1. **Giffen paradox:**

The Giffen good or inferior good is an exception to the law of demand. When the price of an inferior good falls, the poor will buy less and vice versa. For example, when the price of maize falls, the poor are willing to spend more on superior goods than on maize if the price of maize increases, he has to increase the quantity of money spent on it. Otherwise he will have to face starvation. Thus a fall in price is followed by reduction in quantity demanded and vice versa. "Giffen" first explained this and therefore it is called as Giffen's paradox.

2. **Veblen or Demonstration effect:**

'Veblan' has explained the exceptional demand curve through his doctrine of conspicuous consumption. Rich people buy certain good because it gives social distinction or prestige for

example diamonds are bought by the richer class for the prestige it possess. It the price of diamonds falls poor also will buy is hence they will not give prestige. Therefore, rich people may stop buying this commodity.

3. **Ignorance:**
Sometimes, the quality of the commodity is Judge by its price. Consumers think that the product is superior if the price is high. As such they buy more at a higher price.

4. **Speculative effect:**
If the price of the commodity is increasing the consumers will buy more of it because of the fear that it increase still further, Thus, an increase in price may not be accomplished by a decrease in demand.

5. **Fear of shortage:**
During the times of emergency of war People may expect shortage of a commodity. At that time, they may buy more at a higher price to keep stocks for the future.

6. **Necessaries:**
In the case of necessaries like rice, vegetables etc. people buy more even at a higher price.

Factors Affecting Demand:

There are factors on which the demand for a commodity depends. These factors are economic, social as well as political factors. The effect of all the factors on the amount demanded for the commodity is called Demand Function.

These factors are as follows:

1. **Price of the Commodity:**
The most important factor-affecting amount demanded is the price of the commodity. The amount of a commodity demanded at a particular price is more properly called price demand. The relation between price and demand is called the Law of Demand. It is not only the existing price but also the expected changes in price, which affect demand.

2. **Income of the Consumer:**
The second most important factor influencing demand is consumer income. In fact, we can establish a relation between the consumer income and the demand at different levels of income, price and other things remaining the same. The demand for a normal commodity goes up when income rises and falls down when income falls. But in case of Giffen goods the relationship is the opposite.

3. **Prices of related goods**:
The demand for a commodity is also affected by the changes in prices of the related goods also.

Related goods can be of two types:

(i). Substitutes which can replace each other in use;for example,tea and coffee are

substitutes.The change in price of a substitute has effect on a commodity's demand in the same direction in which price changes.The rise in price of coffee shall raise the demand for tea;

(ii). Complementary foods are those which are jointly demanded, such as pen and ink.In such cases complementary goods have opposite relationship between price o f one commodity and the amount demanded for the other.If the price of pens goes up, their demand is less as a result of which the demand for ink is also less.The price and demand go in opposite direction.The effect of changes in price of a commodity on amounts demanded of related commodities is called Cross Demand.

4. **Tastes of the Consumers:**

The amount demanded also depends on consumer's taste. Tastes include fashion, habit, customs, etc. A consumer's taste is also affected by advertisement. If the taste for a commodity goes up, its amount demanded is more even at the same price. This is called increase in demand. The opposite is called decrease in demand.

5. **Wealth:**

The amount demanded of commodity is also affected by the amount of wealth as well as its distribution. The wealthier are the people; higher is the demand for normal commodities. If wealth is more equally distributed, the demand for necessaries and comforts is more. On the other hand, if some people are rich, while the majorities are poor, the demand for luxuries is generally higher.

6. **Population:**

Increase in population increases demand for necessaries of life. The composition of population also affects demand. Composition of population means the proportion of young and old and children as well as the ratio of men to women. A change in composition of population has an effect on the nature of demand for different commodities.

7. **Government Policy:**

Government policy affects the demands for commodities through taxation. Taxing a commodity increases its price and the demand goes down. Similarly, financial help from the government increases the demand for a commodity while lowering its price.

8. **Expectations regarding the future:**

If consumers expect changes in price of commodity in future, they will change the demand at present even when the present price remains the same. Similarly, if consumers expect their incomes to rise in the near future they may increase the demand for a commodity just now.

9. **Climate and weather:**

The climate of an area and the weather prevailing there has a decisive effect on consumer's demand. In cold areas woolen cloth is demanded. During hot summer days, ice is very much in demand. On a rainy day, ice cream is not so much demanded.

10. **State of business:**

The level of demand for different commodities also depend s upon the business conditions in the country. If the country is passing through boom conditions, there will be a marked increase in demand. On the other hand, the level of demand goes down during depression.

ELASTICITYOFDEMAND

Elasticity of demand explains the relationship between a change in price and consequent change in amount demanded.“Marshall” introduced the concept of elasticity of demand. Elasticity of demand shows the extent of change in quantity demanded to a change in price.

