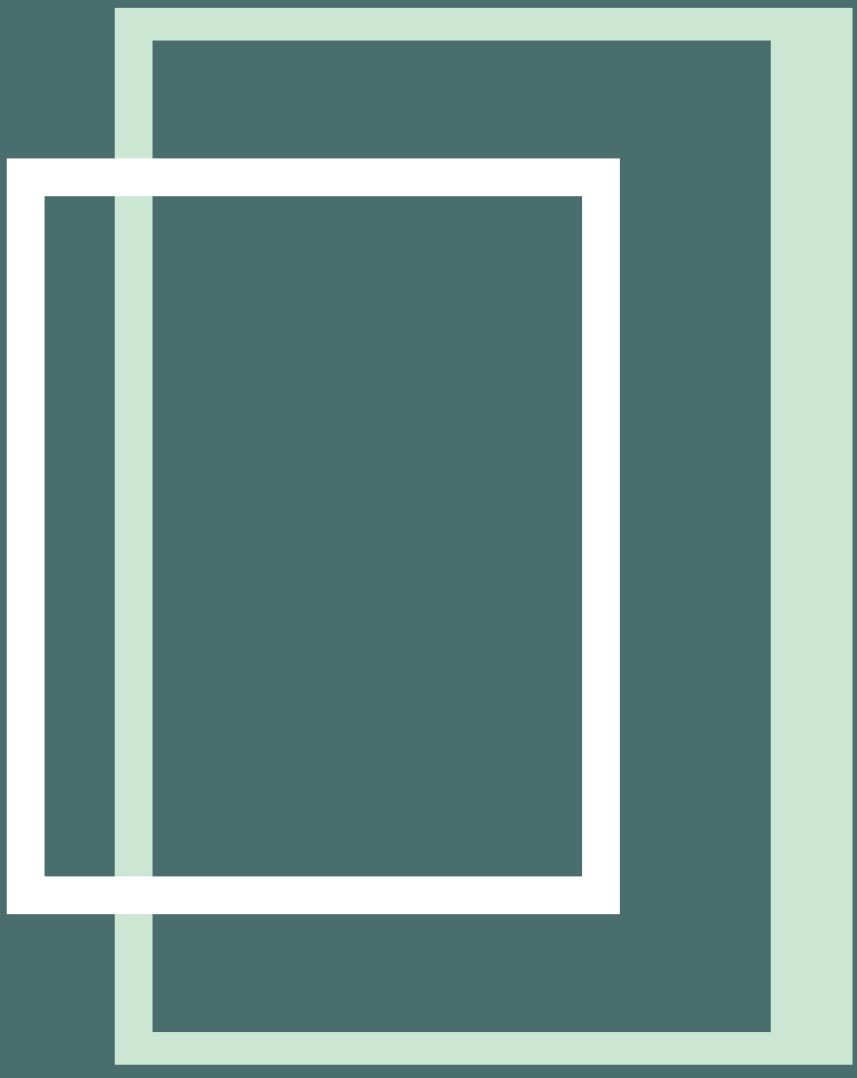
PRINCIPLES OF ENGINEERING ECONOMICS AND COST ANALYSIS



SHIPRA MEHTA

Principles of Engineering Economics and Cost Analysis

Principles of Engineering Economics and Cost Analysis

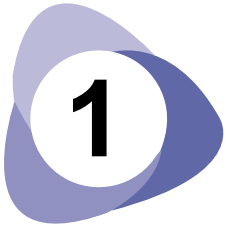
Shipra Mehta

THE INFO LIBRARY

Published by The InfoLibrary,
4/21B, First Floor, E-Block,
Model Town-II,
New Delhi-110009, India

Principles of Engineering Economics and Cost Analysis
Shipra Mehta
ISBN: 978-93-5496-443-5

Table of Contents



BASIC ECONOMICS

Definition of economics - nature and scope of economic science - nature and scope of managerial economics - basic terms and concepts - goods - utility - value - wealth - factors of production - land - its peculiarities - labour - economies of large and small scale - consumption - wants - its characteristics and classification - law of diminishing marginal utility - relation between economic decision and technical decision.

1.1 Definition of economics

Economics is the study of the production and consumption of goods and the transfer of wealth to produce and obtain those goods. Economics explains how people interact within markets to get what they want or accomplish certain goals. Since economics is a driving force of human interaction, studying it often reveals why people and governments behave in particular ways.

There are two main types of economics:

1. Macroeconomics

2. Microeconomics.

Microeconomics focuses on the actions of individuals and industries like the dynamics between buyers and sellers, borrowers and lenders.

Macroeconomics on the other hand takes a much broader view by analyzing the economic activity of an entire country or the international marketplace.

1.1.1 Nature and scope of economic science

The nature and scope of economics are related to the study of wealth or human behaviour or of scarce resources. The scope is very wide and includes the subject matter of economics whether economics is a science or an art or whether it is positive or normative science.**Wealth and Welfare Connotations:**

Wealth and welfare connotations are segregated into the classical view of Adam Smith and Neo classical view of Marshall. First let us discuss classical view and the relating contemporaries.**The Classical view and Contemporaries:**

The Classical Economist Adam Smith defines Economics as the science of Wealth. He defines as"nature and cause of wealth of nations" whereby it"proposes to enrich people and sovereign". The classical view is misleading and has serious defects. This view of conception of economics as a science of wealth which laid exclusive stress on material wealth. Material wealth is the object of desires of man. Wealth was considered to be the stop in itself. By stressing on the word"Material Wealth" Economist Adam Smith narrowed the scope of Economics by excluding all material activities which are related to the production of non-material goods and services such as Engineers, Accountants etc. Now after bearing in mind the classical view of Adam Smith we are going to see the Neo Classical View by Economist Marshall and its contemporaries. **Neo-Classical View and Contemporaries:**

Alfred Marshall led neo-classical school which placed all the economists a reputable position among social science. He emphasised on a man's welfare. Wealth was observed as the basis of human welfare not stop in itself but a means to a stop. According to Marshall"Political Economy or Economics is a study of mankind in the ordinary business of life. It inspects that part of individual and social accomplishment which is most intimately associated with the achievement and with the use of the material conditions of well being. It is on the one side a study of riches and on the other are more significant side a part of study of man. The contemporaries are it excludes activities of socially disagreeable and non-standard persons like thieves, misers etc, non-economic activities and activities having dishonorable ends are excluded from the study of economics.**Scarcity definition of Robbins:**

According to Robbins,"Economics is the science which studies human behaviour as a relationship between ends and scarce means which have alternative uses." It was Lord Robbins who exposed the rational discrepancy and insufficiencies of other economists' definitions.**Growth Oriented Definition:**

Modern Age is the age of economic development. Its key purpose is to enhance social wellbeing and progress the standard of living of the people by getting rid of poverty, redundancy, disparity of income and wealth, malnutrition etc. of the realm. Hence the financial development is the essential point of all economic policies.

Scope of Economics:

While discussing the subject-matter and definition of Economics, we have said something about the scope of Economics too. But there are a few more things which we have to discuss in considering the scope of Economics. ‘Scope’ means the sphere of study. We have to consider what Economics studies and what lies beyond it.

The scope of Economics will be brought out by discussing the following:

(a) The subject-matter of Economics.

(b) Economics is a Social Science.

(c) Whether Economics is a Science or an Art?

(d) If Economics is a science whether it is a positive science or a normative science?

1.1.2 Nature and scope of managerial economics

Definition of Managerial Economics:

"Managerial Economics is economics applied in decision making. It is a special branch of economics bridging the gap between abstract theory and managerial practice." – Haynes, Mote and Paul.

"Business Economics consists of the use of economic modes of thought to analyse business situations." - McNair and Meriam

"Business Economics (Managerial Economics) is the integration of economic theory with business practice for the purpose of facilitating decision making and forward planning by management." - Spencer and Seegelman.

"Managerial economics is concerned with application of economic concepts and economic analysis to the problems of formulating rational managerial decision." – Mansfield.

Nature of Managerial Economics:

The primary function of management executive in a business organisation is decision making and forward planning.

Decision making and forward planning go hand in hand with each other. Decision making means the process of selecting one action from two or more alternative courses of action. Forward planning means establishing plans for the future to carry out the decision so taken.

The problem of choice arises because resources at the disposal of a business unit (land, labour, capital and managerial capacity) are limited and the firm has to make the most profitable use of these resources.

The decision making function is that of the business executive, He takes the decision which will ensure the most efficient means of attaining a desired objective say profit maximisation. After taking the decision about the particular output pricing, capital, raw-materials and power etc. are prepared. Forward planning and decision-making thus go on at the same time.

A business manager's task is made difficult by the uncertainty which surrounds business decision-making. Nobody can predict the future course of business conditions. He prepares the best possible plans for the future depending on past experience and future outlook and yet he has to go on revising his plans in the light of new experience to minimise the failure. Managers are thus engaged in a continuous process of decision-making through an uncertain future and the overall problem confronting them is one of adjusting to uncertainty.

In fulfilling the function of decision-making in an uncertainty framework economic theory can be pressed into service with considerable advantage as it deals with a number of concepts and principles which can be used to solve or at least throw some light upon the problems of business management. E.g profit, demand, cost, pricing, production, competition, business cycles, national income etc. The way economic analysis can be used towards solving business problems constitutes the subject-matter of Managerial Economics.

Thus in brief we can say that Managerial Economics is both a science and an art.

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.

These divisions of business economics constitute its subject matter. Recently managerial economists have started making increased use of Operation Research methods like Linear programming, inventory models, Games theory, queuing up theory etc., have also come to be regarded as part of Managerial Economics.

1.Demand Analysis and Forecasting: A business firm is an economic organisation which is engaged in transforming productive resources into goods that are to be sold in the market. 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 and 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.

1.2 Basic terms and concepts,Goods - utility - value - wealth - factors of production - land - its peculiarities - labour - economies of large and small scale - consumption - wants - its characteristics and classification

Wants - Simply the desires of citizens. Wants are different from needs as we will see below. Wants are a means of expressing a perceived need. Wants are broader than needs.

Needs - These are basic requirements for survival like food,water and shelter. In recent years we have seen a percieved shift of certain items from wants to needs. Telephone service to many is a need.

Scarcity - The fundamental economic problem facing all societies. Essentially it is how to satisfy unlimited wants with limited resources. This is the issue that plagues all government and peoples. How do we conquer the issue of scarcity? Many people have thought they had the answer (see Marx, Smith, Keynes, etc.) but the issue of scarcity still exists.

Factors of Production/Resources - These are those elements that a nations has its disposal to deal with the issue of scarcity. How efficiently these are used determines the measure of success a nation has. They are

Land - natural resources, etc.

Capital - investment money.

Labor - the work force, size, education, quality, work ethic.

Entrepreneurs - inventive and risk taking spirit. This is a rather new addition to a traditional list.

The "Three Basic Economic Questions" - these are the questions all nations must ask when dealing with scarcity and efficiently allocating their resources.

What to produce?

How to produce?

For whom to produce?

Economics - Economics is the study the production and distribution of goods and services it is the study of human efforts to satisfy unlimited wants with limited resources.

Opportunity Cost - the cost of an economic decision. The classic example is "guns or butter." What should a nation produce butter, a need or guns, a want? What is the cost of either decision? If we choose the guns the cost is the butter. If we choose butter the cost is the guns. Nations but always

deal with the questions faced by opportunity cost. It is a matter of choices. Resources are limted thus we cannot meet every need or want.

Free products: Air, sunshine are the items so plentiful no one could own them.

Economists are interested in "economic products" - goods and services that are useful, relatively scarce and transferable.

Good: tangible commodity. These are bought, sold, traded and produced.

Consumer Goods: Goods that are intended for final use by the consumer.

Capital Goods: Items used in the creation of other goods. Factory machinery, trucks, etc.

Durable Goods: Any good that lasts more than three years when used on a regular basis.

Non Durable Goods: Any item that lasts less than 3 years when used on a regular basis.

Services: Work that is performed for someone. Service cannot be touched or felt.

Consumers: People who use these goods and services.

Conspicuous Consumption: Use of a good or service to impress others.

Value: An assignment of worth. The assignment is usually based upon the utility (usefulness) or scarcity of the item (supply and demand).

Utility: Capacity to be useful.

Paradox of value: Assignment of the highest value to those things we need the least, like water and the highest things we often don't need at all like diamonds. Why do we do this? Good question. I do not have an answer.

Wealth: The sum collection of those economic products that are tangible, scarce and useful.

Productivity:

The ability to produce vast amounts of goods in an efficient manner. The American capitalist economy is productive because:

We use our resource efficiently.

We specialize to increase efficiency and productivity.

We invest in Human Capital (our labor pool)

1.3 Law of diminishing marginal utility

Utility refers to the amount of satisfaction a person gets from consumption of a certain item.and marginal utility refers to the addition made to total utility, we get after consuming one more unit.

An individual's wants are unlimited in number yet each individual's want is satiable. Because of this, the more we have a commodity, the less we want to have more of it.This law state that as the amount consumed of a commodity increases, the utility derived by the consumer from the additional units, i.e marginal utility goes on decreasing.

The law of diminishing marginal utility explains the downward sloping demand curve

Definition

According to Marshall, “The additional benefit a person derives from a given increase of his stock of a thing diminishes with every increase in the stock that he already has”

Assumptions:

All the units of a commodity must be same in all respects.

The unit of the good must be standard.

There should be no change in taste during the process of consumption.

There must be continuity in consumption.

There should be no change in the price of the substitute goods.

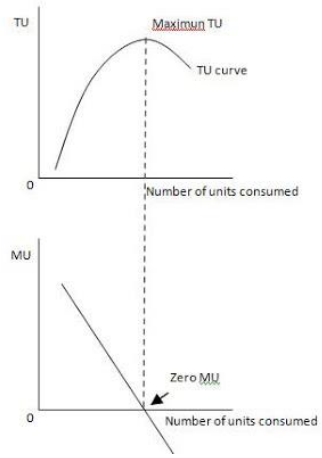
Explanation:

As more and more quantity of a commodity is consumed, the intensity if desire decreases and also the utility derived from the additional unit.

Suppose a person eats Bread and 1st unit of bread gives him maximum satisfaction. When he will eat 2nd bread his total satisfaction would increase. But the utility added by 2nd bread is less then the 1st bread. His total utility and marginal utility can be put in the form of a following schedule.

Slices of Bread	Total utility	Marginal utility
0	0	-
1	70	70
2	110	40
3	130	20
4	140	10
5	145	5
6	140	-5

Plotting the above data on a graph gives



Here from the MU curve we can see that MU is declining as consumer consumes more of the commodity.

When TU is maximum MU is Zero.

After that TU starts declining and MU becomes negative.

Exceptions:

Money.

Hobbies and Rare Things.

Liquor and Music.

Things of Display.

Importance:

Basis of Law of demand.

Basis of Consumption Expenditure.

The basis of Progressive Taxation.

1.4 Relation between economic decision and technical decision.

Managerial economics has often been defined as economics applied in decision-making. In this connection we can make a distinction between the concepts of economic decision and technical decision.

Economic decision refers to:

(i) The decision taken by any producer regarding the volume of output to be produced during any particular time period to maximise its profit. The producer either wants to maximise its output given its cost constraint or minimise the cost given the targeted output.

(ii) The decision taken by any consumer regarding the quantities of commodities to be purchased to maximise his/her utility (The want-satisfying power of a commodity is considered as its utility.) The consumer wants to maximise his/her utility subject to his/her budget constraint.

(iii) The decision taken by the government to invest in such activities which maximise social welfare.

On the other hand the technical decision refers to:

(i) The decision taken by any engineer regarding the application of any particular technique to complete a job or a project work within a given time period.

(ii) The decision taken by any architecture regarding the technicalities of a design-plan for say building a housing complex.

(iii) The decision taken by any entrepreneur (even a farmer) with regard to the proportion in which some inputs are be applied in any production process without any consideration for the prices of those inputs (say the proportion of water and chemical fertiliser to be applied in any cultivation work), etc.

Thus if any engineering firm designs a thermal power project the technical decision of the firm would become relevant in this process. However if the same firm makes a cost benefit analysis with an objective to maximise its profit or minimise its cost the economic decision becomes relevant.

Similarly when a farmer chooses a particular proportion of high yielding varieties of seeds, chemical fertilisers and irrigation-water for carrying out the cultivation process the technical decision becomes relevant. But the market prices of those inputs and the given income of the poor farmer may not allow him to achieve that ‘technical decision’. Hence when we take into account the given

input prices and the available fund to be invested in the production process the economic decision becomes more relevant.

Table: Basic Differences between Economic and Technical Decisions

Economic decision	Technical decision
1. It is more concerned with the theoretical aspect of a production or consumption decision. 2. It is concerned with optimisation behaviour of a firm subject to cost or fund constraint.	1. It is more concerned with the technical or application aspects of any productive activity. 2. It is concerned with achieving a targeted output with technologically efficient dose of inputs (disregarding the input prices).

2

DEMAND AND SCHEDULE

Demand - demand schedule - demand curve - law of demand - elasticity of demand - types of elasticity - factors determining elasticity - measurement - its significance - supply - supply schedule - supply curve - law of supply - elasticity of supply - time element in the determination of value - market price and normal price - perfect competition - monopoly - monopolistic competition.

2.1 Demand - demand schedule - demand curve

Demand :

The desire for a commodity of an individual or a group will be called their demand when they are able to pay for that commodity. That is demand is desire with account to pay.

In Benham's words, "Demand for anything at a given price is the amount of it which will be bought per unit of time at that price."

Another definition of demand is "By demand we mean the various quantities of a given commodity or service which the consumers would buy in a market in a given period of time at various prices or at various incomes or at various prices of related goods."

Demand Schedule:

The demand schedule illustrates the relationship between price and quantity demanded by using a table of figures. The demand schedule generally consists of two columns: one for the price of a product and one for the quantity demanded at that price. The price column displays different price levels arrayed from lowest to highest or vice versa while the quantity demanded column displays the quantity of that good or service demanded at each price level. The demand schedule for most products will show a reduction in quantity demanded as the price increases.

Demand schedule can be categorized into two types which are shown in figure:

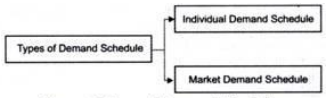


Figure-2: Types of Demand Schedules

The two types of demand schedules are explained as follows:

i. Individual demand schedule:

Refers to a tabular representation of quantity of products demanded by an individual at different prices and time.

Table-1 shows the individual demand schedule of product a purchased by Mr. Ram:

Table-1: Individual Demand Schedule

Price of A (per kg in ₹)	Quantity Demanded (per week in kgs)
10	15
15	10
20	8
25	4
30	2

Following are the characteristics of individual demand schedule:

a. Demonstrates the effect of changing price on the buying behavior of customers rather than change in the demand for a product.

b. Expresses the disparity in demand with the difference in the product's price.

c. Represents that at higher prices the quantity demanded reduces and vice versa.

ii. Market demand schedule:

Shows a tabular representation of quantity demanded in aggregate by individuals at different prices and time. Therefore, it demonstrates the demand of a product in the market at different prices. The market demand schedule can be derived by aggregating the individual demand schedules.

Table-2 represents the market demand schedule prepared through the individual demand schedule of three individuals:

Table-2: Market Demand Schedule

Price of A (per unit in ₹)	Individual Demand (per day)			Market Demand (per day)
	X	Y	Z	
4	1	3	4	8
3	3	4	5	12
2	4	5	6	15
1	5	9	9	23

Market demand schedule also demonstrates an inverse relation between the quantity demanded and price of a product.

Demand Curve:

The demand curve is a visual form of the demand schedule. Economists depict the demand schedule on a two-dimensional graph consisting of a vertical axis representing price and a horizontal axis representing quantity demanded. The vertical axis displays different price levels from highest to lowest, while the horizontal axis displays different levels of demand. The apex of the vertical and horizontal axis has a value of zero for both quantity and price. Mankind notes that the demand curve for most products slopes downward indicating an increase in demand as the price declines.

2.1.1 Law of demand

A microeconomic law states that all other factors being equal, as the price of a good or service increases, consumer demand for the good or service will decrease, and vice versa. The law of demand says that the higher the price, the lower the quantity demanded, because consumers' opportunity cost to acquire that good or service increases and they must make more trade offs to acquire the more expensive product.

Assumptions:

1. Tastes and preferences of the consumer remain constant.

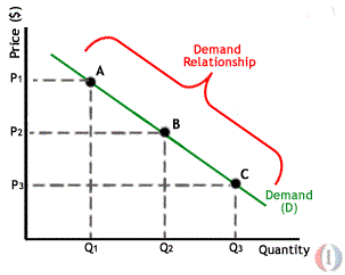
2. No change in the income of the consumer.

3. Prices of related goods do not change.

4. Consumers do not except any change in the price of the commodity in the near future.

BREAKING DOWN 'LAW OF DEMAND'

The chart below depicts the law of demand using a demand curve, which is always downward sloping. Each point on the curve (A, B, C) reflects a direct correlation between quantity demanded (Q) and price (P). So, at point A, the quantity demanded will be Q1 and the price will be P1, and so on.



The law of demand is so intuitive that you may not even be aware of all the examples around you.

When shirts go on sale, you might buy three instead of one. The quantity that you demand increases because the price has fallen.

When plane tickets become more expensive, you're less likely to travel by air and more likely to choose the less expensive options of driving or staying home. The amount of plane tickets that you demand decreases to zero because the cost has gone up.

The law of demand summarizes the effect price changes have on consumer behavior. For example, a consumer will purchase more pizzas if the price of pizza falls. The opposite is true if the price of pizza increases. John might demand 10 pizzas if they cost $10 each, but only 7 pizzas if the price rises to $12, and only 4 pizzas if the price rises to $20.

The law of demand is one of the most fundamental concepts in economics. It works with the law of supply to explain how market economies allocate resources and determine the prices of goods and services.

2.1.2 Elasticity of demand - types of elasticity - factors determining elasticity - measurement - its significance

Elasticity of Demand refers to the degree of responsiveness of quantity demanded to the changes in the determinants of demand . There are mainly three quantifiable determinants of demand:-

Price of the good.

Income of the consumer.

Price of the related goods.

Types of Elasticity Of Demand

Elasticity of demand can be of three types

1. Price Elasticity of Demand.

2. Income Elasticity of Demand.

3. Cross Elasticity of Demand.

Price elasticity of Demand:

Concept Of Elasticity of demand Alfred Marshall introduced the concept of elasticity in 1890 to measure the magnitude of percentage change in the quantity demanded of a commodity to a certain percentage change in its price or the income of the buyer or in the prices of related goods .In this section we look at the sensitivity of demand for a product to a change inthe product's own price.Since Price Elasticity of Demand is predominantly used in economic analysis it is alternatively referred to as Elasticity of Demand.

Definition: Price Elasticity of demand is the degree of responsiveness of demand to a change in its price.In technical terms it is the ratio of the percentage change in demand to the percentage change in price. Thus, E_p = Pecentage change in quantity demanded/Percentage change in price.In mathematical terms it can be represented as: $Ep = (\Delta q/\Delta p)\ (p/q)$.

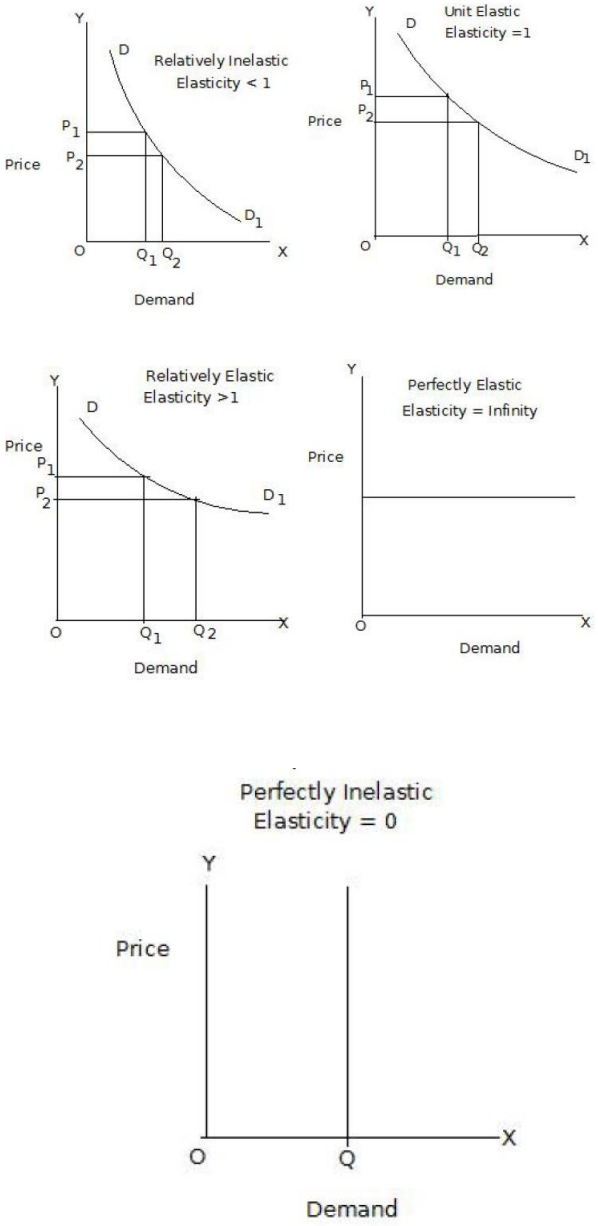
From the definition it follows that

when percentage change in quantity demanded is greater than the percentage change in price then, price elasticity will be greater than one and in this case demand is said to be elastic.

when percentage change in quantity demanded is less than the percentage change in price then, price elasticity will be less than one and in this case demand is said to be inelastic.

when percentage change in quantity demanded is equal to the percentage change in price then price elasticity will be equal to one and in this case demand is said to be unit elastic.

Diagrammatic representation Of Price Elasticity Of Demand:



Methods of Measuring Price Elasticity of Demand:

There are four methods of measuring elasticity of demand they are the percentage method, point method, arc method and expenditure method.

(a) The Percentage Method:

The price elasticity of demand is measured by its coefficient

(Ep). This coefficient (Ep) measures the percentage change in the quantity of a commodity demanded resulting from a given percentage change in its price. Thus

$$E_p = \frac{\%\ change\ in\ q}{\%\ change\ in\ p} = \frac{\Delta q / q}{\Delta p / p} = \frac{\Delta q}{\Delta p} \times \frac{p}{q}$$

Where q refers to quantity demanded, p to price and A to change. If Ep> 1, demand is elastic. If Ep <1 demand is inelastic, and if Ep =1, demand is unitary elastic. With this formula, we can compute price elasticities of demand on the basis of a demand schedule.

Table. 1: Demand Schedule

Combination	Price (Rs.) Per Kg. of X	Quantity Kgs. of X
A	6	0
B	5	10
C	4	20
D	3	30
E	2	40
F	1	50
G	0	60

Let us first take combinations B and D.

(i)Suppose the price of commodity X falls from Rs. 5 per kg. to Rs. 3 per kg. and its quantity demanded increases from 10 kgs. to 30 kgs. Then

$$E_p = \frac{\Delta q}{\Delta p} \times \frac{p}{q} = \frac{(30-10)}{(3-5)} \times \frac{5}{10} = \frac{20}{-2} \times \frac{5}{10} = -5 \text{ or } >1.$$

This shows elastic demand or elasticity of demand greater than unitary.

Note:

The formula can be understood like this:

$\Delta q = q_2 - q_1$ where q_2 is the new quantity (30 kgs.) and q_2 the original quantity (10 kgs.).

$\Delta P = p_2 - p_1$ where p_2 is the new price (Rs.3) and p the original price (Rs. 5).

In the formula p refers to the original price (p_1) and q to original quantity (q_1). The opposite is the case in example (ii) below where Rs. 3 becomes the original price and 30 kgs. as the original quantity.

(ii) Let us measure elasticity by moving in the reverse direction. Suppose the price of X rises from Rs. 3 per kg. to Rs. 5 per kg. and the quantity demanded decreases from 30 kgs. to 10 kgs. Then

$$E_p = \frac{\Delta q}{\Delta p} \times \frac{p}{q} = \frac{(10-30)}{(5-3)} \times \frac{3}{30} = \frac{-20}{2} \times \frac{3}{30} = -1$$

This shows unitary elasticity of demand. Notice that the value of E_p in example (i) Differs from that in example (ii) Depending on the direction in which we move. This difference in the elasticities is due to the use of a different base in computing percentage changes in each case. Now consider combinations D and F.

(iii) Suppose the price of commodity X falls from Rs. 3 per kg to Re. 1 per kg. and its quantity demanded increases from 30 kgs. to 50 kgs. Then

$$E_p = \frac{\Delta q}{\Delta p} \times \frac{p}{q} = \frac{(50-30)}{(1-3)} \times \frac{3}{30} = \frac{20}{2} \times \frac{3}{30} = -1$$

This is again unitary elasticity.

(iv) Take the reverse order when the price rises from Re. 1 per kg. to Rs. 3 per kg. And the quantity demanded decreases from 50 kgs. to 30 kgs. Then

$$E_p = \frac{\Delta q}{\Delta p} \times \frac{p}{q} = \frac{(30-50)}{3-1} \times \frac{1}{50} = \frac{-20}{2} \times \frac{1}{50} = -\frac{1}{5} < 1$$

This shows inelastic demand or less than unitary.

The value of E_p again differs in this example than that given in example (iii) for the reason stated above.

(b) The Point Method:

Prof. Marshall devised a geometrical method for measuring elasticity at a point on the demand curve. Let RS be a straight line demand curve in figure. If the price falls from PB (= OA) to MD (= OC), the quantity demanded increases from OB to OD.

Elasticity at point P on the RS demand curve according to the formula is:

$E_p = \Delta q/\Delta p \times p/q$.

Where Δq represents change in quantity demanded Δp changes in price level while p and q are initial price and quantity levels.

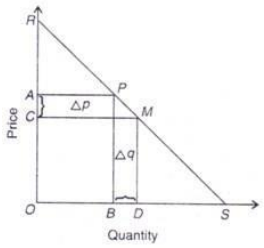


Fig. 2

From figure

Δq = BD = QM

Δp = PQ

P = PB

q = OB

Substituting these values in the elasticity formula:

E_p = QM/PQ× PB/OB

Moreover QM/PQ × BS/PB.

[<PQM=<PBS are similar Δs]

BS/PB× PB/OB = BS/OB

Since Δ PBS and ΔROS are similar,

Ep at point p = BS/OB = OA/AR = PS/PR =Lower Segment/Upper Segment.

With the help of the point method, it is easy to point out elasticity at any point along a demand curve. Suppose that the straight line demand curve DC in figure. 3 is 6 centimeters. Five points L, M, N, P and Q are taken on this demand curve. The elasticity of demand at each point can be known with the help of the above method. Let point N be in the middle of the demand curve. So elasticity of demand at point.

N = CN (Lower Segment) / ND (Upper Segment) = 3/3 = 1 (Unity)

Elasticity of demand at point

M = CM/MD = 5/1 = 5 or > 1.

(Greater than Unity)

Elasticity of demand at point

L = CL/LD = 6/0 = ∞ (infinity).

Elasticity of demand at point

P = CP/PD = 1/5 = (Less than Unity).

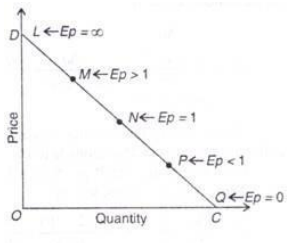
Elasticity of demand at point

Q = CQ/QD = 0/6 = 0(Zero).

We arrive at the conclusion that at the mid-point on the demand curve the elasticity of demand is unity. Moving up the demand curve from the mid-point, elasticity be-comes greater. When the demand curve touches the Y- axis elasticity is infinity. Factor at any point below the midpoint towards the X-axis will show elastic demand. Elasticity becomes zero when the demand curve touches the X -axis.

(c) The Arc method:

We have studied the measure-ment of elasticity at a point on a demand curve. But when elasticity is measured between two points on the same de-mand curve, it is known as arc elasticity. In the words of Prof. Baumol, "Arc elasticity is a measure of the average responsiveness to price change exhibited by a demand curve over some finite stretch of the curve."



Any two points on a demand curve make an arc. The area between P and M on the DD curve in Figure is an arc which measures elasticity over a certain range of price and quantities. On any two points of a demand curve the elasticity coefficients are likely to be different depending upon the method of computation. Consider the price-quantity combinations P and M as given in Table. 2.

Table 2: Demand Schedule:

Point	Price (Rs)	Quantity (Kg)

P	8	10
M	6	12

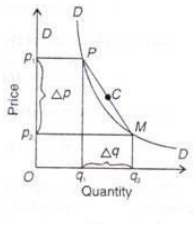
If we move from P to M, the elasticity of demand is

EP = ΔQ/ΔP × p/q = (12 – 10) / (6-8) × 8/10 = 2/-2 × 8/10 = 4/5

If we move in the reverse direction from M to P, then

(10-20) / (6-8) × 6/12 = -2/2 × 6/12 = -1/2

Thus the point method of measuring elasticity at two points on a demand curve gives different elasticity coefficients because we used a different base in computing the percentage change in each case.



To avoid this discrepancy, elasticity for the arc (PM in Figure) is calculated by taking the average of the two prices [(p_1 + p_2)1/2] and the average of the two quantities [(q_1 + q_2)1/2]. The formula for price elasticity of demand at the mid-point (C in Figure 4) of the arc on the demand curve is

$$E_p = \frac{\frac{\Delta q}{(q_1+q_2)^{1/2}}}{\frac{\Delta p}{(p_1+p_2)^{1/2}}} = \frac{\Delta q}{(q_1+q_2)^{1/2}} \times \frac{(p_1+p_2)^{1/2}}{\Delta p} = \frac{\Delta q}{\Delta p} \times \frac{p_1+p_2}{q_1+q_2}$$

On the basis of this formula, we can measure arc elasticity of demand when there is a movement either from point P to M or from M to P.

From P to M at point P, p_1 =8, q_1 = 10, and at point M, p_2 = 6, q_2 = 12.

Applying these values we get

E_P = Δq/Δp × p_1 + p_2 / q_1 + q_2 = (12-10) / 8-6 × (8 + 6) × (10+12) = 2/-2 × 14/22 = -7/11

From M to P at point M, P_1= 6, q_1 = 12 and at point, p_2 = 8, q_2 = 10.

Now we have E_P = (10-12) / (8-6) × (6+8)/12+10) = -2/2 × 14/22 = -7/11.

Thus whether we move from M to P or P to M on the arc PM of the DD curve, the formula for arc elasticity of demand gives the same numerical value. The closer the two points P and M are the more accurate is the measure of elasticity on the basis of this formula. If the two points which form the arc on the demand curve are so close that they almost merge into each other the numerical value of arc elasticity equals the numerical value of point elasticity.

(d) The Total Outlay Method:

Marshall evolved the total outlay, or total revenue or total expenditure method as a measure of elasticity. By comparing the total expenditure of a purchaser both before and after the change in price it can be known whether his demand for a good is elastic, unity or less elastic.

Total outlay is price multiplied by the quantity of a good purchased:

Total Outlay = Price x Quantity Demanded. This is explained with the help of the demand schedule in Table 3.

Table. 3 : Total Outlay Method

Price Rs. per Kg.	*Quantity in Kgs.*	*TE in Rs*	*Ep*
(1)	(2)	(1×2)=3	(4)
9	2	18	
8	3	24	> 1
7	4	28	
6	5	30	
5	6	30	= 1
4	7.5	30	
3	8	24	
2	9	18	< 1
1	10	10	

(i) Elastic Demand:

Demand is elastic, when with the fall in price the total expenditure increases and with the rise in price the total expenditure decreases. Table.3 shows that when the price falls from Rs. 9 to Rs. 8, the total expenditure increases from Rs. 18 to Rs. 24 and when price rises from Rs. 7 to Rs. 8, the total expenditure falls from Rs. 28 to Rs. 24. Demand is elastic (Ep>1) in this case.

(ii) Unitary Elastic Demand:

When with the fall or rise in price, the total expenditure remains unchanged, the elasticity of demand is unity. This is shown in the table when with the fall in price from Rs. 6 to Rs. 5 or with the rise in price from Rs. 4 to Rs. 5, the total expenditure remains unchanged at Rs. 30, i.e., Ep =1.

(iii) Less Elastic Demand:

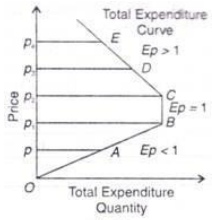
Demand is less elastic if with the fall in price, the total expenditure falls and with the rise in price the total expenditure rises. In Table 3 when the price falls from Rs. 3 to Rs. 2, total expenditure falls from Rs. 24 to Rs 18, and when the price rises from Re. 1 to Rs. 2, the total expenditure also rises from Rs. 10 to Rs. 18. This is the case of inelastic or less elastic demand, Ep< 1.

Table 4 summarises these relationships:

Total 4: Total Outlay Method

Price	*TE*	*Ep*
Falls	Rises	>1
Rises	Falls	
Falls	Unchanged	=1
Rises	Unchanged	
Falls	Falls	<1
Rises	Rises	

The measurement of elasticity of demand in terms of the total outlay method is explained in Figure where we divide the relationship between price elasticity of demand and total expenditure into three stages:



In the first stage when the price falls from OP_4 to OP_3 and to OP_2 respectively the total expenditure rises from P_4 E to P_3D and P_2C respectively. On the other hand when the price in-creases from OP_2 to OP_3 and OP_4 the total expenditure decreases from P_2 C to P_3 D and P_4 E respectively.

Thus EC segment of total expenditure curve shows elastic demand (E_p> 1).

In the second stage, when the price falls from OP_2 to OP_1 or rises from OP_1 to OP_2 the total expenditure equals, P_2 C = P_1B and the elasticity of demand is equal to the unity (E_p =1).

In the third stage when the price falls from Op_1 to Op_2 the total expenditure also falls from P_1 B to PA. Thus with the rise in price from OP to Op_1 the total expenditure also increases from PA to P_1B and the elasticity of demand is less than unity (E_p< 1).

Factors Affecting Price Elasticity of Demand:

Elasticity of demand for any commodity is determined or influenced by a number of factors which are discussed as under:

(1) Nature of the Commodity:

The elasticity of demand for any commodity depends upon the category to which it belongs, i.e., whether it is a necessity, comfort or luxury. The demand for necessaries of life or conventional necessaries is generally less elastic. For example, the demand for necessaries like food, salt, matches, etc. does not change much with rise or fall in their prices. Similar is the case with commodities which are required at the time of marriage, death ceremonies, etc.

The demand for necessaries of efficiency and for comforts is moderately elastic because with the rise or fall in their prices the demand for them decreases or increases moderately. On the other

hand the demand for luxuries is more elastic because with a small change in their prices there is a large change in their demand. But the demand for prestige goods, like jewels, rare coins, rare stamps, paintings by Tagore or Picasso, etc. is inelastic because they possess unique utility for the buyers who are prepared to buy them at all costs.

(2) Substitutes:

Commodities having substitutes have more elastic demand because with the change in the price of one commodity the demand for its substitute is immediately affected. For example if the price of coffee rises the demand for coffee will decrease and that for tea will increase and vice versa. But the demand for commodities having no good substitutes is inelastic.

(3) Variety of Uses:

The demand for a commodity having composite demand or variety of uses is more elastic. Such commodities are coal, milk, steel, electricity, etc. For example coal is used for cooking and heating, for power generation in factories, in locomotives, etc. If there is a slight fall in the price of coal its demand will increase from all quarters.

On the other hand a rise in its price will bring a considerable decrease in demand in less important uses and in more important uses efforts will also be made to economise its use as in railways and factories. Thus the overall effect will be a reduction in demand. A commodity which cannot be put to more than one use has less elastic demand.

(4) Joint Demand:

There are certain commodities which are jointly demanded such as car and petrol, pen and ink, bread and jam, etc. The elasticity of demand of the second commodity depends upon the elasticity of demand of the major commodity. If the demand for cars is less elastic, the demand for petrol will also be less elastic. On the other hand if the demand for say bread is elastic the demand for jam will also be elastic.

(5) Deferred Consumption:

Commodities whose consumption can be deferred have an elastic demand. This is the case with durable consumer goods like cloth, bicycle, fan, etc. If the price of any of these articles rises people will postpone their consumption. As a result their demand will decrease and vice versa.

(6) Habits:

People who are habituated to the consumption of a particular commodity, like coffee, tea or cigarette of a particular brand the demand for it will be inelastic. We find that the prices of coffee, tea and cigarettes increase almost every year but there has been little effect on their demand because people are in the habit of consuming them.

(7) Income Groups:

The elasticity of demand also depends on the income group to which a person belongs. Persons who belong to the higher income group their demand for commodities is less elastic. It is immaterial to a rich man whether the price of a commodity has fallen or risen and hence his demand for the commodity will be unaffected.

On the other hand the demand of persons in lower income groups is generally elastic. A rise or fall in the prices of commodities will reduce or increase the demand on their part. But this does not apply in the case of necessities the demand for which on the part of the poor is less elastic.

(8) Proportion of Income Spent:

If the consumer spends a small proportion of his income on a commodity at a time the demand for that commodity is less elastic because he does not bother much about small expenditure. Such commodities are shoe polish, pen, pencil, thread, needle, etc. But commodities which entail a large proportion of the income of the consumer, the demand of them is elastic, such as bicycle, watch, etc.

(9) Level of Prices:

The level of prices also influences the elasticity of demand for commodities when the price level is high, the demand for commodities is elastic and when the price level is low and the demand is less elastic.

(10) Time Factor:

Time factor plays an important role in influencing the elasticity of demand for commodities. The shorter the time in which the consumer buys a commodity, the lesser will be the elasticity of demand tor that product. On the other hand the longer the time which the consumer takes in buying a commodity the higher will be the elasticity of demand for that product.

Prof. Stigler mentions three possible reasons for the long-period elasticity being higher than the short-period elasticity. In the long run the consumer has a better knowledge of the price changes takes time to readjust his budget and might change his consumption pattern due to possible technological changes.

(11) Brand:

The price of demand for a given brand of product may be elastic. If its price increases people turn towards the other brands easily. This is substitution effect for example if the price of the Hero bicycle increases the consumer will buy the Atlas bicycle.

(12) Recurring Demand:

Goods which have recurring demand their prices are more elastic than the goods which are not demanded time and again.

(13) Distribution of Income:

If a country has equal distribution of income and wealth the demand for majority of goods is elastic because there are more middle class people whose purchasing power is almost equal.

Significance of Price Elasticity of Demand

Price Elasticity of Demand is useful in the following ways:

1. Useful for Business:

It enables the business in general and the monopolists in particular to fix the price.

Studying the nature of demand the monopolist fixes higher prices for those goods which have inelastic demand and lower prices for goods which have elastic demand. In this way this helps him to maximize his profit.

2. Fixation of Prices:

It is very useful to fix the price of jointly supplied goods. In the case of joint products like paddy and straw, the cost of production of each is not known. The price of each is then fixed by its elastic and inelastic demand.

3. Helpful to Finance Minister:

It helps the Finance Minister to levy tax on goods. After levying taxes more and more on goods which have inelastic demand, the Government collects more revenue from the people without causing inconvenience to the people. Moreover it is also useful for the planning.

4. Fixation of Wages:

It guides the producers to fix wages for labourers. They fix high or low wages according to the elastic or inelastic demand for the labour.

5. In the Sphere of International Trade:

It is of greater significance in the sphere of international trade. It helps to calculate the terms of trade and the consequent gain from foreign trade. If the demand for home product is inelastic, the terms of trade will be profitable to the home country.

6. Paradox of Poverty:

It explains the paradox of poverty in the midst of plenty. A bumper crop instead of bringing prosperity may result in disaster if the demand for it is inelastic. This is specially so if the products are perishable and not storable.

7. Effect on Employment:

The effect of machines on employment opportunities depends on elasticity of demand for the goods produced by such machines. In the initial stage use of such machines cause unemployment and prices will also fall. But when demand for such commodities is more elastic then fall in prices will generate more increase in its demand.

As a result demand will stimulate greater production and hence more employment. If demand for commodities produced by these machines is inelastic then even fall in price will not increase demand as well as employment.

8. Significant for Government Economic Policies:

The knowledge of elasticity of demand is very important for the government in such matters as controlling of business cycles removing inflationary and deflationary gaps in the economy. Similarly for price stabilization and the purchase and sale of stocks information about elasticity of demand is most useful.

9. Incidence of Taxation:

Incidence of tax lies on the person who ultimately pays the tax. The incidence is on the buyer, if demand is perfectly inelastic. He will go on buying as much as before despite the price rise. Thus, the government has to keep the watch on the ultimate burden of the tax which depends on the elasticity of demand of the commodity taxed. If necessaries which have less elastic demand are taxed the burden will fall more on the poor sections of society. Therefore, principle of justice in taxation is based on elasticity of demand.

10. Changes in Rate of Exchange:

Rate of exchange between two currencies can be changed through devaluation or overvaluation of one currency in relation to other currencies. A country while deciding for such a course of action will take into consideration the elasticity of demand for its exports and imports. If the government devalues the currency without considering the elasticity of demand for its exports and imports it may not be able to correct unfavorable balance of payments. Under these circumstances the demand both for its exports and imports turns out to be inelastic.

11. Joint Products:

The concept of elasticity of demand plays an important role in determining the price of joint products. In case of joint products like skin and meat of goat, separate costs are not known. The producer will be guided mostly by demand and its nature while fixing his price. For instance when goat is bought it is not kept in mind the separate costs of skin and meat.