In the words of “Marshall”, “The elasticity of demand in a market is great or small according as the amount demanded increases much or little for a given fall in the price and diminishes much or little for a given rise in Price”

Elastic demand: A small change in price may lead to a great change in quantity demanded. In this case, demand is elastic.

In-elastic demand: If a big change in price is followed by a small change in demanded then the demand in “inelastic”.

Types of Elasticity of Demand:

There are three types of elasticity of demand:

1. Price elasticity of demand
2. Income elasticity of demand
3. Cross elasticity of demand

1.Price elasticity of demand:

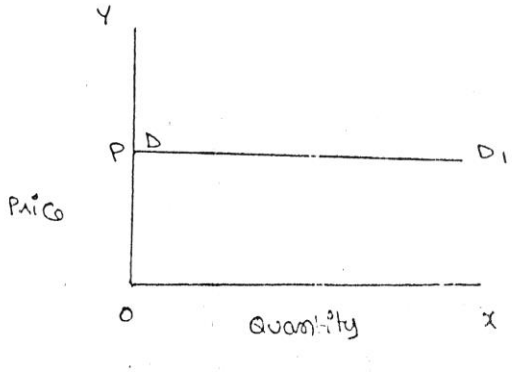
Marshall was the first economist to define price elasticity of demand. Price elasticity of demand measures changes in quantity demand to a change in Price. It is the ratio of percentage change in quantity demanded to a percentage change in price.

$$\textbf{Price elasticity} = \frac{\text{Proportionate change in the quantity demand of commodity}}{\text{Proportionate change in the price of commodity}}$$

There are five cases of price elasticity of demand

A. Perfectly elastic demand:

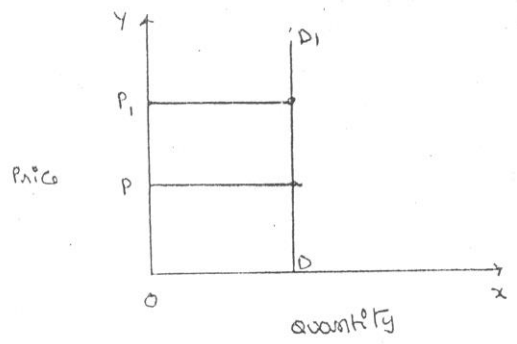
When small change in price leads to an infinitely large change is quantity demand, it is called perfectly or infinitely elastic demand. In this case E=∞



The demand curve DD1 is horizontal straight line. It shows the at "OP" price any amount is demand and if price increases, the consumer will not purchase the commodity.

B. Perfectly Inelastic Demand

In this case, even a large change in price fails to bring about a change in quantity demanded.

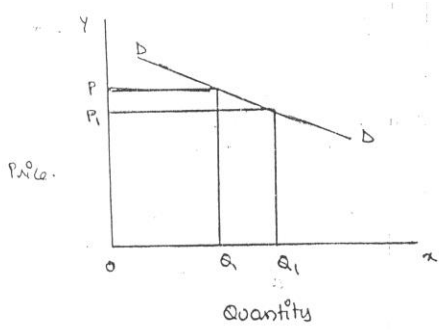


When price increases from 'OP' to 'OP', the quantity demanded remains the same. In other words the response of demand to a change in Price is nil. In this case 'E'=0.

C. Relatively elastic demand:

Demand changes more than proportionately to a change in price. i.e. a small change in price loads to a very big change in the quantity demanded. In this case

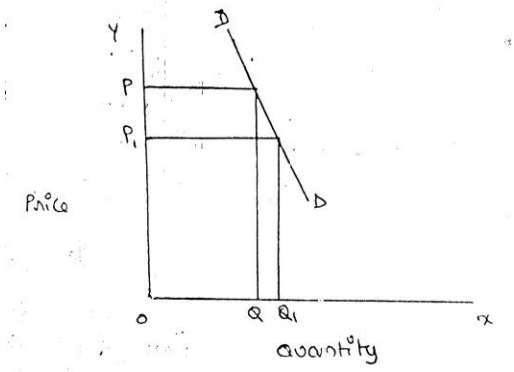
E>1.This demand curve will be flatter.



When price falls from 'OP' to 'OP', amount demanded in crease from "OQ' to "OQ1' which is larger than the change in price.

D. Relatively in-elastic demand.

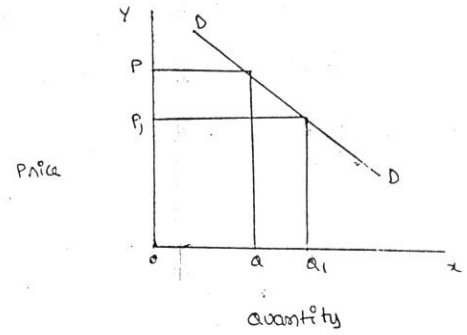
Quantity demanded changes less than proportional to a change in price. A large change in price leads to small change in amount demanded. Here E < 1. Demanded carve will be steeper.