When the seller sells the skin and meat, the seller keeps in mind the elasticity of demand of skin and meat. If elasticity of demand for meat is less elastic in that case the price of meat will be higher. On the other hand if elasticity of demand for skin is more elastic in that case the price of the skin will be low and vice versa.

12. International Trade:

The concept of elasticity of demand also plays a significant role in the international trade or the terms of trade. It is the nature of demand which is helpful in determining the amount of gain being enjoyed by different countries. The terms of trade would be favourable in case of those countries whose exports are of the nature of more elastic demand. On the other hand the terms of trade would be unfavourable if the exports of a country are of the nature of less elastic demand.

13. Market forms:

The concept of elasticity of demand is also useful is knowing the different market forms. If cross elasticity of demand is infinite, in that case there is perfect competition in the market. If cross elasticity is zero (or $E_c = 0$) it is a case of absolute or pure monopoly. If cross elasticity of demand is less than one (or $E_c < 1$), in that case there is relative monopoly. And if cross elasticity of demand is greater than one (or $E_c > 1$), in that case, there is monopolistic competition or imperfect competition.

14. Determination of Price of Public Utilities:

This concept is significant in the determination of the prices of public utility services. Economic welfare of the society largely depends upon the cheap availability of the essential products like water, electricity, cooking gas, transportation etc. For such commodities, demand is inelastic and these should be controlled by the government.

The government will distribute these products at fair price. Therefore. Government helps to fix the prices of necessities of life. Thus elasticity of demand is a very important tool of analysis and it plays an important role in economic analysis.

'Income Elasticity Of Demand'

A measure of the relationship between a change in the quantity demanded for a particular good and a change in real income. Income elasticity of demand is an economics term that refers to the sensitivity of the quantity demanded for a certain product in response to a change in consumer incomes. The formula for calculating incomeelasticity of demand is:

Income Elasticity of Demand = % change in quantity demanded / % change in income

For example, if the quantity demanded for a good increases for 15% in response to a 10%increase in income, the income elasticity of demand would be 15% / 10% = 1.5. The degree to which the quantity demanded for a good changes in response to a change in income depends on whether the good is a necessity or a luxury.

'Cross Elasticity Of Demand'

An economic concept that measures the responsiveness in the quantity demand of one good when a change in price takes place in another good. The measure is calculated by taking the percentage

change in the quantity demanded of one good divided by the percentage change in price of the substitute good:

$$E_C = \frac{P_1^A + P_2^A}{Q_1^B + Q_2^B} \times \frac{\Delta Q^B}{\Delta P^A}$$

Where:

P_1^A = The price of good A at time period 1

P_2^A = The price of good A at time period 2

Q_1^B = The quantity demanded of good B at time period 1

Q_2^B = The quantity demanded of good B at time period 2

ΔQ^B = The change in the quantity demanded of good B

ΔP^A = The change in price of good A

Types of Elasticity:

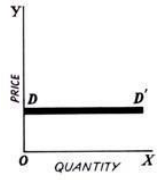
Distinction may be made between Price Elasticity, Income Elasticity and Cross Elasticity. Price Elasticity is the responsiveness of demand to change in price income elasticity means a change in demand in response to a change in the consumer's income and cross elasticity means a change in the demand for a commodity owing to change in the price of another commodity.

Degrees of Elasticity of Demand:

We have seen above that some commodities have very elastic demand, while others have less elastic demand. Let us now try to understand the different degrees of elasticity of demand with the help of curves.

(a) Infinite or Perfect Elasticity of Demand:

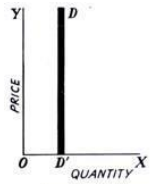
Let as first take one extreme case of elasticity of demand, viz., when it is infinite or perfect. Elasticity of demand is infinity when even a negligible fall in the price of the commodity leads to an infinite extension in the demand for it. In figure the horizontal straight line DD' shows infinite elasticity of demand. Even when the price remains the same, the demand goes on changing.



Infinite Elasticity

(b) Perfectly Inelastic Demand:

The other extreme limit is when demand is perfectly inelastic. It means that howsoever great the rise or fall in the price of the commodity in question, its demand remains absolutely unchanged. In Figure, the vertical line DD' shows a perfectly inelastic demand. In other words in this case elasticity of demand is zero. No amount of change in price induces a change in demand.

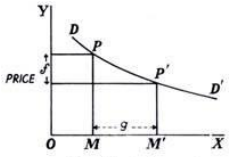


Zero Elasticity

In the real world there is no commodity the demand for which may be absolutely inelastic i.e., changes in its price will fail to bring about any change at all in the demand for it. Some extension/contraction is bound to occur that is why economists say that elasticity of demand is a matter of degree only. In the same manner there are few commodities in whose case the demand is perfectly elastic. Thus in real life, the elasticity of demand of most goods and services lies between the two limits given above viz., infinity and zero. Some have highly elastic demand while others have less elastic demand.

(c) Very Elastic Demand:

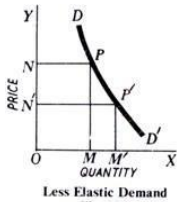
Demand is said to be very elastic when even a small change in the price of a commodity leads to a considerable extension/con-traction of the amount demanded of it. In Figure DD' curve illustrates such a demand. As a result of change of T in the price the quantity demanded extends/contracts by MM' which clearly is comparatively a large change in demand.



Very Elastic Demand

(d) Less Elastic Demand:

When even a substantial change in price brings only a small extension/contraction in demand it is said to be less elastic. In figure DD' shows less elastic demand. A fall of NN' in price extends demand by MM' only which is very small.



Less Elastic Demand

2.2 Supply - supply schedule - supply curve

Supply:

Supply is the amount of some product that producers are willing and able to sell at a given price, all other factors being held constant. In general, supply depicts a positive relationship between the price of a good or service and the quantity that the producer is willing to supply: if a supplier believes it can sell the product for more, it will want to make more of the product. As a result as the price of a good or service increases, suppliers increase the quantity available for purchase.

Supply Schedule:

Supply schedule shows a tabular representation of law of supply. It presents the different quantities of a product that a seller is willing to sell at different price levels of that product.

A supply schedule can be of two types which are as follows:

i. Individual Supply Schedule:

Refers to a supply schedule that represents the different quantities of a product supplied by an individual seller at different prices.

Table shows the supply schedule for the different quantities of milk supplied in the market at different prices:

Table-1: Individual Supply Schedule

Price of Milk (per liter in ₹)	Quantity Supplied(1000 per day in liters)
10	10
12	13
14	20
16	25

ii. Market Supply Schedule:

Refers to a supply schedule that represents the different quantities of a product that all the suppliers in the market are willing to supply at different prices. Market supply schedule can be drawn by aggregating the individual supply schedules of all individual suppliers in the market.

Table shows the market supply schedule of a product supplied by three suppliers. A, B, and C:

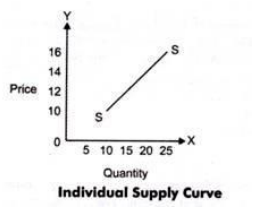
Table-2: Market Supply Schedule

Price of Product X (per unit in ₹)	Individual Supply (per day)			Market Supply (per day)
	A	B	C	
100	750	500	450	1700
200	800	650	500	1950
300	900	750	650	2300
400	1000	900	700	2600

Supply Curve:

The graphical representation of supply schedule is called supply curve. In a graph price of a product is represented on Y-axis and quantity supplied is represented on X-axis. Supply curve can be of two types, individual supply curve and market supply curve. Individual supply curve is the graphical representation of individual supply schedule whereas market supply curve is the representation of market supply schedule.

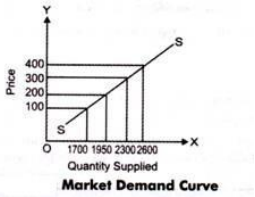
Figure shows the individual supply curve for the individual supply schedule



Individual Supply Curve

In Figure the supply curve is showing a straight line and an upward slope. This implies that the supply of a product increases with increase in the price of a product.

Figure shows the market supply curve of market supply schedule :



Market Demand Curve

The slope of market supply curve can be obtained by calculating the supply of the slopes of individual supply curves. Market supply curve also represents the direct relationship between the quantity supplied and price of a product.

2.2.1 Law of supply - elasticity of supply - time element in the determination of value - market price and normal price - perfect competition

Law of supply states that other factors remaining constant, price and quantity supplied of a good are directly related to each other. In other words when the price paid by buyers for a good rises, then suppliers increase the supply of that good in the market.

Assumptions in Law of Supply:

The law of supply expresses the change in supply with relation to change in price. In other words the main assumption of law of supply is that it studies the effect of price on supply of a product while keeping other determinants of supply at constant.

Apart from this there are certain assumptions that are necessary for the application of law of supply, which are as follows:

i. Assumes that the price of a product changes but the change in the cost of production is constant. This is because if the cost of production rises with increase in price, then sellers would not supply more due to the reduction in their profit margin. Therefore, law of supply would be applicable only when the cost of production remains constant.

ii. Assumes that there is no change in the technique of production. This is because the advanced technique would reduce the cost of production and make the seller supply more at a lower price.

iii. Assumes that there is no change in the scale of production. This is because if the scale of production changes with a period of time, then it would affect the supply. In such a case, the law of supply would not be applicable.

iv. Assumes that the policies of the government remain constant. If there is an increase in tax rates, then the supply of product would decrease even at the higher price. Therefore, for the application of law of supply, it is necessary that government policies should remain constant.

v. Assumes that the transportation cost remain the same. In case the transportation cost reduces, then the supply would increase, which is invalid according to the law of supply.

vi. Assumes that there is no speculation about prices in future, which otherwise can affect the supply of a product. If there is no speculation about products, then the economy is assumed to be at balance and people are satisfied with the available products and do not require any change.

Some of the exceptions of law of supply are as follows:

i. Speculation:

Refers to the fact that the supply of a product decreases instead of increasing in present when there is an expected increase in the price of the product. In such a case, sellers would not supply the whole quantity of the product and would wait for the increase in price in future to earn high profits. This case is an exception to law of demand.

ii. Agricultural products:

Imply that law of supply is not valid in case of agricultural products as the supply of these products depends on particular seasons or climatic conditions. Thus, the supply of these products cannot be increased after a certain limit in spite of rise in their prices.

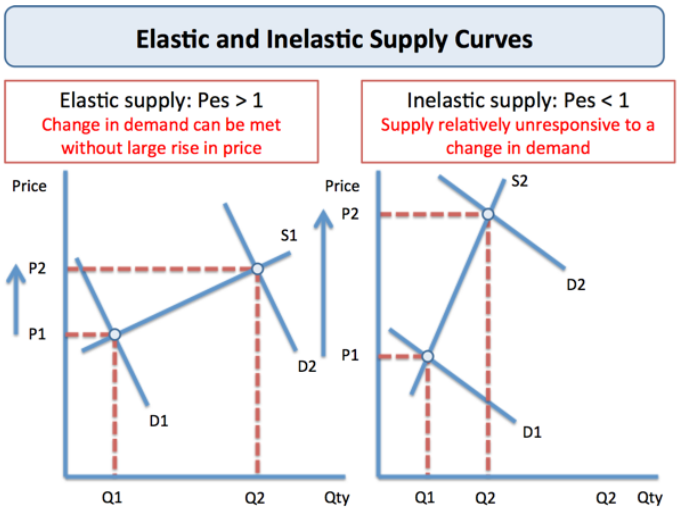
iii. Changes in other situations:

Refers to the fact that law of supply ignores other factors (except price) that can influence the supply of a product. These factors can be natural factors, transportation conditions and government policies.

Elasticity of supply:

Responsiveness of producers to changes in the price of their goods or services. As a general rule, if prices rise so does the supply.

Elasticity of supply is measured as the ratio of proportionate change in the quantity supplied to the proportionate change in price. High elasticity indicates the supply is sensitive to changes in prices, low elasticity indicates little sensitivity to price changes, and no elasticity means no relationship with price. Also called price elasticity of supply.



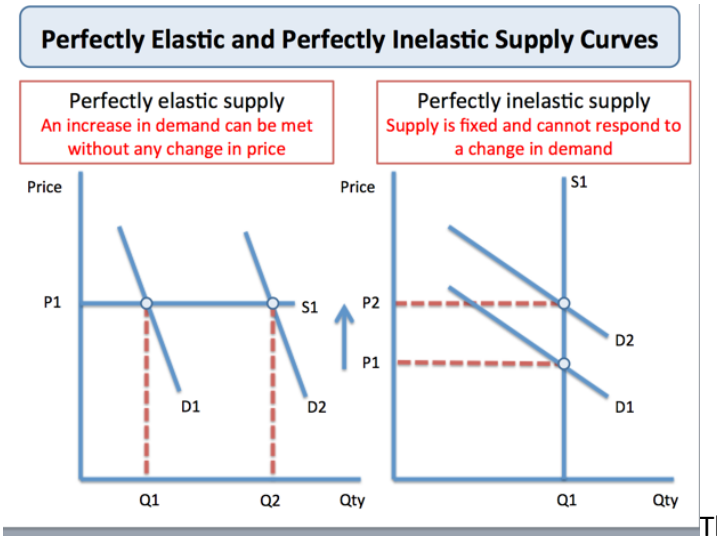
Factors affect the elasticity of supply

Spare production capacity: If there is plenty of spare capacity then a business can increase output without a rise in costs and supply will be elastic in response to a change in demand. The supply of goods and services is most elastic during a recession, when there is plenty of spare labour and capital resources.

Stocks of finished products and components: If stocks of raw materials and finished products are at a high level then a firm is able to respond to a change in demand - supply will be elastic. Conversely when stocks are low, dwindling supplies force prices higher because of scarcity

The ease and cost of factor substitution/mobility: If both capital and labour are occupationally mobile then the elasticity of supply for a product is higher than if capital and labour cannot easily be switched. E.g. a printing press which can switch easily between printing magazines and greetings cards. Or falling prices of cocoa encourage farmers to switch into rubber production

Time period and production speed: Supply is more price elastic the longer the time period that a firm is allowed to adjust its production levels. In some agricultural markets the momentary supply is fixed and is determined mainly by planting decisions made months before, and also climatic conditions, which affect the production yield. In contrast the supply of milk is price elastic because of a short time span from cows producing milk and products reaching the market place.

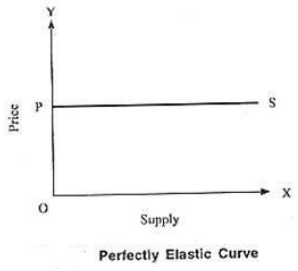


There are five types of elasticity of supply:

(1) Perfectly Elastic (Es =∞):

Supply of a commodity is said to be perfectly elastic when the supply changes to any extent irrespective of any change in its price. It means that at a price any quantity of the good can be supplied. But at a slightly lower price the firm will not sell at all. It is purely an imaginary concept and can only be explained with the help of an imaginary supply schedule.

In this case the elasticity of supply is infinity and the supply curve is a straight line parallel to the X-axis as shown in figure. Price remains OP irrespective of changes in supply. In this case a small rise in price evokes an indefinitely large increase in the amount supplied. Further a small drop in price would reduce the quantity producers are willing to supply to zero.

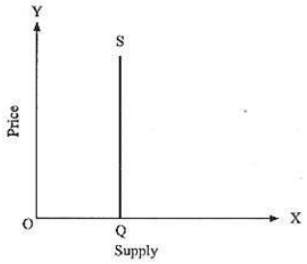


Perfectly Elastic Curve

(2) Perfectly Inelastic (E_s=0):

Supply for a commodity is perfectly inelastic if supply remains same irrespective of change in price of the commodity. A perfectly inelastic supply curve is a straight line parallel to the Y- axis as shown in figure. It is clear from the figure that in this case supply will not increase at all how so ever much price may rise.

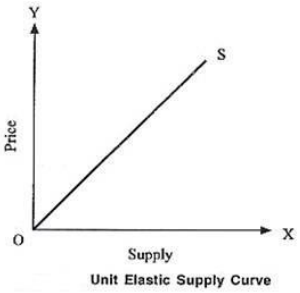
The producers dump the produced quantity of a commodity for whatever it would bring. Here the price of the commodity depends upon the demand of the commodity. The higher the demand, the higher will be the price.



Perfectly Inelastic Supply Carve

(3) Unit Elastic (E_s =1):

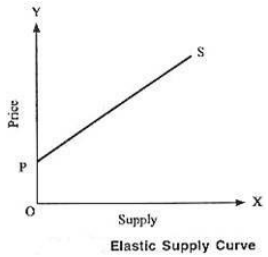
Supply of a commodity is said to be unit elastic if the percentage change in quantity supplied is equal to the percentage change in price. Any straight line supply curve passing through the origin has an elasticity of supply equal to unity irrespective of the slope of this straight line and the scales of the two axis. But it is important to realise that unitary elasticity of supply unlike unitary elasticity of demand has no special economic significance.



Unit Elastic Supply Curve

(4) More than Unit Elastic (E_s> 1):

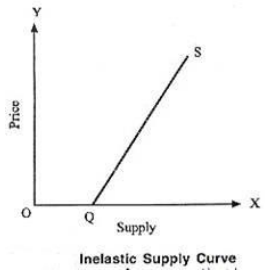
When the percentage change in quantity supplied exceeds the percentage change in price, supply of the commodity is said to be elastic or more than unit elastic (Figure). This type of supply curve passes through the price (Y) axis.



Elastic Supply Curve

(5) Less than Unit Elastic (E_s < 1):

When the percentage change in quantity supplied is less than the percentage change in price, supply of the commodity is said to be inelastic or less than unit elastic. This type of supply curve passes through the quantity (X) axis.



Inelastic Supply Curve

The Role of Time Element in the Determination of Price

Marshall, who propounded the theory that price is determined by both demand and supply, also gave a great importance to the time element in the determination of price. Time elements is of great relevance in the theory of value since one of the two determinants of price namely supply and depends on the time allowed to it for adjustment. It is worth mentioning that Marshall divided time into different periods from the viewpoint of supply and not from the viewpoint of demand.

Time is short or long according to the extent to which supply can adjust itself. Marshall felt it necessary to divide time into different periods on the basis of response of supply because it always takes time for the supply to adjust fully to the changed conditions of demand.

The reason why supply takes time to adjust itself to a change in the demand conditions is that nature of technical conditions of production is such as to prohibit instantaneous adjustment of supply to changed demand conditions. A period of time is required for changes to be made in the size, scale and organisation of firms as well as of the industry.

Another point is worth noting. When Marshall distinguished short and long periods he was not using clock or calendar time as his criterion but operational time in terms of economic forces at work. In this regard as said above supply forces were given the major attention and a time was short or long according to the extent of adjustment in the forces of supply. The greater the adjustability of the supply forces, the greater the length of the time irrespective of the length in clock-time.

Marshall divided time into following three periods on the basis of response of supply to a given and permanent change in demand:

(1) Market Period:

The market period is a very short period in which the supply is fixed that is no adjustment can take place in supply conditions. In other words supply in the market period is limited by the existing stock of the good. The maximum that can be supplied in the market period is the stock of the good which has already been produced.

In this period more good cannot be produced in response to an increase in demand. This market period may be a day or a few days or even a few weeks depending upon the nature of the good. For instance in case of perishable goods like fish, the market period may be a day and for a cotton cloth, it may be a few weeks.

(2) Short Run:

Short run is a period in which supply can be adjusted to a limited extent. During the short period the firms can expand output with given equipment by changing the amounts of variable factors employed. Short periods is not long enough to allow the firm to change the plant or given capital equipment. The plant or capital equipment remains fixed or unaltered in the short run. Output can be expanded by making intensive use of the given plant or capital equipment by varying the amounts of variable factors.

(3) Long Run:

The long run is a period long enough to permit the firms to build new plants or abandon old ones. Further, in the long run, new firms can enter the industry and old ones can leave it. Since in the long run all factors are subject to variation none is a fixed factor. During the long period forces of supply fully adjust them to a given change in demand the size of individual firms as well as the size of the whole industry expands or contracts according to the requirements of demand.

A comparative analysis of market price and normal price can be made on the following grounds:

1. Period of Time:

Market price is for a particular time but normal price is for a period of time. Market price is the price prevailing on a particular day or a particular time. It is the result of market demand and supply.

Normal price on the other hand is the result of long period demand and long period supply.

The price of rice may be expected to be round about Rs. 100 per quintal in the next year or two. But on any particular day or during a very short period the price may be more or less than the normal price of Rs. 100.

2. Effect of Demand and Supply:

Market price is influenced more by demand but normal price is influenced more by supply. Though market price is the result of demand and supply, demand is more important force. The higher the demand, the higher will be the price.

But normal price is the result of long period normal demand and normal supply. Both demand and supply will have influence but the influence of supply viz., cost of production will be more important. Over a long period a commodity will not be produced unless the cost of production is covered.

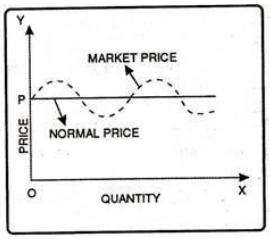
3. Effect of Temporary and Permanent Force:

Market price is determined by temporary equilibrium between the forces of demand and supply at a time, normal price is the result of long-run equilibrium between demand and supply when the supply conditions have fully adjusted themselves to the given demand conditions.

For example, the demand for sweet may go up during Diwali or other festivals, demand for ice will depend upon weather conditions whereas normal price will be influenced by a number of factors like tastes, fashions and population etc.

4. Unstable and Stable Price:

Market price may change continuously but the normal price is more stable. Market price will go on fluctuating around the normal price till ultimately permanent equilibrium is achieved. Just as the pendulum of a clock goes on oscillating around the point of rest and ultimately comes to a standstill similarly the market price oscillates around the normal price.



In the short period at any moment the market is in equilibrium but this equilibrium is the result of the temporary inter-section between demand and supply. If the conditions of perfect competition prevail the market prices in the long run will come to normal price.

Thus, the market price cannot diverge violently from the normal price for long; it simply fluctuates just above and below the normal price and shortly returns towards it. It is just like waves in the sea. Sometimes waves go up or down but try to come to normal position. Normal situation does not exist. This fact is explained in the diagram.

5. Real and Imaginary Price:

Market price is the real price, while normal price is hypothetical price. No doubt normal price is the ideal price but it never prevails in the market. Even if we take for granted that it does exist in the long run it will turn into the market price when we actually go to the market on the day to inquire the price of the particular commodity. Normal price is therefore purely a theoretical concept.

6. Effect of Cost of Production:

A market price can be more or less than the marginal cost of production but normal price cannot be more or less than the marginal cost of production. It is equal to the marginal cost of production. If it is more or less than the marginal cost of production some producers will either enter or leave the industry.

7. Short-Period and Long Period Price:

Market price is also called the short-period price because it prevails in the short-run. Whereas normal price is called the long-period price because it prevails in the long-run.