When price falls from "OP'to'OP1amount demanded increases from OQ to OQ1,which is smaller than the change in price.

E. Unit elasticity of demand:

The change in demand is exactly equal to the change in price. When both are equal E=1 and elasticity if said to be unitary.



When price falls from 'OP' to 'OP1' quantity demanded increases from 'OP' to 'OP1', quantity demanded increases from 'OQ' to 'OQ1'. Thus a change in price has resulted in an equal change in quantity demanded so price elasticity of demand is equal to unity.

2. Income elasticity of demand:

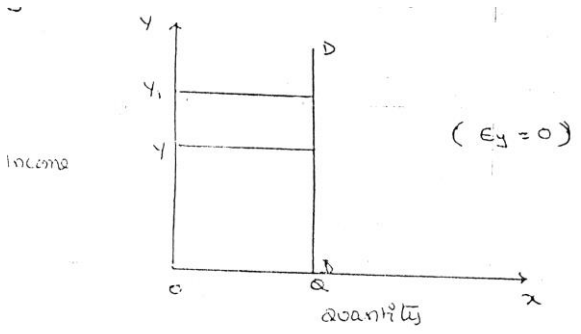
Income elasticity of demand shows the change in quantity demanded as a result of a change in income. Income elasticity of demand may be slated in the form of a formula.

$$\text{Income Elasticity} = \frac{\text{Proportionate change in the quantity demand of commodity}}{\text{Proportionate change in the income of the people}}$$

Income elasticity of demand can be classified into five types.

A. Zero income elasticity:

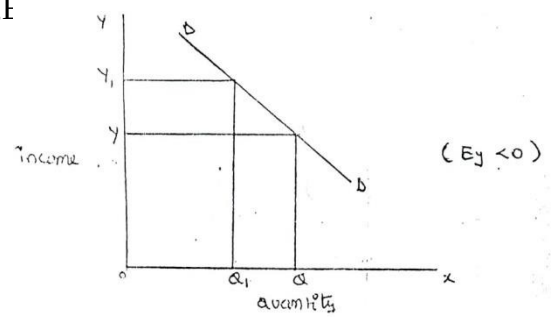
Quantity demanded remains the same, even though money income increases. Symbolically, It can be expressed as Ey=0. It can be depicted in the following way:



AsincomeincreasesfromOYtoOY1,quantitydemandedneverchanges.

B. Negative Income elasticity:

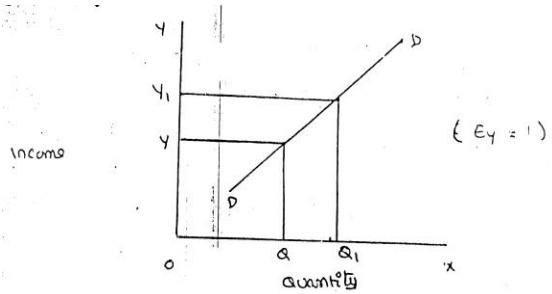
When income increases, quantity demanded falls. In this case, income elasticity of demand is negative. i.e.,E



When income increases from OY to OY1,demand falls from OQ to OQ1.

c.Unit income elasticity:

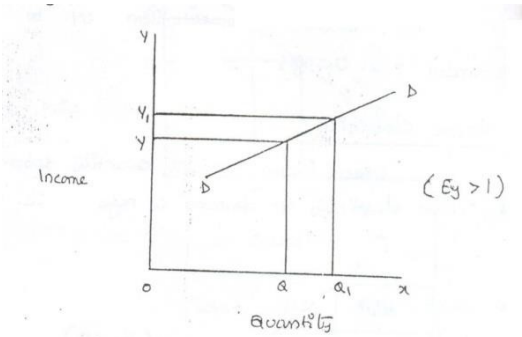
When an increase in income brings about a proportionate increase in quantity demanded, and then income elasticity of demand is equal to one. Ey = 1



When income increases from OY to OY1, Quantity demanded also increases from OQ to OQ1.

d.Income elasticity greater than unity:

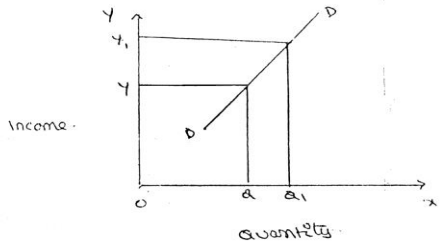
In this case, an increase income brings about a more than proportionate increase in quantity demanded. Symbolically it can be written as Ey > 1.