SUMMARY OF DISTINCTION

Market Price	Normal Price
1. Supply cannot be increased or decreased in a very short period. So, the demand plays a vital role in the market price determination. Market price increases with an increase in demand and decreases when the demand falls.	1. Supply plays an important role in the normal price determination. Sometimes, the normal price falls even below the previous level due to an increase in supply.
2. Market price is temporary.	2. Normal price is permanent.
3. Market price can be less or more than the average cost of production.	3. Normal price always remain equal to the average cost of production.
4. The producer may enjoy super-normal profits if the market price is more than the average cost. He may bear loss if market price is less than the average costs.	4. The producer always gets only-normal profit in the long period. It is so because normal price is always equal to the average cost of production.
5. Market price is actual price which is in the market.	5. In actual life, the normal price does not exist. It is only an imaginary price at which goods are not sold and bought.
6. Market price is both for reproducible and non-rep roducible goods.	6. Normal price can only be in case of reproducible goods. There is no normal price for non-reproducible goods.
7. Market price may change continuously.	7. Normal price is almost stable in the long period.

Perfect competition:

Perfect competition describes a market structure where competition is at its greatest possible level. To make it more clear a market which exhibits the following characteristics in its structure is said to show perfect competition:1. Large number of buyers and sellers.2. Homogeneous product is produced by every firm.3. Free entry and exit of firms.4. Zero advertising cost.5. Consumers have perfect knowledge about the market and are well aware of any changes in the market. Consumers indulge in rational decision making.6. All the factors of production, viz. labour, capital, etc, have perfect mobility in the market and are not hindered by any market factors or market forces.7. No government intervention8. No transportation costs9. Each firm earns normal profits and no firms can earn super-normal profits.10. Every firm is a price taker. It takes the price as decided by the forces of demand and supply. No firm can influence the price of the product.

Benefits of Perfect Competition

All of the knowledge such as price and information pertaining to the goods is equally dispersed among all buyers and sellers. In other words there are no secrets and communication about the products is shared evenly preventing corruption.

Since there are no barriers to enter the market this makes it impossible for a monopoly to occur.

Advertisement is not needed in a perfect competition because all goods are the same and customers have all the knowledge pertaining to those goods.

Examples of perfect competition:

There aren't any 100% perfect markets but there are some industries that come close. Like we mentioned earlier street food vending has many of the factors required of a perfect market. Agricultural markets are examples of nearly perfect competition as well. Imagine shopping at your local farmers' market: there are numerous farmers, selling the same fruits, vegetables and herbs. We can easily find out the prices for the goods but they are usually all about the same.

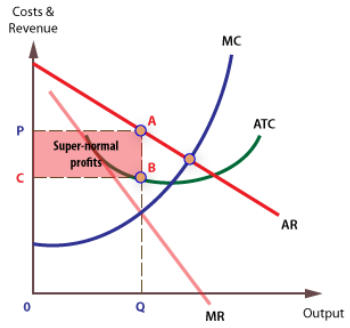
2.3 Monopoly

A monopoly is a market structure in which there is only one producer/seller for a product. In other words the single business is the industry. Entry into such a market is restricted due to high costs or other impediments, which may be economic, social or political. For instance, a government can create a monopoly over an industry that it wants to control such as electricity. Another reason for the barriers against entry into a monopolistic industry is that often times, one entity has the exclusive rights to a natural resource. For example, in Saudi Arabia the government has sole control over the oil industry. A monopoly may also form when a company has a copyright or patent that prevents others from entering the market. Pfizer for instance had a patent on Viagra.

In an oligopoly there are only a few firms that make up an industry. This select group of firms has control over the price and, like a monopoly, an oligopoly has high barriers to entry. The products that the oligopolistic firms produce are often nearly identical and, therefore, the companies, which are competing for market share, are interdependent as a result of market forces. Assume for example that an economy needs only 100 widgets. Company X produces 50 widgets and its competitor, Company Y produces the other 50. The prices of the two brands will be interdependent and, therefore similar. So if company X starts selling the widgets at a lower price it will get a greater market share thereby forcing company Y to lower its prices as well.

Key characteristics:

Monopolies can maintain super-normal profits in the long run. As with all firms profits are maximised when MC = MR. In general the level of profit depends upon the degree of competition in the market which for a pure monopoly is zero. At profit maximisation MC = MR and output is Q and price P. Given that price (AR) is above ATC at Q supernormal profits are possible (area PABC).



With no close substitutes the monopolist can derive super-normal profits area PABC.

A monopolist with no substitutes would be able to derive the greatest monopoly power.

The advantages of monopolies:

Monopolies can be defended on the following grounds:

They can benefit from economies of scale, and may be 'natural' monopolies so it may be argued that it is best for them to remain monopolies to avoid the wasteful duplication of infrastructure that would happen if new firms were encouraged to build their own infrastructure.

Domestic monopolies can become dominant in their own territory and then penetrate overseas markets earning a country valuable export revenues. This is certainly the case with microsoft.

According to Austrian economist Joseph Schumpeter inefficient firms including monopolies would eventually be replaced by more efficient and effective firms through a process called creative destruction.

It has been consistently argued by some economists that monopoly power is required to generate dynamic efficiency that is technological progressiveness.

The disadvantages of monopoly to the consumer:

Monopolies can be criticised because of their potential negative effects on the consumer including:

Restricting output onto the market.

Charging a higher price than in a more competitive market.

Reducing consumer surplus and economic welfare.

Restricting choice for consumers.

Reducing consumer sovereignty.

2.3.1 Monopolistic competition.

Monopolistic Competition:

Monopolistic Competition is a market structure in which many sell products that are similar but not identical.

Characteristics of monopolistic competition:

1. Many Sellers =) Firms compete.

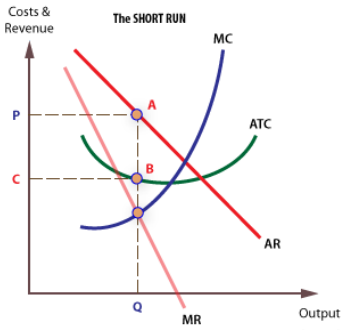
2. Product Differentiation =) Each rm faces downward sloping demand curve.

3. Free Entry =) Economic are zero.

Examples of monopolistic competition: Books, CDs, movies, computer software, restaurants, furniture and so on.

Monopolistic competition in the short run:

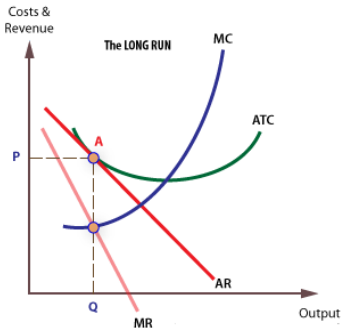
At profit maximisation MC = MR and output is Q and price P. Given that price (AR) is above ATC at Q, supernormal profits are possible (area PABC).



As new firms enter the market demand for the existing firm's products becomes more elastic and the demand curve shifts to the left driving down price. Eventually all super-normal profits are eroded away.

Monopolistic competition in the long run:

Super-normal profits attract in new entrants which shifts the demand curve for existing firm to the left. New entrants continue until only normal profit is available. At this point firms have reached their long run equilibrium.



The advantages of monopolistic competition:

Monopolistic competition can bring the following advantages:

There are no significant barriers to entry therefore markets are relatively contestable.

Differentiation creates diversity, choice and utility. For example a typical high street in any town will have a number of different restaurants from which to choose.

The market is more efficient than monopoly but less efficient than perfect competition - less allocatively and less productively efficient. However they may be dynamically efficient, innovative in terms of new production processes or new products. For example retailers often constantly have to develop new ways to attract and retain local custom.

The disadvantages of monopolistic competition:

There are several potential disadvantages associated with monopolistic competition including:

Some differentiation does not create utility but generates unnecessary waste such as excess packaging. Advertising may also be considered wasteful though most is informative rather than persuasive.

As the diagram illustrates assuming profit maximisation there is allocative inefficiency in both the long and short run. This is because price is above marginal cost in both cases. In the long run the firm is less allocatively inefficient but it is still inefficient.

ORGANISATION

Forms of business - proprietorship - partnership - joint stock company - cooperative organisation - state enterprise - mixed economy - money and banking - banking - kinds - commercial banks - central banking functions - control of credit - monetary policy - credit instrument.

3.1 Forms of business - proprietorship - partnership

There are three main forms of business organizations in the economy today– the sole proprietorship, the partnership, and the corporation.

Each offers its owners significant advantages and disadvantages.

The most common form of business organization in the United States is the sole proprietorship or proprietorship–a business owned and run by one person.

Although relatively the most numerous and profitable of all business organizations, proprietorships are the smallest in size.

Proprietorships earn almost one-fifth of the net income earned by all businesses, even though they make only a fraction of total sales.

Sole Proprietorships

The sole proprietorship is the easiest form of business to start because it involves almost no requirements except for occasional business licenses and fees.

The advantages of a sole proprietorship include:

Ease of starting up

Relative ease of management

Owner enjoys the profits of successful management

No separate business income taxes

Psychological satisfaction

Ease of getting out of business

The disadvantages of a sole proprietorship include:

Owner has unlimited liability

Full and personal responsibility for all losses and debts of the business

Difficulty in raising financial capital

Size and efficiency

The business may have to carry a large inventory, or stock of finished goods and parts in reserve

Limited managerial experience

Difficulty of attracting qualified employees

Limited life

Firm ceases to exist when owner dies, quits, or sells the business

Partnerships

A partnership is a business jointly owned by two or more persons.

Partnerships are the least numerous form of business organization, accounting for the smallest proportion of sales and net income.

Types of Partnerships

The most common form of partnership is a general partnership, one in which all partners are responsible for the management and financial obligations of the business.

In a limited partnership, at least one partner is not active in the daily running of the business, although he or she may have contributed funds to finance the operation.

Because more than one owner is involved, formal legal papers called articles of partnership are usually drawn up to specify arrangements between partners.

The advantages of a partnership include:

Ease of establishment

Ease of management

Lack of special taxes

Attract financial capital easily

Slightly larger size, increased efficiency

Easier to attract top talent

The disadvantages of a partnership include:

Each partner is fully responsible for the acts of all other partners

Limited partners have limited liability

Limited life

Potential for conflict between partners

Offer increased access to financial capital, but do not always work out

A business may have to file for bankruptcy, a court-granted permission to an individual or business to cease or delay debt payments.

Corporation

A corporation is a business organization that has a separate legal personality from its owners. Ownership in a stock corporation is represented by shares of stock.

The owners (stockholders) enjoy limited liability but have limited involvement in the company's operations. The board of directors, an elected group from the stockholders, controls the activities of the corporation.

In addition to those basic forms of business ownership, these are some other types of organizations that are common today:

Limited Liability Company

Limited liability companies (LLCs) in the USA, are hybrid forms of business that have characteristics of both a corporation and a partnership. An LLC is not incorporated; hence, it is not considered a corporation.

Nonetheless, the owners enjoy limited liability like in a corporation. An LLC may elect to be taxed as a sole proprietorship, a partnership, or a corporation.

Cooperative

A cooperative is a business organization owned by a group of individuals and is operated for their mutual benefit. The persons making up the group are called members. Cooperatives may be incorporated or unincorporated.

Some examples of cooperatives are: water and electricity (utility) cooperatives, cooperative banking, credit unions, and housing cooperatives.

Types of partnership:

The different kinds of Partners that are found in Partnership Firms are as follows

1. Active or managing partner:

A person who takes active interest in the conduct and management of the business of the firm is known as active or managing partner.

He carries on business on behalf of the other partners. If he wants to retire, he has to give a public notice of his retirement; otherwise he will continue to be liable for the acts of the firm.

2. Sleeping or dormant partner:

A sleeping partner is a partner who 'sleeps', that is, he does not take active part in the management of the business. Such a partner only contributes to the share capital of the firm, is bound by the activities of other partners, and shares the profits and losses of the business. A sleeping partner, unlike an active partner, is not required to give a public notice of his retirement. As such, he will not be liable to third parties for the acts done after his retirement.

3. Nominal or ostensible partner:

A nominal partner is one who does not have any real interest in the business but lends his name to the firm, without any capital contributions, and doesn't share the profits of the business. He also does not usually have a voice in the management of the business of the firm, but he is liable to outsiders as an actual partner.

Sleeping vs. Nominal Partners:

It may be clarified that a nominal partner is not the same as a sleeping partner. A sleeping partner contributes capital shares profits and losses, but is not known to the outsiders.

A nominal partner, on the contrary, is admitted with the purpose of taking advantage of his name or reputation. As such, he is known to the outsiders, although he does not share the profits of the firm nor does he take part in its management. Nonetheless, both are liable to third parties for the acts of the firm.

4. Partner by estoppel or holding out:

If a person, by his words or conduct, holds out to another that he is a partner, he will be stopped from denying that he is not a partner. The person who thus becomes liable to third parties to pay the debts of the firm is known as a holding out partner.

There are two essential conditions for the principle of holding out :

The person to be held out must have made the representation, by words written or spoken or by conduct, that he was a partner

The other party must prove that he had knowledge of the representation and acted on it, for instance, gave the credit.

5. Partner in profits only:

When a partner agrees with the others that he would only share the profits of the firm and would not be liable for its losses, he is in own as partner in profits only.

6. Minor as a partner:

A partnership is created by an agreement. And if a partner is incapable of entering into a contract, he cannot become a partner. Thus, at the time of creation of a firm a minor cannot be one of the parties to the contract. But under section 30 of the Indian Partnership Act, 1932, a minor 'can be admitted to the benefits of partnership', with the consent of all partners. A minor partner is entitled to his share of profits and to have access to the accounts of the firm for purposes of inspection and copy.

He, however, cannot file a suit against the partners of the firm for his share of profit and property as long as he remains with the firm. His liability in the firm will be limited to the extent of his share in the firm, and his private property cannot be attached by creditors.

On his attaining majority, he has to decide within six months whether he will become regular partner of withdraw from partnership. The choice in either case is to be intimated through a public notice, failing which he will be treated to have decided to continue as partner, and he becomes personally liable like other partners for all the debts and obligations of the firm from the date of his admission to its benefits. He also becomes entitled to file a suit against other partners for his share of profit and property.

7. Other partners:

In partnership firms, several other types of partners are also found, namely, secret partner who does not want to disclose his relationship with the firm to the general public. Outgoing partner, who retires voluntarily without causing dissolution of the firm, limited partner who is liable only up to the value of his capital contributions in the firm, and the like.

However, the moment public comes to know of it he becomes liable to them for meeting debts of the firm. Usually, an outgoing partner is liable for all debts and obligations as are incurred before his retirement. A limited partner is found in limited partnership only and not in general partnership.

3.2 Joint stock company - cooperative organisation - state enterprise

Joint stock Company

A company which has some features of a corporation and some features of a partnership. The company sells fully transferable stock, but all shareholders have unlimited liability.**Characteristics and features of a joint stock company**

Separate legal existence:

A company has a distinct and separate legal entity, independent of its members. It means that the company can own property, make contracts, and file suits in it own name. Shareholders are not the joint owners of the company's property. A shareholder cannot be held liable for the acts of the company. A creditor of th company is not the creditor of its members. This is one of the important characteristics of joint stock companies that has made it very popular form of business.

Perpetual succession:

Perpetual succession means continuous existence. A company is creation of the law and only law can bring it to an end. Its life does not depend on the life of its members. The death, insolvency or lunacy of a member does not affect the life of the company. It continues to exist even if all its members dies. Members may come and go but the company goes on till it is wound up.

Limited liability:

As a separate legal entity, its members cannot be held liable for the debts of the company. The liability of every member is limited to nominal value of the shares bought by him or the amount of the guarantee given by him. For instance, if a member has 50 shares of Rs 10 each, hi liability is limited to Rs.500 only. Even if the assets of the company are found to be insufficient to satisfy the claims of the creditors, no member can be called to pay anything more than what is due to him.

Transferability of shares:

The capital of a company is divided into parts each part called a share. These share are generally transferable. A shareholder is free to withdraw his membership from the company by transferring his shares.

Common seal:

Being an artificial entity, a company cannot act and sign itself. Therefore, it acts through human beings. All the acts of the company are authorized through its common seal. The common seal is affixed on all important documents as a token of the company's approval. The common seal is an official signature of the company. This common seal is valid only if signed by at least two members

of the Board of Directors.Without these features of joint stock companies, it would have been better to call it a firm rather than a company form of organization.

Advantages of joint stock company

Large capital:

A company can collect huge capital for the business through shares and debentures, public deposits, loans etc. Due to huge capital the company can conduct business on a large scale.

Limited liability:

Usually the liability of members of a company is limited to the extent of uncalled or unpaid shares held by them. Their personal property cannot be seized to meet the company's liability beyond the above mentioned liability.

Continuity and stability:

Death, insolvency or insanity of any member of the company will not affect its life and existence. Men may come and they may go but a company remains forever. It can be wound up under the provision of the act.

Professional management:

The Company appoints experienced, competent and expert to manage the business. Their services lead to managerial and administrative efficiency and accuracy.

Economies of scale:

A company operates on a high scale and so it enjoys economies in production, distribution, management and financing.

Bargaining power:

Compared to other forms of organization, a joint stock company is a strong power in buying as well as in selling of goods because of its large scale production.

Legal status:

Since the company is created by law, it has separate legal existence compared to its members. Therefore the members cannot be personally held responsible for the acts of company and company cannot be held liable for the acts of the members.

Large membership:

The Company is owned by a large number of members- maximum of 50 in the case of private limited company and unlimited number of member in the case of public limited company.

Transferability of shares:

Shares of Joint Stock Company, especially public companies, are freely transferable. A member who wants to sell his shares can easily do so in the stock market. This encourages the public and other to invest in shares.

Employment:

Joint Stock Company provides employment to a large number of people directly and indirectly. This leads to higher national income for the country and higher living standard of living for the people.

Government revenue:

Joint Stock Companies provide revenue to the government in the form of taxes charged directly and indirectly.

Research and development:

Joint Stock Companies undertakes R&D continuously thus bringing about new and improved products which benefits people.

Economic development:

Because of Joint Stock Companies there is all round development of trade, commerce and industry. The society in general gains the benefit of the industrial development. Large capital, government revenue, economic development etc. are the advantages of Joint Stock Companies.

Disadvantages of Joint Stock Company

Difficult formation:

Formation of Joint Stock Company is an expensive and time consuming process as a number of legal formalities have to be undertaken in order to register the company.

Lacks flexibility:

The working of a Joint Stock Company is less flexible s compared to other organizations. For very small thing they either have to follow a detailed procedure or obtain sanctions from various authorities. This results in lack of flexibility.

No business secrecy:

This form of organization lacks business secrecy because it is compulsory for the company to publish accounts and other records

Excessive government regulation:

The Company is a subject to excessive government control. It has to follow the numerous provision of the companies act. This makes working difficult.

Delay in decision:

The Joint Stock Company is completely not free to take all decisions and to implement the decisions. Due to excessive government control and democratic set up all decisions are taken in meetings and some decisions require shareholder's approval. All this leads to delay in decisions.

Lack of contact with customer:

A company can't be in a position to maintain intimate contacts with customers. It cannot be able enter to the requirements of each and every customer. Then there is no close personal touch which decreases the competitive strength of the business due to large scale operation.

Lack of contact with employees:

The top management may not have contact with their employees. This may cause friction and disputes among the management and the employees with may affect the worker's and employee's morale.

Conflict of interest:

Many persons are the owners of Joint Stock Company. There can be misunderstanding and jealousy among them and these cause problems in operation of business and profit making

Not suitable for all type of business:

This type of organization is not suitable for business where personalized services are required.

Exploitation of shareholders:

Sometimes the BOD may misappropriate the fund and mislead the shareholders by window dress report. The directors may even manipulate the trading on the stock exchange. Thus shareholders can be exploited by corrupt directors.

Cooperative organization:

Cooperative, organization owned by and operated for the benefit of those using its services. Cooperatives have been successful in a number of fields, including the processing and marketing of farm products, the purchasing of other kinds of equipment and raw materials, and in the wholesaling, retailing, electric power, credit and banking, and housing industries. The income from a retail cooperative is usually returned to the consumers in the form of dividends based on the amounts purchased over a given period of time.

Modern consumer cooperatives, usually called co-ops in the United States, are thought to have begun in Great Britain in 1844, with the Rochdale Equitable Pioneers Society The society created a

set of organizational and working rules that have been widely adopted. They included open membership, democratic control, no religious or political discrimination, sales at prevailing market prices, and the setting aside of some earnings for education.

The cooperative movement developed rapidly in the latter part of the 19th century, particularly in the industrial and mining areas of northern England and Scotland. It spread quickly among the urban working class in Britain, France, Germany, and Sweden and among the rural population of Norway, the Netherlands, Denmark, and Finland.

In the United States, attempts at consumer and agricultural marketing cooperatives were made at the beginning of the 19th century. Although most U.S. cooperatives developed in rural areas, consumer and housing cooperatives spread substantially in metropolitan areas in the late 20th century.

Cooperatives were introduced in Latin America by European immigrants in the early 1900s; later they were often fostered by state action in connection with agrarian reform. Marketing and credit cooperatives have been important in many African nations, especially since World War II. During the Soviet era, marketing cooperatives of the U.S.S.R. and eastern Europe functioned as part of a centrally controlled purchasing network for farm produce. Cooperative farms in those countries were modeled on the Russian artel, in which all land was pooled and worked in common and income was distributed according to work performed.

'State-Owned Enterprise - SOE'

A legal entity that is created by the government in order to partake in commercial activities on the government's behalf. A state-owned enterprise (SOE) can be either wholly or partially owned by a government and is typically earmarked to participate in commercial activities.

Also known as government-owned corporations (GOC), state-owned entities should not be confused with companies with stocks that are owned in part by a government body, since these companies are truly public corporations which happen to have a government entity as one of their shareholders. SOEs are common across the globe, including in the U.S where mortgage companies Freddie Mac and Fannie Mae are considered government-sponsored enterprises (GSEs).

3.3 Mixed economy

A mixed economy consists of both private companies and government/state-owned entities. Both have control of owning, making, selling, and exchanging goods in the country. We learned what planned and market economies are - let's just think of a mixed economy as containing features of both planned and market economies.

Main Features of Mixed Economy:

Mixed economy has following main features:

(i) Co-existence of Private and Public Sector:

Under this system there is co-existence of public and private sectors. In public sector, industries like defence, power, energy, basic industries etc., are set up. On the other hand, in private sector all the consumer goods industries, agriculture, small-scale industries are developed. The government encourages both the sectors to develop simultaneously.

(ii) Personal Freedom:

Under mixed economy, there is full freedom of choice of occupation, although consumer does not get complete liberty but at the same time government can regulate prices in public interest through public distribution system.

(iii) Private Property is allowed:

In mixed economy, private property is allowed. However, here it must be remembered that there must be equal distribution of wealth and income. It must be ensured that the profit and property may not concentrate in a few pockets.

(iv) Economic Planning:

In a mixed economy, government always tries to promote economic development of the country. For this purpose, economic planning is adopted. Thus, economic planning is very essential under this system.

(v) Price Mechanism and Controlled Price:

Under this system, price mechanism and regulated price operate simultaneously. In consumer goods industries price mechanism is generally followed. However, at the time of big shortages or during national emergencies prices are controlled and public distribution system has to be made effective.

(vi) Profit Motive and Social Welfare:

In mixed economy system, there are both profit motive like capitalism and social welfare as in socialist economy.

(vii) Check on Economic Inequalities:

In this system, government takes several measures to reduce the gap between rich and poor through progressive taxation on income and wealth. The subsidies are given to the poor people and also job opportunities are provided to them. Other steps like concessions, old age pension, free medical facilities and free education are also taken to improve the standard of poor people. Hence, all these help to reduce economic inequalities.

(viii) Control of Monopoly Power:

Under this system, government takes huge initiatives to control monopoly practices among the private entrepreneurs through effective legislative measures. Besides, government can also fake over these services in the public interest.

Types of Mixed Economy:

The mixed economy may be classified in two categories:

Capitalistic Mixed Economy:

In this type of economy, ownership of various factors of production remains under private control. Government does not interfere in any manner. The main responsibility of the government in this system is to ensure rapid economic growth without allowing concentration of economic power in the few hands.

Socialistic Mixed Economy:

Under this system, means of production are in the hands of state. The forces of demand and supply are used for basic economic decisions. However, whenever and wherever demand is necessary, government takes actions so that basic idea of economic growth is not hampered.

However, this system is again sub-divided into two parts:

(i) Liberal Socialistic Mixed Economy:

Under this system, the government interferes to bring about timely changes in market forces so that the pace of rapid economic growth remains uninterrupted.

(ii) Centralised Socialistic Mixed Economy:

In this economy, major decisions are taken by central agency according to the needs of the economy.

Merits of Mixed Economy:

A mixed economy possesses certain merits which are as under:

(1) Best Allocation of Resources:

Since a mixed economy incorporates the good features of both capitalism and socialism, the resources of the economy are utilised in the best possible manner. The price mechanism, the profit motive, and the freedoms of consumption, production, and occupation lead to the efficient allocation of resources within the economy. But where the possibility of mal-allocation of resources appears, the state regulation and control rectifies it. Thus shortages are avoided, productive efficiency increases, and cyclical fluctuations are eliminated.

(2) General Balance:

A mixed economy maintains a general balance between the public sector and the private sector. There is competition as well as cooperation between the two sectors which are conducive for achieving a high rate of capital accumulation and economic growth. Further, an estimate of the successes and failures of the two sectors can be made by comparing their respective performances, and corrective measures are adopted accordingly. Thus the inconsistencies of the private enterprise economy and the 'paper guesses' of the planned economy are avoided in a mixed economy. By maintaining a higher level of production in the two sectors, the state is able to achieve the targets laid down in the plan.

(3) Welfare State:

A mixed economy contains all the features of a welfare state. There is no exploitation either by the capitalists as under a free enterprise economy or by the state as under a socialist economy. The workers are not forced to work, Workers are provided monetary incentives in the form of bonus and cash rewards for inventions. Labour laws are passed fixing minimum wages, hours of work, and laying down the working conditions of workers in factories and on farms.

Social security is also provided to workers in the event of unemployment, disablement, death, illness, etc. The production and sale of noxious articles are banned, while those of essentials are increased for the benefit of the people at large. Legislative measures are adopted to remove the concentration of economic power in the hands of the few rich, and to lessen inequalities of income and wealth.

Demerits of Mixed Economy:

A mixed economy has also certain defects which are discussed below:

(1) Non-Cooperation between the Two Sectors:

The experience of the working of mixed economies reveals that the public sector and the private sector do not see eye to eye with one another. The private sector is treated like a step-child and groans under the various restrictions imposed upon it by the state. The private sector is taxed

heavily, while the public sector is given subsidies and preference over the former in the supplies of inputs. Thus a sense of bitterness and non-cooperation develops between the two sectors.

(2) Inefficient Public Sector:

The public sector of a mixed economy is a big burden on the economy because it works inefficiently. Bureaucratic control brings in inefficiency. There is over-staffing of the personnel, red-tapism, corruption and nepotism. As a result, production falls and losses emerge.

(3) Economic Fluctuations:

The experience of the working of the mixed economic system in the developed countries also reveals that they have not been able to remove economic fluctuations. This is because of the improper mixture of capitalism and socialism. The private sector is allowed to operate freely under a loose system of government regulations and controls. The public sector also does not operate under the rigid conditions which are laid down under a planned economy.

It has to depend for its supplies of raw materials, intermediate products and factors on the vagaries of the market mechanism. If in the market, the prices of inputs are increasing due to their shortages, the public sector will be equally experiencing these shortages and price increases. Hence economic fluctuations which are a characteristic feature of a capitalist economy are equally experienced in a mixed economy.

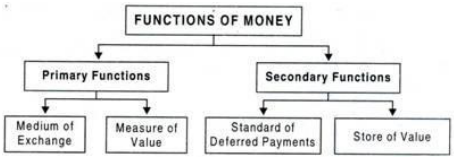
3.4 Money and banking - banking - kinds - commercial banks - central banking functions - control of credit - monetary policy - credit instrument.

Money is something which facilitates the transaction of goods and services.

Primary and Secondary Functions of Money

1. Primary Functions (Main or Basic Functions)

2. Secondary Functions (Subsidiary or Derivative Functions)



1. Primary Functions:

Primary Functions include the most important functions of money, which it must perform in every country,

These are:

(i) Medium of Exchange:

Money, as a medium of exchange, means that it can be used to make payments for all transactions of goods and services. It is the most essential function of money. Money has the quality of general acceptability So, all exchanges take place in terms of money.

1. This function has removed the major difficulty of lack of double coincidence of wants and inconveniences associated with the barter system.

2. Use of money allows purchase and sale to be conducted independently of one another.

3. This function of money facilitates trade and helps in conducting transactions in an economy.

4. Money has no power to satisfy human wants, but it commands power to purchase those things, which have utility to satisfy human wants.

For, “How does money separate the acts of sale and purchase”, refer HOTS.

(ii) Measure of Value (Unit of Value):

Money as measure of value means that money works as a common denomination, in which values of all goods and services are expressed.

1. By reducing the value of all goods and services to a single unit (i.e. price), it becomes very easy to find out the exchange ratios between them and comparing their prices.

2. This function facilitates maintenance of business accounts, which would be otherwise impossible.

3. Money helps in calculating relative prices of goods and services. Due to this reason, it is regarded as a Unit of Account'. For instance, 'Rupee' is the unit of account in India, 'Pound' in England and so on.

2. Secondary Functions:

These refer to those functions of money which are supplementary to the primary functions. These functions are derived from primary functions and, therefore, they are also known as 'Derivative Functions'.

The major secondary functions are:

(i) Standard of Deferred Payments:

Money as a standard of deferred payments means that money acts as a 'standard' for payments, which are to be made in future. Every day, millions of transactions take place in which payments are not made immediately. Money encourages such transactions and helps in capital formation and economic development of the economy.

This function of money is significant because:

1. Money as a standard of deferred payments has simplified the borrowing and lending operations.

2. It has led to the creation of financial institutions.

(ii) Store of Value (Asset Function of Money):

Money as a store of value means that money can be used to transfer purchasing power from present to future. Money is a way to store wealth. Although wealth can be stored in other forms also, but money is the most economical and convenient way. It provides security to individuals to meet contingencies, unpredictable emergencies and to pay future debts. Under barter system, it was difficult to use goods as a store of wealth due to perishable nature of some goods and high cost of storage.

Money as store of value has the following advantages:

1. Money is available in fractional denomination, ranging from Rs 1 to Rs 1,000.

2. Money is easily portable. So, it is easy and economical to store money as its storage does not require much space.

3. Money has the merit of general acceptability so; it can be easily exchanged for goods at all times.

4. Savings in terms of money are much more secured than in terms of goods.

Money has overcome the drawbacks of Barter System:

Barter system makes the exchange process very difficult and highly inefficient.

Banking

Banking implies accepting deposits of money from the public for the purpose of lending or investment which is repayable on demand and can be withdrawn by means of cheques, draft order etc.

Commercial Bank

A commercial bank is a financial institution engaged in the business of accepting deposits and making loans to the people.

Central Bank

A central bank is an apex institution of a country that controls and regulates the monetary and financial system of the country.

Primary and Secondary Functions of Commercial Banks

(1) Primary Function:

1. Accepting Deposits:

It is the most important function of commercial banks.

They accept deposits in several forms according to requirements of different sections of the society.

The main kinds of deposits are:

(i) Current Account Deposits or Demand Deposits:

These deposits refer to those deposits which are repayable by the banks on demand:

1. Such deposits are generally maintained by businessmen with the intention of making transactions with such deposits.

2. They can be drawn upon by a cheque without any restriction.

3. Banks do not pay any interest on these accounts. Rather, banks impose service charges for running these accounts.

(ii) Fixed Deposits or Time Deposits:

Fixed deposits refer to those deposits, in which the amount is deposited with the bank for a fixed period of time.

1. Such deposits do not enjoy cheque-able facility.

2. These deposits carry a high rate of interest.

Basis	Demand Deposits	Fixed Deposits
Cheque facility	They are chequeable deposits.	They are non-chequeable deposits.
Interest payments	They do not carry any interest.	They carry interest which varies directly with the period of time.
Number of transactions	The depositor can make any number of transactions for deposit or with drawl of money.	Depositor generally makes only two transactions: (i) Deposit of Money in the beginning; (ii) Withdrawal of money on maturity.

(iii) Saving Deposits:

These deposits combine features of both current account deposits and fixed deposits:

1. The depositors are given cheque facility to withdraw money from their account. But, some restrictions are imposed on number and amount of withdrawals, in order to discourage frequent use of saving deposits.

2.They carry a rate of interest which is less than interest rate on fixed deposits. It must be noted that Current Account deposits and saving deposits are chequable deposits, whereas, fixed deposit is a non-chequable deposit.

2. Advancing of Loans:

The deposits received by banks are not allowed to remain idle. So, after keeping certain cash reserves, the balance is given to needy borrowers and interest is charged from them, which is the main source of income for these banks.

Different types of loans and advances made by Commercial banks are:

(i) Cash Credit:

Cash credit refers to a loan given to the borrower against his current assets like shares, stocks, bonds, etc. A credit limit is sanctioned and the amount is credited in his account. The borrower may withdraw any amount within his credit limit and interest is charged on the amount actually withdrawn.

(ii) Demand Loans:

Demand loans refer to those loans which can be recalled on demand by the bank at any time. The entire sum of demand loan is credited to the account and interest is payable on the entire sum.

(iii) Short-term Loans:

They are given as personal loans against some collateral security. The money is credited to the account of borrower and the borrower can withdraw money from his account and interest is payable on the entire sum of loan granted.

(2) Secondary Functions:

1. Overdraft Facility:

It refers to a facility in which a customer is allowed to overdraw his current account upto an agreed limit. This facility is generally given to respectable and reliable customers for a short period. Customers have to pay interest to the bank on the amount overdrawn by them.

2. Discounting Bills of Exchange:

It refers to a facility in which holder of a bill of exchange can get the bill discounted with bank before the maturity. After deducting the commission, bank pays the balance to the holder. On maturity, bank gets its payment from the party which had accepted the bill.

3. Agency Functions:

Commercial banks also perform certain agency functions for their customers. For these services, banks charge some commission from their clients.

Some of the agency functions are:

(i) Transfer of Funds:

Banks provide the facility of economical and easy remittance of funds from place-to-place with the help of instruments like demand drafts, mail transfers, etc.

(ii) Collection and Payment of Various Items:

Commercial banks collect cheques, bills,' interest, dividends, subscriptions, rents and other periodical receipts on behalf of their customers and also make payments of taxes, insurance premium, etc. on standing instructions of their clients.

(iii) Purchase and Sale of Foreign Exchange:

Some commercial banks are authorized by the central bank to deal in foreign exchange. They buy and sell foreign exchange on behalf of their customers and help in promoting international trade.

(iv) Purchase and Sale of Securities:

Commercial banks buy and sell stocks and shares of private companies as well as government securities on behalf of their customers.

(v) Income Tax Consultancy:

They also give advice to their customers on matters relating to income tax and even prepare their income tax returns.

(vi) Trustee and Executor:

Commercial banks preserve the wills of their customers as trustees and execute them after their death as executors.

(vii) Letters of Reference:

They give information about the economic position of their customers to traders and provide the similar information about other traders to their customers.

4. General Utility Functions:

Commercial banks render some general utility services like:

(i) Locker Facility:

Commercial banks provide facility of safety vaults or lockers to keep valuable articles of customers in safe custody.

(ii) Traveller's Cheques:

Commercial banks issue traveler's cheques to their customers to avoid risk of taking cash during their journey.

(iii) Letter of Credit:

They also issue letters of credit to their customers to certify their creditworthiness.

(iv) Underwriting Securities:

Commercial banks also undertake the task of underwriting securities. As public has full faith in the creditworthiness of banks, public do not hesitate in buying the securities underwritten by banks.

(v) Collection of Statistics:

Banks collect and publish statistics relating to trade, commerce and industry. Hence, they advice customers on financial matters. Commercial banks receive deposits from the public and use these deposits to give loans. However, loans offered are many times more than the deposits received by banks. This function of banks is known as 'Money Creation'.

The limitations of credit creation by commercial banks are as follows :-

1. Amount of Deposit

The most important factor which decides credit creation is the amount of deposits made by the depositors. Higher is the amount of deposits, greater is the supply of credit and vice versa.

2. Cash Reserve Ratio (CRR)

There exists an indirect relationship between Credit Creation and Cash Reserve Ratio (CRR). Higher is the Cash Reserve Ratio (CRR) more will be the reserves to be maintained and less credit will be created by banks. The CRR is fixed by the RBI in India. It ranges between 3% to 15%.

3. Banking Habits of People

If the banking habits of the people are well-developed, then all their transactions would be through banks, and this will lead to expansion of credit and vice-versa.

4. Supply of Securities

Loans are sanctioned on the basis of the securities provided to the banks. If securities are available then the credit creation will be more and vice-versa.

5. Willingness of people to borrow

Commercial banks may have enough money to lend. Customers should be willing to borrow from the banks to facilitate credit creation. If they are willing to borrow, then the credit created by banks will be less.

6. Monetary Policy of Central Bank

While credit is created by commercial banks, it is controlled by the Central Bank. Credit control is one important function of the central bank. Central Bank uses various methods of Credit Control from time to time and thus influences the banks to expand or contract credit.

7. External Drain

External Drain refers to withdrawal of cash from the banking system by the public. It lowers the reserves of the banks and limits the credit creation.

8. Uniform Policy

If all the commercial banks follow a uniform policy related to CRR, then credit creation would be smooth. If some banks follow liberal and others follow a conservative one, then credit creation would be affected.

Function of RBI:

Major functions of the RBI are as follows:

1. Issue of Bank Notes:

The Reserve Bank of India has the sole right to issue currency notes except one rupee notes which are issued by the Ministry of Finance. Currency notes issued by the Reserve Bank are declared unlimited legal tender throughout the country.

This concentration of notes issue function with the Reserve Bank has a number of advantages: (i) it brings uniformity in notes issue; (ii) it makes possible effective state supervision; (iii) it is easier to control and regulate credit in accordance with the requirements in the economy; and (iv) it keeps faith of the public in the paper currency.

2. Banker to Government:

As banker to the government the Reserve Bank manages the banking needs of the government. It has to-maintain and operate the government's deposit accounts. It collects receipts of funds and makes payments on behalf of the government. It represents the Government of India as the member of the IMF and the World Bank.

3. Custodian of Cash Reserves of Commercial Banks:

The commercial banks hold deposits in the Reserve Bank and the latter has the custody of the cash reserves of the commercial banks.

4. Custodian of Country's Foreign Currency Reserves:

The Reserve Bank has the custody of the country's reserves of international currency, and this enables the Reserve Bank to deal with crisis connected with adverse balance of payments position.

5. Lender of Last Resort:

The commercial banks approach the Reserve Bank in times of emergency to tide over financial difficulties, and the Reserve bank comes to their rescue though it might charge a higher rate of interest.

6. Central Clearance and Accounts Settlement:

Since commercial banks have their surplus cash reserves deposited in the Reserve Bank, it is easier to deal with each other and settle the claim of each on the other through book keeping entries in the books of the Reserve Bank. The clearing of accounts has now become an essential function of the Reserve Bank.

7. Controller of Credit:

Since credit money forms the most important part of supply of money, and since the supply of money has important implications for economic stability, the importance of control of credit becomes obvious. Credit is controlled by the Reserve Bank in accordance with the economic priorities of the government.

Monetary policy is the macroeconomic policy laid down by the central bank. It involves management of money supply and interest rate and is the demand side economic policy used by the government of a country to achieve macroeconomic objectives like inflation, consumption, growth and liquidity.

Objectives or Goals of Monetary Policy:

The following are the principal objectives of monetary policy:

1. Full Employment:

Full employment has been ranked among the foremost objectives of monetary policy. It is an important goal not only because unemployment leads to wastage of potential output, but also because of the loss of social standing and self-respect.

2. Price Stability:

One of the policy objectives of monetary policy is to stabilise the price level. Both economists and laymen favour this policy because fluctuations in prices bring uncertainty and instability to the economy.

3. Economic Growth:

One of the most important objectives of monetary policy in recent years has been the rapid economic growth of an economy. Economic growth is defined as “the process whereby the real per capita income of a country increases over a long period of time.”

4. Balance of Payments:

Another objective of monetary policy since the 1950s has been to maintain equilibrium in the balance of payments.

Instruments of Monetary Policy:

The instruments of monetary policy are of two types: first, quantitative, general or indirect; and second, qualitative, selective or direct. They affect the level of aggregate demand through the supply of money, cost of money and availability of credit. Of the two types of instruments, the first category includes bank rate variations, open market operations and changing reserve requirements. They are meant to regulate the overall level of credit in the economy through commercial banks. The selective credit controls aim at controlling specific types of credit. They include changing margin requirements and regulation of consumer credit. We discuss them as under:

Bank Rate Policy:

The bank rate is the minimum lending rate of the central bank at which it rediscounts first class bills of exchange and government securities held by the commercial banks. When the central bank finds that inflationary pressures have started emerging within the economy, it raises the bank rate. Borrowing from the central bank becomes costly and commercial banks borrow less from it.

The commercial banks, in turn, raise their lending rates to the business community and borrowers borrow less from the commercial banks. There is contraction of credit and prices are checked from rising further. On the contrary, when prices are depressed, the central bank lowers the bank rate.

It is cheap to borrow from the central bank on the part of commercial banks. The latter also lower their lending rates. Businessmen are encouraged to borrow more. Investment is encouraged. Output, employment, income and demand start rising and the downward movement of prices is checked.

Open Market Operations:

Open market operations refer to sale and purchase of securities in the money market by the central bank. When prices are rising and there is need to control them, the central bank sells securities. The reserves of commercial banks are reduced and they are not in a position to lend more to the business community.

Further investment is discouraged and the rise in prices is checked. Contrariwise, when recessionary forces start in the economy, the central bank buys securities. The reserves of commercial banks are raised. They lend more. Investment, output, employment, income and demand rise and fall in price is checked.

Changes in Reserve Ratios:

This weapon was suggested by Keynes in his Treatise on Money and the USA was the first to adopt it as a monetary device. Every bank is required by law to keep a certain percentage of its total deposits in the form of a reserve fund in its vaults and also a certain percentage with the central bank.

When prices are rising, the central bank raises the reserve ratio. Banks are required to keep more with the central bank. Their reserves are reduced and they lend less. The volume of investment, output and employment are adversely affected. In the opposite case, when the reserve ratio is

lowered, the reserves of commercial banks are raised. They lend more and the economic activity is favourably affected.

Selective Credit Controls:

Selective credit controls are used to influence specific types of credit for particular purposes. They usually take the form of changing margin requirements to control speculative activities within the economy. When there is brisk speculative activity in the economy or in particular sectors in certain commodities and prices start rising, the central bank raises the margin requirement on them.

The result is that the borrowers are given less money in loans against specified securities. For instance, raising the margin requirement to 60% means that the pledger of securities of the value of Rs 10,000 will be given 40% of their value, i.e. Rs 4,000 as loan. In case of recession in a particular sector, the central bank encourages borrowing by lowering margin requirements.

Some of the methods employed by the RBI to control credit creation are:

I. Quantitative Method

II. Qualitative Method.

The various methods employed by the RBI to control credit creation power of the commercial banks can be classified in two groups, viz., quantitative controls and qualitative controls. Quantitative controls are designed to regulate the volume of credit created by the banking system qualitative measures or selective methods are designed to regulate the flow of credit in specific uses.

Quantitative or traditional methods of credit control include banks rate policy, open market operations and variable reserve ratio. Qualitative or selective methods of credit control include regulation of margin requirement, credit rationing, regulation of consumer credit and direct action.

I. Quantitative Method:

(i) Bank Rate:

The bank rate, also known as the discount rate, is the rate payable by commercial banks on the loans from or rediscounts of the Central Bank. A change in bank rate affects other market rates of interest. An increase in bank rate leads to an increase in other rates of interest and conversely, a decrease in bank rate results in a fall in other rates of interest.

A deliberate manipulation of the bank rate by the Central Bank to influence the flow of credit created by the commercial banks is known as bank rate policy. It does so by affecting the demand for credit the cost of the credit and the availability of the credit.

An increase in bank rate results in an increase in the cost of credit; this is expected to lead to a contraction in demand for credit. In as much as bank credit is an important component of aggregate money supply in the economy, a contraction in demand for credit consequent on an increase in the

cost of credit restricts the total availability of money in the economy, and hence may prove an anti-inflationary measure of control.

Likewise, a fall in the bank rate causes other rates of interest to come down. The cost of credit falls, i. e., and credit becomes cheaper. Cheap credit may induce a higher demand both for investment and consumption purposes. More money, through increased flow of credit, comes into circulation.

A fall in bank rate may, thus, prove an anti-deflationary instrument of control. The effectiveness of bank rate as an instrument of control is, however, restricted primarily by the fact that both in inflationary and recessionary conditions, the cost of credit may not be a very significant factor influencing the investment decisions of the firms.

(ii) Open Market Operations:

Open market operations refer to the sale and purchase of securities by the Central bank to the commercial banks. A sale of securities by the Central Bank, i.e., the purchase of securities by the commercial banks, results in a fall in the total cash reserves of the latter.

A fall in the total cash reserves is leads to a cut in the credit creation power of the commercial banks. With reduced cash reserves at their command the commercial banks can only create lower volume of credit. Thus, a sale of securities by the Central Bank serves as an anti-inflationary measure of control.

Likewise, a purchase of securities by the Central Bank results in more cash flowing to the commercials banks. With increased cash in their hands, the commercial banks can create more credit, and make more finance available. Thus, purchase of securities may work as an anti-deflationary measure of control.

The Reserve Bank of India has frequently resorted to the sale of government securities to which the commercial banks have been generously contributing. Thus, open market operations in India have served, on the one hand as an instrument to make available more budgetary resources and on the other as an instrument to siphon off the excess liquidity in the system.