It shows high-income elasticity of demand.When income increases from OY to OY1, Quantity demanded increases from OQ to OQ1.

E. Income elasticity leas than unity:

When income Increases quantity demanded also increases but less than proportionately.In this Case E<1.



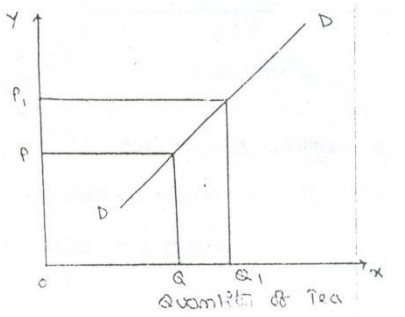
An increase in income from OY to OY, brings what an increase in quantity demanded from OQ to OQ1, But the increase in quantity demanded is smaller than the increase in income. Hence, income elasticity of demand is less than one.

3. Cross elasticity of Demand:

A change in the price of one commodity leads to a change in the quantity demanded of another commodity. This is called a cross elasticity of demand. The formula for cross elasticity of demand is:

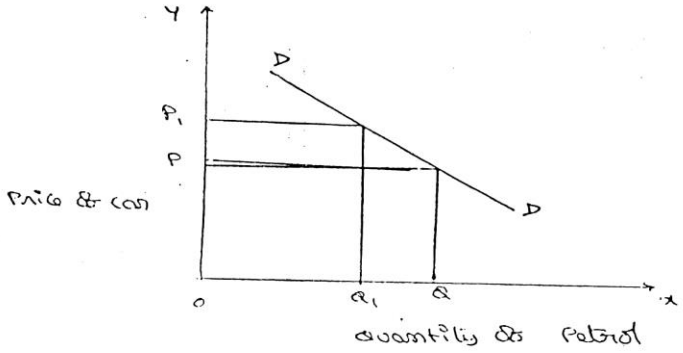
$$\text{Cross elasticity} = \frac{\text{Proportionate changeinthequantitydemandofcommodity“X”}}{\text{Proportionatechangeinthepriceofcommodity“Y”}}$$

a. Incase of substitutes, cross elasticity of demand is positive.Eg:CoffeeandTea
When the price of coffee increases, Quantity demanded of tea increases.Both are substitutes.



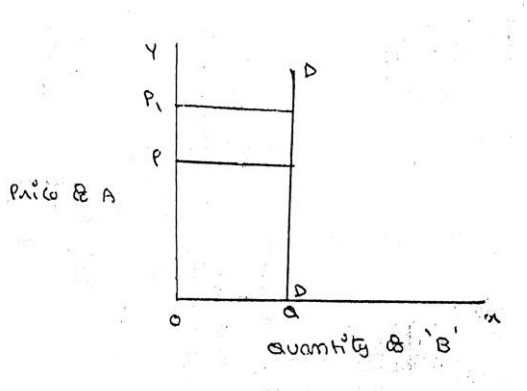
Priceof Coffee

b. Incaseofcompliments,crosselasticityisnegative.If increaseinthepriceofonecommodityleadstoa decrease in the quantity demanded of another and vice versa.



When price of car goes up from OP to OP!, the quantitydemanded of petrol decreases from OQ to OQ!. The cross-demanded curve has negative slope.

c. Incaseofunrelatedcommodities,crosselasticityofdemandediszero.Achangeinthepriceofone commodity will not affect the quantity demanded of another.



Quantitydemandedofcommodity“b”remainsunchangedduetoachangeinthepriceof‘A’,asbothare unrelated goods.

Factorsinfluencingtheelasticityofdemand

Elasticityofdemanddependsonmanyfactors.

1. **Natureofcommodity:**
Elasticity or in-elasticity of demand depends on the nature of the commodity i.e. whether a commodity is a necessity,comfort or luxury, normally; the demand for Necessaries like salt, rice etc is inelastic. Onthe other band, the demand for comforts and luxuries is elastic.

2. **Availabilityofsubstitutes:**
Elasticity of demand depends on availability or non-availability of substitutes. In case of commodities, which have substitutes, demand is elastic, but in case of commodities, which have no substitutes, demand is in elastic.

3. **Variety of uses:** If a commodity can be used for several purposes, than it will have elastic demand. i.e. electricity. On the other hand, demanded is inelastic for commodities, which can be put to only one use.

4. **Postponementofdemand:**
If the consumption of a commodity can be postponed, than it will have elastic demand. On the contrary, ifthe demand for a commodity cannot be postpones, than demand is in elastic. The demand for rice or medicine cannot be postponed, while the demand for Cycle or umbrella can be postponed.

5. **Amountofmoneyspent:**
Elasticity of demand depends on the amount of money spent on the commodity. If the consumer spends a smaller for example a consumer spends a little amount on salt and matchboxes. Even when price of salt or matchbox goes up, demanded will not fall. Therefore, demand is in case of clothing a consumer spends alarge proportion of his income and anincrease in price will reduce his demandfor clothing. Sothe demandis elastic.

6. **Time:**
Elasticity of demand varies with time. Generally, demand is inelastic during shortperiod and elastic during the long period. Demand is inelastic during short period because the consumers do not have enough time to know about thechange isprice. Even if they are awareof the pricechange,theymay not immediately switch over to a new commodity, as they are accustomed to the old commodity.

7. **Rangeof Prices:**
Range of prices exerts an important influence on elasticity of demand. At a very high price, demand isinelastic because a slight fall in price will not induce the people buy more. Similarly at a low price alsodemand is inelastic. This is because at a low price all those who want to buy the commodity would have bought it and a further fall in price will not increase the demand. Therefore, elasticity is low at very him and very low prices.

ImportanceofElasticityofDemand:

The concept of elasticity of demand is of much practical importance.

1. **Pricefixation:**
Each seller under monopoly and imperfect competition has to take into account elasticity of demand whilefixing the price for his product. If the demand for the product is inelastic, he can fix a higher price.

2. **Production:**
Producers generally decide their production level on thebasis of demand for the product. Hence elasticity of demand helps the producers to take correct decision regarding the level of cut put to be produced.

3. **Distribution:**
Elasticity of demand also helps in the determination of rewards for factors of production. For example, if the demand forlabour isinelastic, trade unionswill be successfulin raising wages.It isapplicable tootherfactors of production.

4. **InternationalTrade:**
Elasticity of demand helps in finding out the terms of trade between two countries. Terms of trade refers to the rate at which domestic commodity is exchanged for foreign commodities. Terms of trade depends upon the elasticity of demand of the two countries for each other goods.

5. **PublicFinance:**
Elasticity of demand helps the government in formulating tax policies. For example, for imposing tax on a commodity, the Finance Minister has to take into account the elasticity of demand.

6. **Nationalization:**
Theconceptofelasticityofdemandenablesthegovernmenttodecideaboutnationalizationofindustries.

DemandForecasting

Introduction:

The information about the future is essential for both new firms and those planning to expand the scale oftheir production. Demand forecasting refers to an estimate of future demand for the product.

It is an 'objective assessment of the future course of demand". In recent times, forecastingplays an important role in business decision-making. Demand forecasting has an important influence on production planning. It is essential for a firm to produce the required quantities at the right time.

It is essential to distinguish between forecasts of demand and forecasts of sales. Sales forecast is important for estimating revenue cash requirements and expenses. Demand forecasts relate to production, inventory control, timing, reliability of forecast etc. However, there is not much difference between these two terms.

Typesofdemand Forecasting:

Based on thetime span andplanning requirements of business firms, demand forecastingcan beclassified in to 1. Short-term demand forecasting and

2.Long–termdemand forecasting.

1. **Short-termdemandforecasting:**
Short-termdemandforecasting islimitedtoshort periods,usuallyforoneyear.Itrelatestopoliciesregarding sales, purchase, price and finances. It refers to existing production capacity of the firm. Short-termforecasting is essential for formulating is essential for formulating a suitable price policy. If the business people expect of rise in the prices of raw materials of shortages, they may buy early. This price forecasting helps in sale policy formulation. Production may be undertaken based on expected sales and not on actual sales. Further, demand forecasting assists in financial forecasting also. Prior information about productionand sales is essential to provide additional funds on reasonable terms.

2. **Long–termforecasting:**
Inlong-termforecasting,thebusinessmenshouldnowaboutthelong-termdemandfortheproduct.Planning of a new plant or expansion of an existing unit dependson long-term demand. Similarly a multi product firm must take into account the demand for different items. When forecast are mode covering long periods, the probability of error is high. It

is vary difficult to forecast the production, the trend of prices and the nature of competition. Hence quality and competent forecasts are essential.

Prof. C. I. Savage and T.R. Small classify demand forecasting into time types. They are 1. Economicforecasting, 2. Industry forecasting, 3. Firm level forecasting. Economics forecasting is concerned with the economics, while industrial level forecasting is used for inter-industry comparisons and is being supplied by trade association or chamber of commerce. Firm level forecasting relates to individual firm.

Methodsofforecasting:

Several methods are employed for forecasting demand. All these methods can be grouped under survey method andstatistical method. Survey methods andstatistical methods arefurther subdividedinto different categories.