(iii) Variable Reserve Ratios:

Variable reserve ratios refer to that proportion of bank deposits that the commercial banks are required to keep in the form of cash to ensure liquidity for the credit created by them.

A rise in the cash reserve ratio results in a fall in the value of the deposit multiplier. Conversely, a fall in the cash reserve ratio leads to a rise in the value of the deposit multiplier.

A fall in the value of deposit multiplier amounts to a contraction in the availability of credit, and, thus, it may serve as an anti-inflationary measure.

A rise in the value of deposit multiplier, on the other hand, amounts to the fact that the commercial banks can create more credit, and make available more finance for consumption and investment

expenditure. A fall in the reserve ratios may, thus, work as anti-deflationary method of monetary control.

The Reserve Bank of India is empowered to change the reserve requirements of the commercial banks.

The Reserve Bank employs two types of reserve ratio for this purpose, viz. the Statutory Liquidity Ratio (SLR) and the Cash Reserve Ratio (CRR).

The statutory liquidity ratio refers to that proportion of aggregate deposits which the commercial banks are required to keep with themselves in a liquid form. The commercial banks generally make use of this money to purchase the government securities. Thus, the statutory liquidity ratio, on the one hand is used to siphon off the excess liquidity of the banking system, and on the other it is used to mobilise revenue for the government.

The Reserve Bank of India is empowered to raise this ratio up to 40 per cent of aggregate deposits of commercial banks. Presently, this ratio stands at 25 per cent.

The cash reserve ratio refers to that proportion of the aggregate deposits which the commercial banks are required to keep with the Reserve Bank of India. Presently, this ratio stands at 9 percent.

II. Qualitative Method:

The qualitative or selective methods of credit control are adopted by the Central Bank in its pursuit of economic stabilisation and as part of credit management.

(i) Margin Requirements:

Changes in margin requirements are designed to influence the flow of credit against specific commodities. The commercial banks generally advance loans to their customers against some security or securities offered by the borrower and acceptable to banks.

More generally, the commercial banks do not lend up to the full amount of the security but lend an amount less than its value. The margin requirements against specific securities are determined by the Central Bank. A change in margin requirements will influence the flow of credit.

A rise in the margin requirement results in a contraction in the borrowing value of the security and similarly, a fall in the margin requirement results in expansion in the borrowing value of the security.

(ii) Credit Rationing:

Rationing of credit is a method by which the Central Bank seeks to limit the maximum amount of loans and advances and, also in certain cases, fix ceiling for specific categories of loans and advances.

(iii) Regulation of Consumer Credit:

Regulation of consumer credit is designed to check the flow of credit for consumer durable goods. This can be done by regulating the total volume of credit that may be extended for purchasing specific durable goods and regulating the number of installments through which such loan can be spread. Central Bank uses this method to restrict or liberalise loan conditions accordingly to stabilise the economy.

(iv) Moral Suasion:

Moral suasion and credit monitoring arrangement are other methods of credit control. The policy of moral suasion will succeed only if the Central Bank is strong enough to influence the commercial banks.

In India, from 1949 onwards, the Reserve Bank has been successful in using the method of moral suasion to bring the commercial banks to fall in line with its policies regarding credit. Publicity is another method, whereby the Reserve Bank marks direct appeal to the public and publishes data which will have sobering effect on other banks and the commercial circles.

Effectiveness of Credit Control Measures:

The effectiveness of credit control measures in an economy depends upon a number of factors. First, there should exist a well-organised money market. Second, a large proportion of money in circulation should form part of the organised money market. Finally, the money and capital markets should be extensive in coverage and elastic in nature.

Extensiveness enlarges the scope of credit control measures and elasticity lends it adjustability to the changed conditions. In most of the developed economies a favourable environment in terms of the factors discussed before exists, in the developing economies, on the contrary, economic conditions are such as to limit the effectiveness of the credit control measures.

Credit Instruments:

People talk a little regretfully of the good old days when everybody was honest and a man's word was as good as his written bond. They forget that now the area of dealings has increased greatly.

Perhaps, man has become more selfish too, on account of the increase in the struggle for existence; hence almost always some record of transactions is kept in black and white.

Promissory Note:

The simplest form of a credit instrument is the promissory note. A promissory note (or pro-note for short) is a written promise from a buyer or a borrower to pay a certain sum of money to the creditor or his order. It is what we call IOU (I owe you), i.e., an acknowledgment of debt and an obligation to repay.

A typical promissory note is as below:

Promissory Note

Rs. 500 *June, 1, 1985*

Two months after date, I promise to pay M/s Singh and Company or order, the sum of Five Hundred Rupees only for value received with interest at the rate of 5 per cent.

20 P. Stamp

Shyam Lal
Per Pro M/s S. Chand & Co.

The words "value received" indicates that the document is the result of some purchase or loan. Interest must be mentioned; otherwise the pro-note is not good in law. Such a document can be used for any kind of transaction, personal or commercial.

Bill of exchange:

A bill of exchange is used in internal as well as foreign trade. It is an order by a seller to a buyer or by a creditor to a debtor to pay a certain sum of money to himself or to bearer or to another person named therein. The seller or the creditor who draws the bill is called the 'drawer'; the purchaser or the debtor on whom the bill is drawn is called the "drawee." The seller may order the payment to be made to a third person called the "payee".

Specimens of inland and foreign bills of exchange are given below:

An Inland Bill of Exchange

Rs. 20,000.00 *Jullundur,*
July 1, 985

Thirty days after date pay to M/s Singh & Co., *or bearer* the sum of twenty thousand rupees, for value received.

M/s The Premier Book Depot,
Chandni Chowk, Delhi.

For S. Chand & Co.
Shyam Lal
Proprietor.

In place of the payee's name any of these forms may be used:

1. Pay to bearer,

2. Pay to Dr. J. D. Varma or order, or

3. Pay to my order.

When the bill of exchange begins with "On demand", instead of "thirty days", it is a "demand bill' or "sight bill'.

A Foreign Bill of Exchange

Rs. 1,000.00 *July 1,1985*

Sixty days after sight of this First of Exchange (second and third of the same tenor and date, unpaid) pay to the order of the *Central Bank of India Ltd.*, the sum of Rs. 1,000 only for value received.

M/s A.V. Thomas & Sons,
Sheffield, England.

For M/s S. Chand & Co.
Rajendra Kumar Gupta,
Manager.

The drawer sends 'he bill to the drawee who "accepts" it by signing it and putting his office stamp on it. The bill now becomes a negotiable instrument and can be bought and sold in the market. The drawer can now discount it and change it into cash on paying a commission, called discount, at

some firm or bank. It may pass through several hands before it ultimately matures or falls due for payment, when the drawee pays his debt by honouring the bill.

If the drawee is not very well known, he secures the services of an Accepting House to sign and accept the Bill. Such houses or firms specialize in providing guarantees and charge a commission for their services. To perform such services the Accepting Houses have to keep themselves well informed of the financial position of the merchants on whose behalf they accept bills.

Advantages of a bill of exchange:

A bill of exchange thus performs the following important functions:

(i) "Neither the exporter nor the importer has to go without his money while the goods are in transit.—(Sayers) The exporter gets his money from a bank and the importer does not have to pay immediately. He pays it after he has sold the goods, and has funds in hand.

(ii) Funds lying idle in banks are invested in Bills of Exchange and are profitably employed. Banks particularly favour this form of investment, because money is not locked up for long and can be withdrawn easily. It is said that a good bank manager knows the difference between a bill and a mortgage. The bills discounted set up a regular stream of money flowing in and out.

(iii) Gold and silver are saved from being transported between countries. Exports are made to balance against imports through the bill market without movement of gold.

(iv) While the buyer pays in his own currency, the seller is paid in his own. Exchange Banks undertake the whole work and individuals are saved from all bother and inconvenience.

Hundis:

We, in India, are more familiar with hundis as they are commonly used. They are internal bills of exchange in one of our own languages, and have been prevalent in India long before the dawn of civilization elsewhere. Hundis are Darshani (sight bills) and Miadi or Muddati (time bills) on the basis of the time allowed to the debtor. Hundiana is the commission sometimes deducted by the lender from the amount advanced.

Specimens of the two types of hundis used in India (translated in English) are given below:

Muddati (or Miadi) Hundi

No.....M/s. Dinanath Kasturilal Stamp Vendors

No. 469
Rs. 1,000.00

Due Date *June 28, 1985*
Date April 28,

(60) Sixty days khara after this date I/we M/s *S. Chand & Co.*, promise to pay Messrs. Singh and Co., or order in *Delhi* the sum of Rs. 1,000.00 only for value received in cash.

(Signature) *Shyam Lal,*
Per Pro
M/s S. Chand & Co., Delhi
Through Krishan Chand Ahluwalia
(Broker)

Darshani Hundi

On demand please pay to *M/s. S. Chand & Co.*, Delhi the sum of Rs. 1,000 only for value received in cash.

To,

M/s. S. Chand & Co., Delhi,
Chandni Chowk
Delhi

Drawer's Signature *Rajendra Kumar Gupta*

Cheques:

A cheque is the most common instrument of credit and almost works like money. It is a written order on a printed form by a depositor (drawer) to his bank to pay a sum of" money to himself or to somebody else, whose name is entered on it, or to the bearer, i.e., the man who holds it (i.e., drawee). No bank ordinarily refuses to pay money for a cheque, provided it is correctly filled in, and there is enough money in the drawer's account with the bank. A specimen cheque is given below. The counterfoil with the drawer serves as a record of the payment.

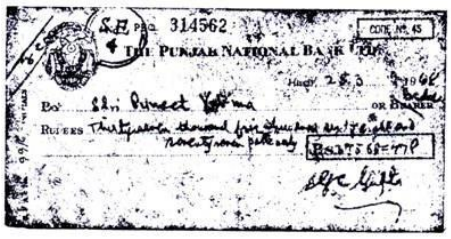
Cheques are of the following kinds:

Bearer Cheque:

Any one, who happens to have the cheque, can get it cashed. In this case, the bank need not worry as to who presents it at the counter. If a bearer cheque is lost, the finder can cash it unless the bank is notified in time to stop the payment. The drawer runs the risk of losing his money, and not the bank.

Order Cheque:

The word "bearer" after the payee's name is crossed out, as in the cheque form below, and the word "order" written instead. It is a safer form of payment, because the bank is responsible for paying the money to the right person. The person who presents the cheque at the counter has to prove his identity, before the proceeds of the cheque can be paid to him.



Crossed Cheque:

This is the safest form of payment as it cannot be cashed .it the bank counter. The payee cannot get the proceeds of the cheque in cash, lie can only get the sum transferred to his own or (after endorsing) to somebody else's account. A cheque is "crossed" by drawing two parallel lines across its face or in a corner and writing the words "& Co." between them. The specimen given above is crossed. If it is crossed "Payee's A/c.", then cash cannot be obtained from the bank; the amount of the cheque can only be credited to the payee's A/c.

Post-dated Cheque:

Such a cheque is a way of making payments sometime in the future. If you have to pay a hundred rupees to a friend after a month, you may draw a cheque in his favour and put down the future date. It can be cashed only on or after that date.

Blank Cheque:

It means an unlimited offer because the signature is put, whereas the space for the amount is left blank to be filled in by the drawee. Such cheques are usually handed over in romances or films! Nobody ordinarily signs a blank cheque.

Advantages of Cheques:

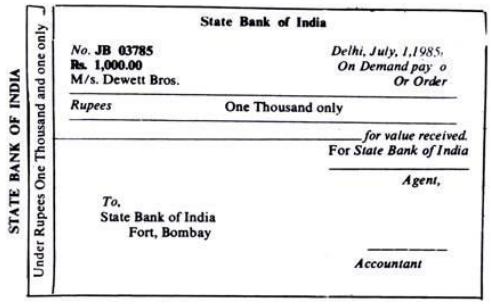
The cheque has economized the use of money. No cash need be paid. Moreover, its great convenience lies in that the payment can be exact to a paisa. There is no fear of loss when the cheque is crossed. Thus it is safe method of payment, besides being convenient. Again, the counterfoil of the cheque serves as a receipt and, therefore, ensures honesty.

The account of the transaction is with the bank and can be called for evidence, if needed. But it requires confidence in the drawer as well as the bank for acceptance. Since cheques are not legal tender, their acceptance is not compulsory.

Bank Drafts:

A cheque can also be used to remit funds to another place. But as the account is held in a different place, from where the cheque is presented, the latter branch of the bank normally gets in touch with the former before making the payment. To avoid this botheration, a banker's draft is used.

A bank draft is a cheque drawn by a bank on its own branch or on another bank requiring the latter to pay a specified amount to the person named in it or to the order thereof. The cheapest method of sending money is through a bank draft. A bank does not usually charge more than 10 P. per hundred rupees if the amount to be sent is not less than a thousand rupees, and if it has a branch at the place of payment.


STATE BANK OF INDIA

Under Rupees One Thousand and one only

State Bank of India

No. JB 03785
Rs. 1,000.00
M/s. Dewett Bros.

Delhi, July, 1,1985.
On Demand pay o
Or Order

Rupees One Thousand only

for value received.
For State Bank of India

Agent,

To,
State Bank of India
Fort, Bombay

Accountant

Clearing House:

One great advantage that follows from the use of cheques is that we do not have to carry a pocketful of notes or coins for our purchases. In countries, where people have developed the banking habit, rarely is a purchase paid for in cash, unless it is a very small sum. The people who are paid in cheques do not get them cashed but just pay them into their accounts at their bank. Thus, if both the persons have a common bank, a mere change in their bank balances completes the transaction.

When there are several banks in a locality and the two persons have accounts with different banks, the process is not so simple. Every bank receives during the course of the day cheques on other banks in favour of its customers. To send cash back and forth from one bank to another every day would be very troublesome. To avoid this trouble, the device of a Clearing House is used.

The representatives of the local banks meet at a fixed place after the working hours and balance their claims against one another. When simple book entries have cancelled most of the obligations, a small balance may be claimed by one bank from the other.

This is usually settled through a cheque on the Central bank (the Reserve Bank of India or the State Bank of India) with which all commercial banks have to keep accounts. There are Clearing Houses in important cities in India, the most important being those in Bomaby, Calcutta and Delhi.

Advantages of Credit:

The services rendered by credit to society are undoubtedly very great.

The following benefits of credit may be mentioned:

(i) Credit instruments replace metallic money to some extent. This means a great economy. Expenditure is avoided on precious metals for monetary purposes. Also, there is no loss arising from wear and tear of coins.

(ii) Trade and industry are financed mostly by the aid of credit. No industrial or commercial progress would be possible if the business were to be conducted strictly on a cash basis. In the absence of credit, trade would be on a very restricted scale.

(iii) Credit makes capital more productive. It is through credit that capital is transferred from persons who cannot use it themselves to persons who are in a position to do so. Without credit facilities, a good deal of capital would have remained unused.

(iv) Credit enables banks to lend far beyond their cash reserves. Thus they are able to make profits for themselves besides helping trade and industry. The banks can in this way ‘create money’.

(v) Credit instruments like bills of exchange facilitate payments not only between people living in the same country, but also between people belonging to different countries. This facilitates and extends international trade.

(vi) Men of enterprise and business ability are enabled by credit to launch business undertakings, even though their own financial resources may be meager. In this way, credit helps the

development of trade and industry in the country. Without its aid, a good deal of business talent would have been wasted.

Abuses of Credit:

Credit is a very delicate instrument, and, as such, it has to be handled with utmost care. Unless the use of credit is kept within sensible limits, it is/likely to prove very dangerous.

4

FINANCING

Types of financing - Short term borrowing - Long term borrowing - Internal generation of funds - External commercial borrowings - Assistance from government budgeting support and international finance corporations - analysis of financial statement – Balance Sheet - Profit and Loss account - Funds flow statement.

4.1 Types of financing - Short term borrowing - Long term borrowing - Internal generation of funds - External commercial borrowings

There are two main sources of finance:

Equity Financing - money invested into your business in exchange for a share in its ownership.

Debt Financing - usually in the form of a loan where the principal amount borrowed and interest accumulated on the loan needs to be paid.

There are a number of sources of equity finance available to business. This includes:

Personal Savings: money that you personally invest into the business.

Friends and Relatives: people that you personally know invest into the business to lend assistance.

Angel Investors: wealthy individuals who lend their personal finances to a business in return for a share in its ownership.

Venture Capital: applications to professionally managed third parties such as a superannuation fund who lend finance based on a good business plan.

There are also a range of opportunities to secure debt financing such as:

Leasing: hiring out equipment for a regular fee for the duration of the lease term, with no outlay to actually purchase equipment.

Term Loans: paid back to a financial institution over an agreed period.

Credit Cards: easy to acquire financial institution loans that carry high interest rates.

Bank Overdrafts: where you withdraw more than your account contains, with interest calculated on your outstanding balance.

Commercial Bills: short term loans where the amount must be paid in full upon reaching expiry.

Loan Programs: short term loans set up to assist small business with initial start up expenses.

Trade Credit: deferred payment of goods and services purchased form a supplier.

Debt:

Debt is money a company has borrowed and must pay back to the lender, often with interest, or money that is owed for goods and services already received by a company. In accounting, debt is classified as either short-term debt or long-term debt.

'Short-Term Debt'

An account shown in the current liabilities portion of a company's balance sheet. This account is comprised of any debt incurred by a company that is due within one year. The debt in this account is usually made up of short-term bank loans taken out by a company.

The value of this account is very important when determining a company's financial health. If the account is larger than the company's cash and cash equivalents, this suggests that the company may be in poor financial health and does not have enough cash to pay off its short-term debts. Although short-term debts are due within a year, there may be a portion of the long-term debt included in this account. This portion pertains to payments that must be made on any long-term debt throughout the year.**'Long-Term Debt'**

Long-term debt consists of loans and financial obligations lasting over one year. Long-term debt for a company would include any financing or leasing obligations that are to come due in a greater than 12-month period. Long-term debt also applies to governments: nations can also have long-term debt.

Financial and leasing obligations, also called long-term liabilities, or fixed liabilities, would include company bond issues or long-term leases that have been capitalized on a firm's balance sheet. Often, a portion of these long-term liabilities must be paid within the year; these are categorized as current liabilities, and are also documented on the balance sheet. The balance sheet can be used to track the company's debt and profitability.

On a balance sheet, the company's debts are categorized as either financial liabilities or operating liabilities. Financial liabilities refer to debts owed to investors or stockholders; these include bonds and notes payable. Operating liabilities refer to the leases or unsettled payments incurred in order to maintain facilities and services for the company. These include everything from rented building

spaces and equipment to employee pension plans. For more on how a company uses its debt, see Financial Statements: Long-Term Liabilities.

Bonds are one of the most common types of long-term debt. Companies may issuing bonds to raise funds for a variety of reasons. Bond sales bring in immediate income, but the company ends up paying for the use of investors' capital due to interest payments.

EXTERNAL COMMERCIAL BORROWINGS & TRADE CREDITS

FEMA guidelines provide Indian companies to access funds from abroad by following methods:-

External Commercial Borrowings (ECB):-

It refers to commercial loans in the form of bank loans, buyers' credit, suppliers' credit, securitized instruments (e.g. floating rate notes and fixed rate bonds, non-convertible, optionally convertible or partially convertible preference shares) availed of from non-resident lenders with a minimum average maturity of 3 years.

b) Foreign Currency Convertible Bonds (FCCBs):-

It refers to a bond issued by an Indian company expressed in foreign currency, and the principal and interest in respect of which is payable in foreign currency.

c) Preference shares-

These instruments are considered as debt and denominated in Rupees and rupee interest rate will be based on the swap equivalent of LIBOR plus spread.

d) Foreign Currency Exchangeable Bond (FCEB):-

FCEB is a bond expressed in foreign currency, the principal and interest in respect of which is payable in foreign currency, issued by an Issuing Company and subscribed to by a person who is a resident outside India, in foreign currency and exchangeable into equity share of another company, to be called the Offered Company, in any manner, either wholly, or partly or on the basis of any equity related warrants attached to debt instruments. The FCEB may be denominated in any freely convertible foreign currency. ECB can be accessed under two routes, viz.:-

Automatic Route:-

• Access of funds under Automatic Route does not require RBI/GOI approval. Corporate including hotel, hospital, software sectors (registered under the Companies Act 1956) and Infrastructure Finance Companies (IFCs) except financial intermediaries such as banks, FIs, HFCs, and NBFCs are eligible to raise ECB. Units in SEZs are allowed to raise ECB for their captive requirements. NGOs engaged in micro finance activities are eligible to avail of ECB (subject to certain conditions). Trusts and Non-Profit making organizations are not eligible to raise ECB.

• ECB can be raised by borrowers from internationally recognized sources such as

(i) international banks,

(ii) international capital markets,

(iii) multilateral financial institutions (such as IFC, ADB, CDC, etc.)/ Regional Financial Institutions and Government owned Development Financial Institutions,

(iv) Export Credit Agencies,

(v) 2 Suppliers of Equipments,

(vi) Foreign Collaborators and

(vii) Foreign Equity Holders (other than erstwhile Overseas Corporate Bodies).

• Overseas organizations and individuals may provide ECB to NGOs engaged in micro finance activities subject to complying with some safeguards outlined in the RBI circular.

Amount & Maturity Category

Category	Amount (USD) per unit/ per financial year	Average Maturity
Corporate other than those in services sector viz. hotel, hospital, and software.	750 Mn. or equivalent	*Upto USD 20 Mn. of equivalent in a financial year – 3 years (Can have put/call option) *Above USD 20 Mn. and upto 750 Mn. – 5 years
Corporate in service sector i.e. hotel, hospital, and software (Proceeds of ECBs should not be used for acquisition of Land)	Upto 200 Mn. or equivalent	--Same --
NGOs engaged in micro finance activities	10 Mn. or equivalent (Forex exposure to be fully hedged)	--Same --

All-in-cost ceilings

• All-in-cost includes rate of interest, other fees and expenses in foreign currency except commitment fee, pre-payment fee, and fees payable in Indian Rupees. The payment of withholding tax in Indian Rupees is excluded for calculating the all-in-cost.

Average Maturity Period	All-in-cost ceiling over 6 months LIBOR*
Three years and up to five years	350 bps
More than 5 years	500 bps

* for the respective currency of borrowing or applicable benchmark

End use

• ECBs can be raised for investment (import of capital goods as classified by DGFT in Foreign Trade Policy (FTP)) in new projects, modernization/expansion of existing units in industrial and service sectors including infrastructure sector.

• Overseas direct investment in Joint Ventures (JV)/Wholly Owned Subsidiaries (WOS) subject to the existing guidelines on Indian Direct Investment in JV/ WOS abroad.

• First stage acquisition of shares in the disinvestment process and also in the mandatory second stage offer to the public under the Government's disinvestment programme of PSU shares.