1. SurveyMethod:

Under this method, information about the desires of the consumer and opinion of exports are collected by interviewing them.Surveymethodcanbedividedintofourtype'sviz.,Optionsurveymethod;expert opinion; Delphi method and consumers interview methods.

a. Opinionsurveymethod:

This method is also known as sales-force composite method (or) collective opinion method. Under this method, the company asks its salesman to submit estimate of future sales in their respective territories.Since the forecasts of the salesmen are biased due totheir optimistic or pessimistic attitude ignorance about economic developments etc. theseestimates areconsolidated, reviewed and adjusted by thetop executives. In case of wide differences, an average is struck to make the forecasts realistic.

This method is more useful and appropriate because the salesmen are more knowledge. They can be important source of information. They are cooperative. The implementation within unbiased or their basic can be corrected.

B.Expertopinionmethod:

Apart from salesmen and consumers, distributors or outside experts may also e used for forecasting. In the United States ofAmerica, the automobile companies get sales estimates directly from their dealers.Firms in advanced countries make use of outside experts for estimating future demand. Various public and private agencies all periodic forecasts of short or long term business conditions.

C.Delphi Method:

A variant of the survey method is Delphi method. It is a sophisticated method to arrive at a consensus. Under this method, a panel is selectedto give suggestionsto solve the problems in hand.Both internal and external experts can be the members of the panel. Panel members one kept apart from each other and express their views in ananonymous manner.There is also a coordina tor who acts as an intermediaryamongthepanelists. He prepares the questionnaire andsends itto the panelist. Attheend ofeachround, heprepares asummary report. On the basis of the summary report the panel members have to give suggestions. This method has been used in the area of technological forecasting. It has proved more popular in forecasting. It has provided more popular in forecasting non-economic rather than economic variables.

D.Consumersinterviewmethod:

In this method the consumers are contacted personally to know about their plans and preference regarding the consumption of the product. A list of all potential buyers would be drawn and each buyer will be approached and asked how much he plans to buy the listed product in future. He would be asked the proportion in which he intends to buy. This method seems to be the most ideal method for forecasting demand.

2. **StatisticalMethods:**

Statistical method is used for long run forecasting. In this method, statistical and mathematical techniquesare used to forecast demand. This method relies on post data.

a. **Timeseriesanalysisortrendprojectionmethods:**

A well-established firm would have accumulated data. These data are analyzed to determine the nature of existing trend. Then, this trend is projected in to the future and the results are used as the basis for forecast. This is called as time series analysis. This data can be presented either in a tabular form or a graph. In thetime series post data of sales are used to forecast future.

b. **BarometricTechnique:**

Simple trend projections are not capable of forecasting turning paints. Under Barometric method, present

eventsareusedtopredictthedirectionsofchangeinfuture.Thisisdonewiththehelpofeconomicsand

statisticalindicators.Thoseare(1)ConstructionContractsawardedforbuildingmaterials(2)Personalincome

(3) Agricultural Income.(4) Employment(5) Gross national income(6) Industrial Production (7) BankDeposits etc.

***c.* Regressionandcorrelationmethod:**

Regression and correlation are used for forecasting demand. Based on post data the future data trend is forecasted. If the functional relationship is analyzed with the independent variable it is simple correction. When there are several independent variables it is multiple correlation. In correlation we analyze the nature of relation between the variables while in regression; the extent of relation between the variables isanalyzed. The results are expressed in mathematical form. Therefore, it is called as econometric model building. The main advantage of this method is that it provides the values of the independent variables from within the model itself.

UTILITY ANALYSIS

Consumers are the ones who make the majority of consumption decisions. A consumer is someone who buys goods and services to fulfil demands. He makes choices about the kinds of items to be bought to fulfil his desires. The primary goal is to maximise satisfaction from the goods and services he purchases with his income. To achieve the highest level of satisfaction, a consumer must follow certain rules or principles since resources are limited in nature in comparison to limitless demands. The two basic approaches for studying customer behaviour are the Cardinal Utility approach and Ordinal Utility Approach.

Cardinal Utility Approach

People consume different goods and services to maximise their level of satisfaction. To achieve this, it is required to ascertain the level of satisfaction attained from a certain commodity. The Cardinal Utility Approach employs the concept of "**Utility**" to determine the level of satisfaction.

Concept

The characteristic of a good or service that allows it to fulfil the needs of consumers is comprehended as its "utility." It is the fulfilment—actual or anticipated—that results from the consumption of a good or service. Utility is a relative concept, this means that it differs from individual to individual, from location to location, and from period to period. A utility is its ability to satisfy a need.

Simply put, **Utility** is the want satisfying power of a commodity.
It is considered to be measured in terms of cardinal numbers such as 1, 2, 3, 4, and so on. These are known as utils or units of utility. Thus, four utils are more significant than three utils, three utils are more significant than two utils, and so on.

According to classical economics, utility can be measured similarly to how one would measure one's height or weight. According to economists, the utility can be quantified in

cardinal terms. It is possible to quantify the utility that an individual obtains through the consumption of commodities and services. However, there was no standardised method of calculating utility; so the economists came up with a hypothetical unit of measurement called **Util**.
Utils are imaginary and psychological units that are used to measure satisfaction obtained from the consumption of a certain quantity of a commodity.

Let's say you just finished a cake and a bar of chocolate. You decide to label 15 utils as cake-derived utils. How many utils should be assigned to the chocolate now? Less than 15 utils would be given to chocolate if someone didn't enjoy it as much. On the other hand, if one prefers chocolate more, then more than 15 utils will be assigned.

Utility: Measure

As utils vary from individual to individual, it cannot be taken as a standard unit for measurement. Therefore, various economists suggested that utility should be measured in monetary terms. Simply put, they suggested that utility can be measured in terms of price or money a consumer is willing to pay.

In the above example, let us assume that 1 util is equal to ₹1. Now, the utility derived from the consumption of cake will be ₹15, which is known as the value of utility in terms of money. The major advantage of using the monetary value of utility instead of utils is that monetary value allows easy comparison between the price paid for the commodity and the utility derived from it.

1. Total Utility

Total Utility determines the overall satisfaction obtained after consuming every single unit of that commodity. It is the total utility derived from the consumption of all units of a commodity.

For example, if 2 units of a commodity are consumed and the 1^{st} unit provides 20 utils of satisfaction and the 2^{nd} unit provides 14 utils of satisfaction, then the total utility will be 20+ 14 utils = 34 utils. If 3^{rd} unit of a commodity is consumed and it provides 10 utils of satisfaction, then the total utility will be 20+14+10 = 44 utils.
Total Utility can be calculated as:
$TU_n = U_1 + U_2 + U_3 + \ldots\ldots\ldots\ldots\ldots\ldots + U_n$
Where,

TU_n = Total utility from n units of a given commodity
$U_1, U_2, U_3, \ldots\ldots\ldots U_n$ = Utility derived from 1^{st}, 2^{nd}, 3^{rd},……..n^{th} unit
n = Number of units consumed

2. Marginal Utility

Marginal Utility is the utility obtained from the last unit of a product or service. It refers to the additional utility on account of the consumption of an additional unit of a commodity.

In the above example, when 3 units of a commodity provide the satisfaction of 44 utils, and 2 units of a commodity provide satisfaction of 34 utils, then the marginal utility will be 44 – 34 = 10 utils. The additional 10 utils derived from the 3^{rd} unit are marginal utility.
MU can be calculated as:

$MU_n = TU_n – TU_{n-1}$
Where,

MU_n = Marginal utility from n units of a given commodity
TU_n = Total utility from n units of a given commodity
TU_{n-1} = Total utility from n-1 units
n = Number of units consumed

Calculate MU
MU is the change in TU caused by the consumption of one extra unit. MU can also be calculated when the change in units consumed is more than one.

This results in another formula for calculating TU.

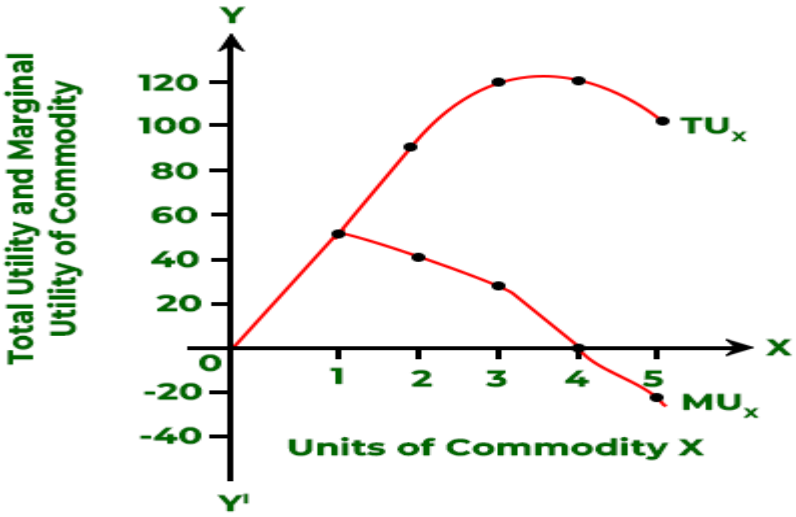
$TU_n = MU_1 + MU_2 + MU_3 + \ldots\ldots\ldots\ldots\ldots\ldots + MU_n$, or
$TU = \sum MU$

The below table illustrates the estimation of MU and TU.