• NBFCs categorized as Infrastructure Financing Companies (IFC) are permitted to avail ECBs including outstanding in existing ECBs upto 50% of their owned funds under Automatic Route for on lending to infrastructure sector and beyond 50% of owned funds under Approval Route.

• For lending to self-help groups or for micro-credit or for bonafide micro finance activity including capacity building by NGOs engaged in micro finance activities, etc.

Restrictions

• Utilization for on-lending or investment in capital market or acquiring a company (or a part thereof) in India by a corporate, investment in real estate sector, for working capital, general corporate purpose and repayment of existing Rupee loans.

• Issuance of guarantee, standby letter of credit, letter of undertaking or letter of comfort by banks, FIs and NBFCs from India relating to ECB.

• The borrower has the option to offer security against the ECB. Creation of charge over immovable assets and financial securities, such as shares, in favour of the overseas lender is subject to FEMA regulations and ECB guidelines. Other provisions

• Borrowers are permitted to either park the ECB proceeds abroad or to remit these funds to India. ECB proceeds parked in various liquid assets as per regulation can be invested in Treasury Bills and other monetary instruments of one year maturity and having minimum rating etc. The funds may be invested in such a way that the investments can be liquidated as and when funds are required by the borrower in India.

• ECB funds may also be repatriated to India for credit to the borrowers' Rupee accounts with banks (AD) in India, pending utilization for permissible end-uses.

• Upon compliance of minimum maturity period applicable to the loan, prepayment of ECB up to USD 500 Mn. can be made by AD banks without prior approval of RBI. • An existing ECB may be refinanced by raising a fresh ECB subject to the fresh one raised is at a lower all-in-cost and the outstanding maturity of the original ECB is maintained.

• The designated AD bank has the general permission to make remittances of installments of principal, interest and other charges in conformity with the ECB guidelines. 4 Borrowers are required to enter into an agreement with recognized lender in compliance of ECB guidelines without RBI approval and obtain a Loan Register Number (LRN) from RBI before drawing the ECB as per the procedure laid down in the policy.

B. APPROVAL ROUTE

Proposals falling under the category include:-

On lending by the EXIM Bank for specific purposes (case to case basis).

b) Banks and financial institutions which had participated in the textile or steel sector restructuring package as approved by the Government.

c) ECB with minimum average maturity of 5 years by NBFC to finance import of infrastructure equipment for leasing to infrastructure projects.

d) Infrastructure Finance Companies (IFCs) i.e. NBFCs, categorized as IFCs, by RBI (beyond 50% of their owned funds) for on-lending to the infrastructure sector as defined under the ECB policy and subject to compliance of certain stipulations.

e) Foreign Currency Convertible Bonds (FCCBs) by Housing Finance Companies.

f) Special Purpose Vehicles (SPV) or any other entity notified by the RBI, set up to finance infrastructure companies / projects exclusively.

g) Financially solvent Multi-State Co-operative Societies engaged in manufacturing.

h) SEZ developers for providing infrastructure facilities within SEZ.

i) Eligible Corporate under automatic route other than in the services sector viz. hotels, hospitals and software sector can avail of ECB beyond USD 750 million per financial year.

j) Corporate in the service sector for availing ECB beyond USD 200 Mn. per financial year.

k) Cases falling outside the purview of the automatic route limits and maturity indicated, etc. ECB can be availed from the recognized lenders as explained under Automatic Route.

Amount and Maturity

• Eligible borrowers under the automatic route other than corporate in the services sector viz. hotel, hospital and software can avail of ECB beyond USD 750 or equivalent per financial year.

• Corporate in the service sector beyond ECB 200 Mn. for permissible end-uses.

All-in-cost

All-in-cost ceilings are the same as that of ECBs under Automatic Route.

End-use

• End-use would be the same for the funds raised under Automatic Route.

• The payment by eligible borrowers in the Telecom sector, for spectrum allocation may, initially, be met out of Rupee resources by the successful bidders, to be refinanced with a long-term ECB, under the approval route, subject to certain conditions outlined in the Circular.

Restrictions

Restrictions are the same as that of ECB under Automatic Route.

Other Provisions:-

• Indian Infrastructure companies (as defined under the extant ECB policy) are permitted to import capital goods by availing of short term credit (including buyers' / suppliers' credit) in the nature of 'bridge finance', under the approval route, subject to the conditions prescribed.

• Airline companies registered under the Companies Act, 1956 and possessing scheduled operator permit license from DGCA for passenger transportation are eligible to avail of ECB for working capital with a minimum average maturity period of three years within the overall ceiling of USD one billion for the entire civil aviation sector and the individual maximum permissible ceiling of USD 300 million. The liability should be extinguished from foreign exchange earnings of the companies only.

• Issuance of guarantee, standby letter of credit, letter of undertaking or letter of comfort by banks, FIs and NBFCs from India relating to ECB in case of SME as also for facilitating capacity expansion and technological upgradation in Indian Textile industry can be considered on merit subject to prudential norms.

• The borrower has the option to offer security against the ECB. Creation of charge over immoveable assets and financial securities, such as shares, in favour of the overseas lender is subject to FEMA regulations and ECB guidelines.

• Borrowers are permitted to either park the ECB proceeds abroad for foreign currency expenditure pending utilization or to remit these funds to India for rupee expenditure pending utilization. ECB proceeds parked abroad can be utilized in various liquid assets as per regulation, and for investment in Treasury Bills and other monetary instruments of one year maturity and having minimum rating etc. The funds should be invested in such a way that the investments can be liquidated as and when funds are required by the borrower in India.

• Upon compliance of minimum maturity period applicable to the loan, prepayment of ECB up to USD 500 Mn. can be made by AD banks without prior approval of RBI. Pre-payment of ECB for amounts exceeding USD 500 Mn. would be considered by the Reserve Bank under the Approval Route.

• Existing ECB may be refinanced by raising a fresh ECB subject to the condition that the fresh ECB is raised at a lower all-in-cost and the outstanding maturity of the original ECB is maintained.

• The designated AD bank has the general permission to make remittances of installments of principal, interest and other charges in conformity with the ECB guidelines.

Foreign Currency Exchangeable Bonds

• The Issuing Company shall be part of the promoter group of the Offered Company and shall hold the equity share/s being offered at the time of issuance of FCEB. The Offered Company shall be a listed company, which is engaged in a sector eligible to receive FDI and eligible to issue or avail of FCCB or ECB.

• Entities complying with the FDI policy and adhering to the sectoral caps at the time of issue of FCEB can subscribe to FCEB. Prior approval of the Foreign Investment Promotion Board, wherever required is to be obtained.

• An Indian company, which is not eligible to raise funds from the Indian securities market, including a company which has been restrained from accessing the securities market by the SEBI are not be eligible to issue FCEB. Entities prohibited to buy, sell or deal in securities by the SEBI will not be eligible to subscribe to FCEB.

End Use

• The proceeds of FCEB may be invested by the issuing company overseas by way of direct investment including in Joint Ventures or Wholly Owned Subsidiaries abroad subject to the existing guidelines on overseas investment in Joint Ventures / Wholly Owned Subsidiaries.

• The proceeds of FCEB may be invested by the issuing company in the promoter group companies which may utilize the proceeds in accordance with end-uses prescribed under the ECB policy.

• The promoter group company receiving such investments will not be permitted to utilize the proceeds for investments in the capital market or in real estate in India. All-in-cost: The rate of interest payable on FCEB and the issue expenses incurred in foreign currency shall be within the all-in-cost ceiling as specified by RBI under the ECB policy.

Other provisions:

• Minimum maturity of FCEB shall be five years. The exchange option can be exercised at any time before redemption. While exercising the exchange option, the holder of the FCEB shall take delivery of the offered shares. Cash (Net) settlement of FCEB shall not be permissible.

• The proceeds of FCEB may be retained and/or deployed overseas by the issuing / promoter group companies in accordance with the policy for the ECB or repatriated to India for credit to the borrowers' Rupee accounts with banks in India pending utilization for permissible end-uses.

• Issuance of FCEB requires prior approval of the RBI under the Approval Route for raising ECB.

TAKE-OUT FINANCE THROUGH ECB

• Existing guidelines do not permit refinancing of domestic Rupee Loans with ECB with the exception of infrastructure sector for which Take-out financing through ECB is presently available to eligible corporate borrowers who availed Rupee Loans from domestic banks for development of new projects in sea port and airport, roads including bridges and power sectors. The Scheme is subject to certain conditions viz.

The borrower should have a tripartite agreement with domestic banks and overseas recognized lenders for either a conditional or unconditional take-out of the loan within three years of the scheduled Commercial Operation Date (COD). The scheduled date of occurrence of the take-out should be clearly mentioned in the agreement.

b) The loan should have a minimum average maturity period of seven years.

c) The domestic bank financing the infrastructure project should comply with the extant prudential norms relating to take-out financing.

d) The fee payable, if any, to the overseas lender until the take-out shall not exceed 100 bps per annum.

e) On take-out, the residual loan agreed to be taken- out by the overseas lender would be considered as ECB and the loan should be designated in a convertible foreign currency and all extant norms relating to ECB should be complied with.

f) Domestic banks / Financial Institutions will not be permitted to guarantee the take-out finance, etc. Compliance with ECB Guidelines The primary responsibility rests with the borrower as regards and ECB raised/utilized and they are in conformity with the ECB guidelines/RBI regulations/directions. Any contravention of these would attract penal action under FEMA.

4.2 Assistance from government budgeting support and international finance corporations - analysis of financial statement

Budget Support

Different donor organisations use different definitions of budget support. In the most commonsense, budget support typically refers to predictable, annual, medium-term resource flows that are channeled to the recipient country using its own financial management system and budget procedures. Budget support is typically based on an agreed set of performance indicators in the form of institutional or policy reform measures or outcome indicators.

While there is not yet an agreed definition of budget support, the following terms are those used most frequently in discussion about it. It is useful to list them here and make some comparisons for better understanding the budget support concept. The definitions below take into account the different positions of donor organisations engaged in the use of these instruments.

International finance corporation:

The International Finance Corporation (IFC) is an international financial institution that offers investment, advisory, and asset management services to encourage private sector development in developing countries. The IFC is a member of the World Bank Group and is headquartered in Washington, D.C., United States. It was established in 1956 as the private sector arm of the World Bank Group to advance economic development by investing in strictly for-profit and commercial projects that purport to reduce poverty and promote development.

The IFC's stated aim is to create opportunities for people to escape poverty and achieve better living standards by mobilizing financial resources for private enterprise, promoting accessible and competitive markets, supporting businesses and other private sector entities, and creating jobs and delivering necessary services to those who are poverty-stricken or otherwise vulnerable. Since 2009, the IFC has focused on a set of development goals that its projects are expected to target. Its goals are to increase sustainable agriculture opportunities, improve health and education, increase access to financing for microfinance and business clients, advance infrastructure, help small businesses grow revenues, and invest in climate health.

The IFC is owned and governed by its member countries, but has its own executive leadership and staff that conduct its normal business operations. It is a corporation whose shareholders are member governments that provide paid-in capital and which have the right to vote on its matters. Originally more financially integrated with the World Bank Group, the IFC was established separately and eventually became authorized to operate as a financially autonomous entity and make independent investment decisions. It offers an array of debt and equity financing services and helps companies face their risk exposures, while refraining from participating in a management capacity. The corporation also offers advice to companies on making decisions, evaluating their

impact on the environment and society, and being responsible. It advises governments on building infrastructure and partnerships to further support private sector development.

The corporation is assessed by an independent evaluator each year. In 2011, its evaluation report recognized that its investments performed well and reduced poverty, but recommended that the corporation define poverty and expected outcomes more explicitly to better-understand its effectiveness and approach poverty reduction more strategically. The corporation's total investments in 2011 amounted to $18.66 billion. It committed $820 million to advisory services for 642 projects in 2011, and held $24.5 billion worth of liquid assets. The IFC is in good financial standing and received the highest ratings from two independent credit rating agencies in 2010 and 2011.

Financial Statement Analysis

Financial statement analysis involves the identification of the following items for a company's financial statements over a series of reporting periods:

Trends

Create trend lines for key items in the financial statements over multiple time periods, to see how the company is performing. Typical trend lines are for revenues, the gross margin, net profits, cash, accounts receivable, and debt.

Proportion analysis

An array of ratios are available for discerning the relationship between the size of various accounts in the financial statements. For example, you can calculate a company's quick ratio to estimate its ability to pay its immediate liabilities, or its debt to equity ratio to see if it has taken on too much debt. These analyses are frequently between the revenues and expenses listed on the income statement and the assets, liabilities, and equity accounts listed on the balance sheet.

Financial statement analysis is an exceptionally powerful tool for a variety of users of financial statements, each having different objectives in learning about the financial circumstances of the entity.

Users of Financial Statement Analysis

There are a number of users of financial statement analysis. They are:

Creditors

Anyone who has lent funds to a company is interested in its ability to pay back the debt, and so will focus on various cash flow measures.

Investors

Both current and prospective investors examine financial statements to learn about a company's ability to continue issuing dividends, or to generate cash flow, or to continue growing at its historical rate (depending upon their investment philosophies).

Management

The company controller prepares an ongoing analysis of the company's financial results, particularly in relation to a number of operational metrics that are not seen by outside entities (such as the cost per delivery, cost per distribution channel, profit by product, and so forth).

Regulatory authorities

If a company is publicly held, its financial statements are examined by the Securities and Exchange Commission (if the company files in the United States) to see if its statements conform to the various accounting standards and the rules of the SEC.

Methods of Financial Statement Analysis

There are two key methods for analyzing financial statements. The first method is the use of horizontal and vertical analysis. Horizontal analysis is the comparison of financial information over a series of reporting periods, while vertical analysis is the proportional analysis of a financial statement, where each line item on a financial statement is listed as a percentage of another item. Typically, this means that every line item on an income statement is stated as a percentage of gross sales, while every line item on a balance sheet is stated as a percentage of total assets. Thus, horizontal analysis is the review of the results of multiple time periods, while vertical analysis is the review of the proportion of accounts to each other within a single period. The following links will direct you to more information about horizontal and vertical analysis:

Horizontal analysis

Vertical analysis

The second method for analyzing financial statements is the use of many kinds of ratios. You use ratios to calculate the relative size of one number in relation to another. After you calculate a ratio, you can then compare it to the same ratio calculated for a prior period, or that is based on an industry average, to see if the company is performing in accordance with expectations. In a typical financial statement analysis, most ratios will be within expectations, while a small number will flag potential problems that will attract the attention of the reviewer.

There are several general categories of ratios, each designed to examine a different aspect of a company's performance. The general groups of ratios are:

1. Liquidity ratios

This is the most fundamentally important set of ratios, because they measure the ability of a company to remain in business. Click the following links for a thorough review of each ratio.

Cash coverage ratio

Shows the amount of cash available to pay interest.

Current ratio

Measures the amount of liquidity available to pay for current liabilities.

Quick ratio

The same as the current ratio, but does not include inventory.

Liquidity index

Measures the amount of time required to convert assets into cash.

2. Activity ratios

These ratios are a strong indicator of the quality of management, since they reveal how well management is utilizing company resources. Click the following links for a thorough review of each ratio.

Accounts payable turnover ratio

Measures the speed with which a company pays its suppliers.

Accounts receivable turnover ratio

Measures a company's ability to collect accounts receivable.

Fixed asset turnover ratio

Measures a company's ability to generate sales from a certain base of fixed assets.

Inventory turnover ratio

Measures the amount of inventory needed to support a given level of sales.

Sales to working capital ratio

Shows the amount of working capital required to support a given amount of sales.

Working capital turnover ratio

Measures a company's ability to generate sales from a certain base of working capital.

3. Leverage ratios

These ratios reveal the extent to which a company is relying upon debt to fund its operations, and its ability to pay back the debt. Click the following links for a thorough review of each ratio.Debt to equity ratio. Shows the extent to which management is willing to fund operations with debt, rather than equity.

Debt service coverage ratio

Reveals the ability of a company to pay its debt obligations.

Fixed charge coverage

Shows the ability of a company to pay for its fixed costs.

4. Profitability ratios

These ratios measure how well a company performs in generating a profit. Click the following links for a thorough review of each ratio.

Breakeven point

Reveals the sales level at which a company breaks even.

Contribution margin ratio

Shows the profits left after variable costs are subtracted from sales.

Gross profit ratio

Shows revenues minus the cost of goods sold, as a proportion of sales.

Margin of safety

Calculates the amount by which sales must drop before a company reaches its breakeven point.

Net profit ratio

Calculates the amount of profit after taxes and all expenses have been deducted from net sales.

Return on equity

Shows company profit as a percentage of equity.

Return on net assets

Shows company profits as a percentage of fixed assets and working capital.

Return on operating assets

Shows company profit as percentage of assets utilized.

Problems with Financial Statement Analysis

While financial statement analysis is an excellent tool, there are several issues to be aware of that can interfere with your interpretation of the analysis results. These issues are:

Comparability between periods

The company preparing the financial statements may have changed the accounts in which it stores financial information, so that results may differ from period to period. For example, an expense may appear in the cost of goods sold in one period, and in administrative expenses in another period.

Comparability between companies

An analyst frequently compares the financial ratios of different companies in order to see how they match up against each other. However, each company may aggregate financial information differently, so that the results of their ratios are not really comparable. This can lead an analyst to draw incorrect conclusions about the results of a company in comparison to its competitors.

Operational information

Financial analysis only reviews a company's financial information, not its operational information, so you cannot see a variety of key indicators of future performance, such as the size of the order backlog, or changes in warranty claims. Thus, financial analysis only presents part of the total picture.

4.3 Balance Sheet - Profit and Loss account - Funds flow statement.

Balance sheet:

A Balance Sheet may well be described as a statement of assets and liabilities including capital amount.It reveals the assets and liabilities and capital amount as on a periodic of time. It highlights the assets possessed by a business and sources of funds used in periodic change rather than continuous one. In this sense it is statics where as business is dynamic.

Profit or Loss Account:

The income statement and profit or loss account are not different but are interchangeably used.Where as in U.S.A.income statement is a popular usage in U.K.it is more commonly referred to as profit and loss account.According to AICPA terminology,income statement is defined as a statement which shows the principal elements the positive and negative in the derivations of income or loss the claims against income and the resulting net income or loss of accounting unit.It simple words an income statement shows revenue and expenses of an accounting period.It matches revenue with cost.If the revenue exceeds the cost it implies the profitability of business and of cost exceed revenue it implies the loss suffered by the business.The same view has been expressed by HARAY &GUTHMAN when he wrote that "the statement of profit or loss is condensed and classified record of gains and losses causing changes in the owners interest in the business for a period of time.

The purpose of the profit and loss account is to:

Show whether a business has made a PROFIT or LOSS over a financial year.

Describe how the profit or loss arose – e.g. Categorizing costs between "cost of sales" and operating costs.

Funds Flow Statement

Funds Flow Statement is a statement prepared to analyse the reasons for changes in the Financial Position of a Company between 2 Balance Sheets. It shows the inflow and outflow of funds i.e. Sources and Applications of funds for a particular period. In other words, a Funds Flow Statement is prepared to explain the changes in the Working Capital Position of a Company. There are 2 types of Inflows of Funds:-

Long Term Funds raised by Issue of Shares, Debentures or Sale of Fixed Assets

2. Funds generated from Operations

If the Long Term Fund requirements of a company are met just out of the Long Term Sources of Funds, then the whole fund generated from operations will be represented by increase in Working

Capital. However, if the Funds generated from Operations are not sufficient to bridge a gap of Long Term Fund Requirements, then there will be a decline in Working Capital.

Difference between Funds Flow Statement & Cash Flow Statement

Both Funds flow statement and Cash Flow Statement are used in analysis of part transactions of a business firm. However, there are some differences between the two as given below:-

Funds Flow Statement is based on the Accrual System of Accounting. However, in case of Cash Flow Statement only the transactions effecting Cash or Cash equivalents are taken into consideration

Funds Flow Statement analyses the Sources and Application of Funds of Long Term nature and the Net Increase or Decrease in Long Term Funds will be reflected on the Working Capital of the firm. The Cash Flow Statement only considers the Increase or Decrease in Current Assets or Current Liabilities in calculating the Cash Flow of Funds from Operations

3. Funds Flow Statement is more useful for Long Term Financial Planning. Cash Flow Analysis is more useful for identifying and correcting the liquidity problems of the firm.

Steps for Preparing Funds Flow Statement:

The steps involved in preparing the statement are as follows:

1. Determine the change (increase or decrease) in working capital.

2. Determine the adjustments account to be made to net income.

3. For each non-current account on the balance sheet, establish the increase or decrease in that account. Analyze the change to decide whether it is a source (increase) or use (decrease) of working capital.

4. Be sure the total of all sources including those from operations minus the total of all uses equals the change found in working capital in Step 1.

General Rules for Preparing Funds Flow Statement:

The following general rules should be observed while preparing funds flow statement:

1. Increase in a current asset means increase (plus) in working capital.

2. Decrease in a current asset means decrease (minus) in working capital.

3. Increase in a current liability means decrease (minus) in working capital.

4. Decrease in a current liability means increase (plus) in working capital.

5. Increase in current asset and increase in current liability does not affect working capital.

6. Decrease in current asset and decrease in current liability does not affect working capital.

7. Changes in fixed (non-current) assets and fixed (non-current) liabilities affects working capital.

Format of Funds Flow Statement:

A funds flow statement can be prepared in statement form or 'T' form.

Both the formats are given below:

Funds Flow Statement (Statement Form)

A.	**Sources of Funds:**	
	(*i*) Funds from Business Operations	
	(*ii*) Sale of Fixed Asset	
	(*iii*) Issue of Shares	
	(*iv*) Issue of Debentures	
	(*v*) Long-term borrowings	
	Total Sources	
B.	**Application of Funds:**	
	(*i*) Loss from Business Operation	
	(*ii*) Payment of Dividend	
	(*iii*) Payment of Tax	
	(*iv*) Purchase of Fixed Asset	
	(*v*) Payment of Long-term Loans	
	(*vi*) Redemption of Debentures	
	(*vii*) Redemption of Preference Shares	
	Total uses	
	Not increase/decrease in Working Capital (Total sources minus Total uses)	

Funds Flow Statement ('T' Form)

Source of Funds	₹	Application of Funds	₹
(*i*) Funds from Business Operations		(*i*) Loss from Business Operations	
(*ii*) Sale of Fixed Assets		(*ii*) Payment of Dividend	
(*iii*) Issue of Shares		(*iii*) Payment of Tax	
(*iv*) Issue of Debentures		(*iv*) Purchase of Fixed Assets	
(*v*) Long-term Borrowings		(*v*) Payment of Long-term Loans	
(*vi*) Decrease in Working Capital (If application amount is more than the sources amount)		(*vi*) Redemption of Debentures	
		(*vii*) Redemption of Preference Shares	
		(*viii*) Increase in Working Capital (if sources are more than the application amount)	
Total		Total	

5

COST AND BREAK EVEN ANALYSİS

Types of costing – traditional costing approach - activity base costing - Fixed Cost – variable cost – marginal cost – cost output relationship in the short run and in long run – pricing practice – full cost pricing – marginal cost pricing – going rate pricing – bid pricing – pricing for a rate of return – appraising project profitability –internal rate of return – pay back period – net present value – cost benefit analysis – feasibility reports – appraisal process – technical feasibility economic feasibility – financial feasibility. Break even analysis - basic assumptions – break even chart – managerial uses of break even analysis.