Consumption of Commodity X (units)	**TU_x**	**MU^X**
1	50	**50** (50 – 0 = 50)
2	90	**40** (90 – 50 = 40)
3	120	**30** (120 – 90 = 30)
4	120	**0** (120 – 120 = 0)
5	100	**-20** (100 – 120 = -20)

The above table shows that:
(i) $MU_n = TU_n – TU_{n-1}$
Marginal utility of an n^{th} unit of a commodity =Total utility from n units – Total utility from (n-1) units
(ii) $TU = \Sigma MU$

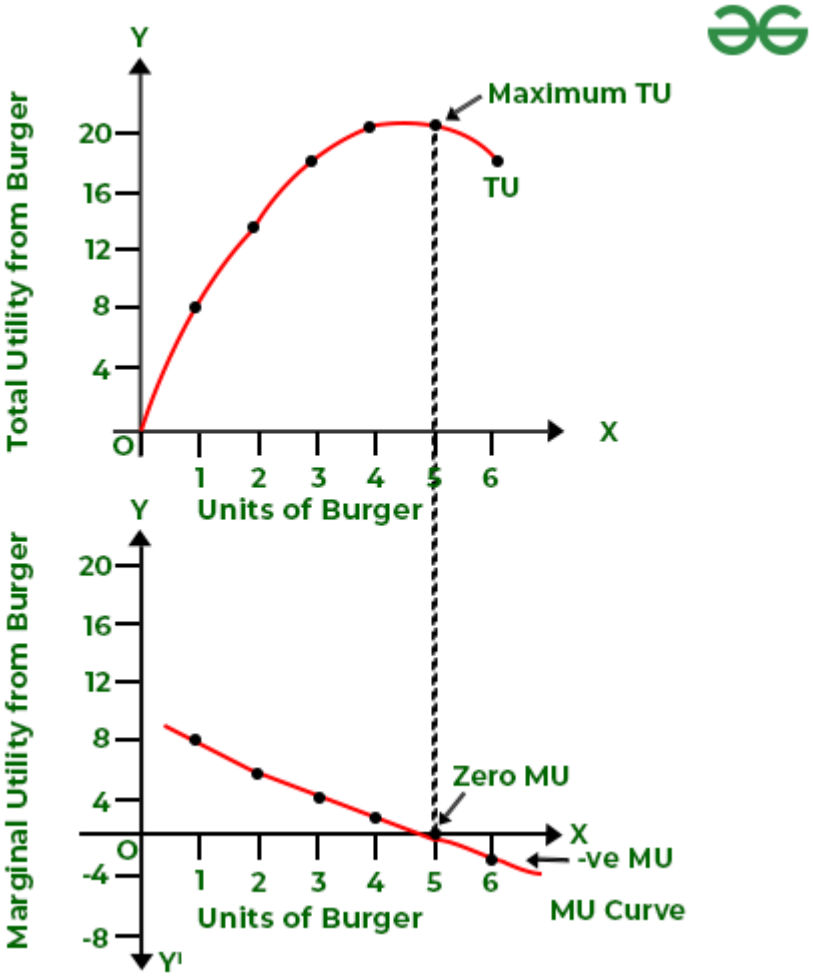
= 50 + 40 + 30 + 0 + (-20)
= 100



Relationship between TU and MU

The relationship between TU and MU can be explained with the help of the following schedule and diagram.

Burger (Units)	Total Utility (TU)	Marginal Utility (MU)
0	0	–
1	8	8 – 0 = 8
2	14	14 – 8 = 6
3	18	18 – 14 = 4
4	20	20 – 18 = 2
5	20	20 – 20 = 0
6	18	18 – 20 = -2



Observation:

1. TU increases with an increase in the consumption of a commodity and as long as MU is positive. In this case, TU increases till 4th burger. Till 4 burgers, TU increases at a diminishing rate as MU from each successive burger diminishes.
2. When TU is at its maximum point, MU becomes zero; i.e., when the 5th burger is consumed. This point is known as the **point of satiety.**
3. Ultimately, when the consumption of a commodity is increased beyond the point of satiety, TU starts falling as MU becomes negative.

Basic Limitation of Utility Analysis

The fundamental problem in utility analysis is that it makes the incorrect assumption that utility can only be stated in cardinal numbers. it implies that utils like 1, 2, and 3 can never accurately represent usefulness. When two things are consumed concurrently, satisfaction can be compared at best. It is challenging to assess in figures. Due to this drawback, utility analysis is shown to have minimal application in describing consumer equilibrium.

Ordinal Utility Approach

This approach states that utility can not be expressed in cardinal numbers like 1,2,3, and 4, rather it can only be ranked as high or low. The concept of cardinal utility was discarded by modern economists. According to them, utility is a psychological experience that cannot be

quantified in absolute terms. They believe that consumers can order different combinations of goods and services to their preferences.

For example, if a consumer consumes two goods like Tea and Coffee, then he can say that:

1. He prefers tea over coffee;
2. He prefers coffee over tea;
3. Both are equally preferable and both of them provide the same level of satisfaction. This indicates that he is indifferent between tea and coffee.