5.1 Types of costing – traditional costing approach - activity base costing

Methods of Costing

Different industries follow different methods to establish the cost of their product. This varies by the nature and specifics of each business. There are different principles and procedures for performing the costing. However, the basic principles and procedures of costing remain the same. Some of the methods are mentioned below:

Unit costing

Job costing

Contract costing

Batch costing

Operating costing

Process costing

Multiple costing

Uniform costing

Different Methods of Costing

Unit costing:

This method is also known as "single output costing." This method of costing is used for products that can be expressed in identical quantitative units. Unit costing is suitable for products that are manufactured by continuous manufacturing activity: for example, brick making, mining, cement manufacturing, dairy operations, or flour mills. Costs are ascertained for convenient units of output.

Job costing:

Under this method, costs are ascertained for each work order separately as each job has its own specifications and scope. Job costing is used, for example, in painting, car repair, decoration, and building repair.

Contract costing:

Contract costing is performed for big jobs involving heavy expenditure, long periods of time, and often different work sites. Each contract is treated as a separate unit for costing. This is also known as terminal costing. Projects requiring contract costing include construction of bridges, roads, and buildings.

Batch costing:

This method of costing is used where units produced in a batch are uniform in nature and design. For the purpose of costing, each batch is treated as an individual job or separate unit. Industries like bakeries and pharmaceuticals usually use the batch costing method.

Operating costing or service costing:

Operating or service costing is used to ascertain the cost of particular service-oriented units, such as nursing homes, buses, or railways. Each particular service is treated as a separate unit in operating costing. In the case of a nursing home, a unit is treated as the cost of a bed per day, while, for busses, operating cost for a kilometer is treated as a unit.

Process costing:

This kind of costing is used for products that go through different processes. For example, the manufacturing of clothes involves several processes. The first process is spinning. The output of that spinning process, yarn, is a finished product which can either be sold on the market to weavers, or used as a raw material for a weaving process in the same manufacturing unit. To find out the cost of the yarn, one needs to determine the cost of the spinning process.

In the second step, the output of the weaving process, cloth, can also can be sold as a finished product in the market. In this case, the cost of cloth needs to be evaluated. The third process is converting the cloth to a finished product, for example a shirt or pair of trousers. Each process that can result in either a finished good or a raw material for the next process must be evaluated

separately. In such multi-process industries, process costing is used to ascertain the cost at each stage of production.

Multiple costing or composite costing:

When the output is comprised of many assembled parts or components, as with television, motor cars, or electronics gadgets, costs have to be ascertained for each component, as well as with the finished product. Such costing may involve different methods of costing for different components. Therefore, this type of costing is known as composite costing or multiple costing.

Uniform costing:

This is not a separate method of costing, but rather a system in which a number of firms in the same industry use the same method of costing, using agreed-on principles and standard accounting practices. This helps in setting the price of the product and in inter-firm comparisons..

Approaches to Cost Accounting

Different cost accounting techniques are used in different industries to analyze and present costs for the purposes of control and managerial decisions. The generally-used types of costing are as follows:

Marginal costing:

Marginal costing entails the allocation of only variable costs, i.e. direct materials, direct labour and other direct expenses, and variable overheads to the production. It does not take into account the fixed cost of production. This type of costing emphasizes the distinction between fixed and variable costs.

Absorption costing:

In absorption costing, the full costs (that is, both fixed and variable costs) are absorbed into production.

Standard costing:

In standard costing, a cost is predicted in advance of production, based on predetermined standards under a given set of operating conditions. Standard costs are compared with actual costs periodically, and revised to avoid losses due to outdated costing.

Historical costing:

Historical costing, unlike standard costing, uses actual costs, determined after they have been incurred. Almost all organizations use the historical costing system of accounting for costs.

Traditional costing approach

The traditional method of cost accounting refers to the allocation of manufacturing overhead costs to the products manufactured. The traditional method (also known as the conventional method) assigns or allocates the factory's indirect costs to the items manufactured on the basis of volume such as the number of units produced, the direct labor hours, or the production machine hours. We will use machine hours in our discussion.

By using only machine hours to allocate the manufacturing overhead to products, it is implying that the machine hours are the underlying cause of the factory overhead. Traditionally, that may have been reasonable or at least sufficient for the company's external financial statements. However, in recent decades the manufacturing overhead has been driven or caused by many other factors. For example, some customers are likely to demand additional manufacturing operations for their diverse products. Other customers simply want great quantities of uniform products.

If a manufacturer wants to know the true cost to produce specific products for specific customers, the traditional method of cost accounting is inadequate. Activity based costing (ABC) was developed to overcome the shortcomings of the traditional method. Instead of just one cost driver such as machine hours, ABC will use many cost drivers to allocate a manufacturer's indirect costs. A few of the cost drivers that would be used under ABC include the number of machine setups, the pounds of material purchased or used, the number of engineering change orders, the number of machine hours, and so on.

Activity Based Costing

Activity-based costing (ABC) is a methodology for more precisely allocating overhead to those items that actually use it. The system can be used for the targeted reduction of overhead costs. ABC works best in complex environments, where there are many machines and products, and tangled processes that are not easy to sort out. Conversely, it is of less use in a streamlined environment where production processes are abbreviated.

The Activity Based Costing Process Flow

Activity-based costing is best explained by walking through its various steps. They are:

Identify costs

The first step in ABC is to identify those costs that we want to allocate. This is the most critical step in the entire process, since we do not want to waste time with an excessively broad project scope. For example, if we want to determine the full cost of a distribution channel, we will identify advertising and warehousing costs related to that channel, but will ignore research costs, since they are related to products, not channels.

Load secondary cost pools

Create cost pools for those costs incurred to provide services to other parts of the company, rather than directly supporting a company’s products or services. The contents of secondary cost pools typically include computer services and administrative salaries, and similar costs. These costs are

later allocated to other cost pools that more directly relate to products and services. There may be several of these secondary cost pools, depending upon the nature of the costs and how they will be allocated.

Load primary cost pools

Create a set of cost pools for those costs more closely aligned with the production of goods or services. It is very common to have separate cost pools for each product line, since costs tend to occur at this level. Such costs can include research and development, advertising, procurement, and distribution. Similarly, you might consider creating cost pools for each distribution channel, or for each facility. If production batches are of greatly varying lengths, then consider creating cost pools at the batch level, so that you can adequately assign costs based on batch size.

Measure activity drivers

Use a data collection system to collect information about the activity drivers that are used to allocate the costs in secondary cost pools to primary cost pools, as well as to allocate the costs in primary cost pools to cost objects. It can be expensive to accumulate activity driver information, so use activity drivers for which information is already being collected, where possible.

Allocate costs in secondary pools to primary pools

Use activity drivers to apportion the costs in the secondary cost pools to the primary cost pools.

Charge costs to cost objects

Use an activity driver to allocate the contents of each primary cost pool to cost objects. There will be a separate activity driver for each cost pool. To allocate the costs, divide the total cost in each cost pool by the total amount of activity in the activity driver, to establish the cost per unit of activity. Then allocate the cost per unit to the cost objects, based on their use of the activity driver.

Formulate reports

Convert the results of the ABC system into reports for management consumption. For example, if the system was originally designed to accumulate overhead information by geographical sales region, then report on revenues earned in each region, all direct costs, and the overhead derived from the ABC system. This gives management a full cost view of the results generated by each region.

Act on the information

The most common management reaction to an ABC report is to reduce the quantity of activity drivers used by each cost object. Doing so should reduce the amount of overhead cost being used.

We have now arrived at a complete ABC allocation of overhead costs to those cost objects that deserve to be charged with overhead costs. By doing so, managers can see which activity drivers need to be reduced in order to shrink a corresponding amount of overhead cost. For example, if the

cost of a single purchase order is $100, managers can focus on letting the production system automatically place purchase orders, or on using procurement cards as a way to avoid purchase orders. Either solution results in fewer purchase orders and therefore lower purchasing department costs.

Uses of Activity Based Costing

The fundamental advantage of using an ABC system is to more precisely determine how overhead is used. Once you have an ABC system, you can obtain better information about the following issues:

Activity costs

ABC is designed to track the cost of activities, so you can use it to see if activity costs are in line with industry standards. If not, ABC is an excellent feedback tool for measuring the ongoing cost of specific services as management focuses on cost reduction.

Customer profitability

Though most of the costs incurred for individual customers are simply product costs, there is also an overhead component, such as unusually high customer service levels, product return handling, and cooperative marketing agreements. An ABC system can sort through these additional overhead costs and help you determine which customers are actually earning you a reasonable profit. This analysis may result in some unprofitable customers being turned away, or more emphasis being placed on those customers who are earning the company its largest profits.

Distribution cost

The typical company uses a variety of distribution channels to sell its products, such as retail, Internet, distributors, and mail order catalogs. Most of the structural cost of maintaining a distribution channel is overhead, so if you can make a reasonable determination of which distribution channels are using overhead, you can make decisions to alter how distribution channels are used, or even to drop unprofitable channels.

Make or buy

ABC provides a comprehensive view of every cost associated with the in-house manufacture of a product, so that you can see precisely which costs will be eliminated if an item is outsourced, versus which costs will remain.

Margins

With proper overhead allocation from an ABC system, you can determine the margins of various products, product lines, and entire subsidiaries. This can be quite useful for determining where to position company resources to earn the largest margins.

Minimum price

Product pricing is really based on the price that the market will bear, but the marketing manager should know what the cost of the product is, in order to avoid selling a product that will lose a company money on every sale. ABC is very good for determining which overhead costs should be included in this minimum cost, depending upon the circumstances under which products are being sold.

Production facility cost

It is usually quite easy to segregate overhead costs at the plant-wide level, so you can compare the costs of production between different facilities.

Clearly, there are many valuable uses for the information provided by an ABC system. However, this information will only be available if you design the system to provide the specific set of data needed for each decision. If you install a generic ABC system and then use it for the above decisions, you may find that it does not provide the information that you need. Ultimately, the design of the system is determined by a cost-benefit analysis of which decisions you want it to assist with, and whether the cost of the system is worth the benefit of the resulting information.

Problems with Activity Based Costing

Many companies initiate ABC projects with the best of intentions, only to see a very high proportion of the projects either fail, or eventually lapse into disuse. There are several reasons for these issues, which are:

Cost pool volume

The advantage of an ABC system is the high quality of information that it produces, but this comes at the cost of using a large number of cost pools – and the more cost pools there are, the greater the cost of managing the system. To reduce this cost, run an ongoing analysis of the cost to maintain each cost pool, in comparison to the utility of the resulting information. Doing so should keep the number of cost pools down to manageable proportions.

Installation time

ABC systems are notoriously difficult to install, with multi-year installations being the norm when a company attempts to install it across all product lines and facilities. For such comprehensive installations, it is difficult to maintain a high level of management and budgetary support as the months roll by without installation being completed. Success rates are much higher for smaller, more targeted ABC installations.

Multi-department data sources

An ABC system may require data input from multiple departments, and each of those departments may have greater priorities than the ABC system. Thus, the larger the number of departments involved in the system, the greater the risk that data inputs will fail over time. This problem can be avoided by designing the system to only need information from the most supportive managers.

Project basis

Many ABC projects are authorized on a project basis, so that information is only collected once; the information is useful for a company's current operational situation, and it gradually declines in usefulness as the operational structure changes over time. Management may not authorize funding for additional ABC projects later on, so ABC tends to be "done" once and then discarded. To mitigate this issue, build as much of the ABC data collection structure into the existing accounting system, so that the cost of these projects is reduced; at a lower cost, it is more likely that additional ABC projects will be authorized in the future.

Reporting of unused time

When a company asks its employees to report on the time spent on various activities, they have a strong tendency to make sure that the reported amounts equal 100% of their time. However, there is a large amount of slack time in anyone's work day that may involve breaks, administrative meetings, playing games on the Internet, and so forth. Employees usually mask these activities by apportioning more time to other activities. These inflated numbers represent misallocations of costs in the ABC system, sometimes by quite substantial amounts.

Separate data set

An ABC system rarely can be constructed to pull all of the information it needs directly from the general ledger. Instead, it requires a separate database that pulls in information from several sources, only one of which is existing general ledger accounts. It can be quite difficult to maintain this extra database, since it calls for significant extra staff time for which there may not be an adequate budget. The best work-around is to design the system to require the minimum amount of additional information other than that which is already available in the general ledger.

Targeted usage

The benefits of ABC are most apparent when cost accounting information is difficult to discern, due to the presence of multiple product lines, machines being used for the production of many products, numerous machine setups, and so forth – in other words, in complex production environments. If a company does not operate in such an environment, then it may spend a great deal of money on an ABC installation, only to find that the resulting information is not overly valuable.

The broad range of issues noted here should make it clear that ABC tends to follow a bumpy path in many organizations, with a tendency for its usefulness to decline over time. Of the problem mitigation suggestions noted here, the key point is to construct a highly targeted ABC system that produces the most critical information at a reasonable cost. If that system takes root in your company, then consider a gradual expansion, during which you only expand further if there is a clear and demonstrable benefit in doing so. The worst thing you can do is to install a large and comprehensive ABC system, since it is expensive, meets with the most resistance, and is the most likely to fail over the long term.

5.1.1 Fixed Cost – variable cost – marginal cost – cost output relationship in the short run and in long run

Fixed CostA fixed cost is a cost that does not vary in the short term, irrespective of changes in production or sales levels, or other measures of activity. A fixed cost is a basic operating expense of a business that cannot be avoided, such as a rent payment. The concept is used in financial analysis to find the breakeven point of a business, as well as to determine product pricing.

To continue the example of a fixed cost, the rent on a building will not change until the lease runs out or is re-negotiated, irrespective of the level of business activity within that building. Examples of other fixed costs are insurance, depreciation, and property taxes. Fixed costs tend to be incurred on a regular basis, and so are considered periodic costs. The amount charged to expense tends to change little from period to period.

When a company has a large fixed cost component, it must generate a significant amount of sales volume in order to have sufficient contribution margin to offset the fixed cost. Once that sales level has been reached, however, this type of business generally has a relatively low variable cost per unit, and so can generate outsized profits above the breakeven level. An example of this situation is an oil refinery, which has massive fixed costs related to its refining capability. If the cost of a barrel of oil drops below a certain amount, the refinery loses money. However, the refinery can be wildly profitable if the price of oil increases beyond a certain amount.

Conversely, if a company has low fixed costs, it probably has a high variable cost per unit. In this case, a business can earn a profit at very low volume levels, but does not earn outsized profits as sales increase. For example, a consulting business has few fixed costs, while most of its labor costs are variable.

Fixed costs are allocated under the absorption basis of cost accounting. Under this arrangement, fixed manufacturing overhead costs are proportionally assigned to the units produced in a reporting period, and so are recorded as assets. Once the units are sold, the costs are charged to the cost of goods sold. Thus, there can be a delay in the recognition of those fixed costs that are allocated to inventory.

Variable CostA variable cost is a cost that varies in relation to changes in the volume of activity. The variable cost concept can be used to model the future financial performance of a business, as well as to set minimum price points. The most common variable costs are:

Direct materials, since the cost of materials are charged to expense when the associated products are sold.

Commissions, since the sales staff earns commissions when sales transactions are completed.

Billable labor, since wages associated with billable hours are charged to expense when the associated sales transactions are completed.

Piece rate labor, where employees are paid based on the number of units produced.

Credit card fees, where a fee is not incurred unless a customer uses a credit card to pay for a purchase.

Direct labor may not be a variable cost if labor is not added to or subtracted from the production process as production volumes change. This situation arises when a production line must be staffed, irrespective of the amount of production volume.

Overhead is not a variable cost, since overhead costs will be incurred, irrespective of production levels. For example, both rent and machine depreciation, which are overhead costs, will be incurred even if there is no production activity.

A company with a high proportion of variable costs can usually generate a profit at a relatively low sales level, since there are few fixed costs that must also be paid for in each accounting period.

Marginal cost

Marginal cost is the cost of one additional unit of output. The concept is used to determine the optimum production quantity for a company, where it costs the least amount to produce additional units. If a company operates within this "sweet spot," it can maximize its profits. The concept is also used to determine product pricing when customers request the lowest possible price for certain orders.

For example, a production line currently creates 10,000 widgets at a cost of $30,000, so that the average cost per unit is $3.00. However, if the production line creates 10,001 units, the total cost is $30,002, so that the marginal cost of the one additional unit is only $2. This is a common effect, because there is rarely any additional overhead cost associated with a single unit of output, resulting in a lower marginal cost.

In rare cases, step costs may take effect, so that the marginal cost is actually much higher than the average cost. To use the same example, what if the company must start up a new production line on a second shift in order to create unit number 10,001? If so, the marginal cost of this additional unit might be vastly higher than $2 - it may be thousands of dollars, because the company had to start up an extra production line in order to create that single unit.

A more common situation lying between the preceding two alternatives is when a production facility operating near capacity simply pays overtime to its employees for them to work somewhat longer to put out that one additional unit. If so, the marginal cost will increase to include the cost of overtime, but not to the extent caused by a step cost.

The marginal cost of customized goods tends to be quite high, whereas it is very low for highly standardized products that are manufactured in bulk. The reason for the difference is that the variable cost associated with a customized product tends to be higher than for a standardized product. A high level of standardization is usually achieved with more automation, so the variable cost per unit is low and the fixed cost of manufacturing equipment is high.

Since marginal cost is only used for management decision making, there is no accounting entry for it.

Cost output relationship:

The cost-output relationship plays an important role in determining the optimum level of production. Knowledge of the cost-output relation helps the manager in cost control, profit prediction, pricing, promotion etc. The relation between cost and its determinants is technically described as the cost function.

C= f (S, O, P, T ….)

Where;

C= Cost (Unit or total cost)

S= Size of plant/scale of production

O= Output level

P= Prices of inputs

T= Technology

Considering the period the cost function can be classified as (1) short-run cost function and (2) long-run cost function. In economics theory, the short-run is defined as that period during which the physical capacity of the firm is fixed and the output can be increased only by using the existing capacity allows to bring changes in output by physical capacity of the firm.

1. Cost-Output Relationship in the Short-Run

The cost concepts made use of in the cost behavior are Total cost, Average cost, and Marginal cost.

Total cost is the actual money spent to produce a particular quantity of output. Total Cost is the summation of Fixed Costs and Variable Costs.

TC = TFC + TVC

Up to a certain level of production Total Fixed Cost i.e., the cost of plant, building, equipment etc, remains fixed. But the Total Variable Cost i.e., the cost of labor, raw materials etc., vary with the variation in output. Average cost is the total cost per unit. It can be found out as follows.

AC = TC/Q

The total of Average Fixed Cost (TFC/Q) keep coming down as the production is increased and Average Variable Cost (TVC/Q) will remain constant at any level of output.

Marginal Cost is the addition to the total cost due to the production of an additional unit of product. It can be arrived at by dividing the change in total cost by the change in total output.

In the short-run there will not be any change in Total Fixed C0st. Hence change in total cost implies change in Total Variable Cost only.

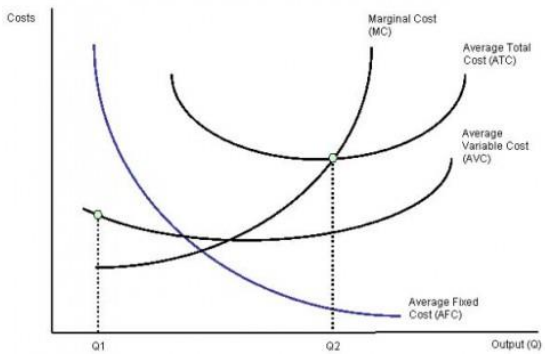
Units of Output Q	TFC	TVC	(TFC + TVC) TC	(TVC / Q) AVC	(TFC / Q) AFC	(TC/Q) AC	Marginal cost MC
0	–	–	60	–	–	–	–
1	60	20	80	20	60	80	20
2	60	36	96	18	30	48	16
3	60	48	108	16	20	36	12
4	60	64	124	16	15	31	16
5	60	90	150	18	12	30	26
6	60	132	192	22	10	32	42

The above table represents the cost-output relationship. The table is prepared on the basis of thelaw of diminishing marginal returns. The fixed cost Rs. 60 May include rent of factory building, interest on capital, salaries of permanently employed staff, insurance etc. The table shows that fixed cost is same at all levels of output but the average fixed cost, i.e., the fixed cost per unit, falls continuously as the output increases. The expenditure on the variable factors (TVC) is at different rate. If more and more units are produced with a given physical capacity the AVC will fall initially, as per the table declining up to 3rd unit, and being constant up to 4th unit and then rising. It implies that variable factors produce more efficiently near a firm's optimum capacity than at any other levels of output and later rises. But the rise in AC is felt only after the start rising.

In the table 'AVC' starts rising from the 5th unit onwards whereas the 'AC' starts rising from the 6th unit only so long as 'AVC' declines 'AC' also will decline. 'AFC' continues to fall with an increase in Output. When the rise in 'AVC' is more than the decline in 'AFC', the total cost again begin to rise. Thus there will be a stage where the 'AVC', the total cost again begin to rise thus there will be a stage where the 'AVC' may have started rising, yet the 'AC' is still declining because the rise in 'AVC' is less than the droop in 'AFC'.

Thus the table shows an increasing returns or diminishing cost in the first stage and diminishing returns or diminishing cost in the second stage and followed by diminishing returns or increasing cost in the third stage.

The short-run cost-output relationship can be shown graphically as follows.



In the above graph the "AFC' curve continues to fall as output rises an account of its spread over more and more units Output. But AVC curve (i.e. variable cost per unit) first falls and than rises due to the operation of the law of variable proportions. The behavior of "ATC' curve depends upon the behavior of 'AVC' curve and 'AFC' curve. In the initial stage of production both 'AVC' and 'AFC' decline and hence 'ATC' also decline. But after a certain point 'AVC' starts rising. If the rise in variable cost is less than the decline in fixed cost, ATC will still continue to decline otherwise AC begins to rise. Thus the lower end of 'ATC' curve thus turns up and gives it a U-shape. That is why 'ATC' curve are U-shaped. The lowest point in 'ATC' curve indicates the least-cost combination of inputs. Where the total average cost is the minimum and where the "MC' curve intersects 'AC' curve, It is not be the maximum output level rather it is the point where per unit cost of production will be at its lowest.

The relationship between 'AVC', 'AFC' and 'ATC' can be summarized up as follows:

If both AFC and 'AVC' fall, 'ATC' will also fall.

When 'AFC' falls and 'AVC' rises

'ATC' will fall where the drop in 'AFC' is more than the raise in 'AVC'.

'ATC' remains constant is the drop in 'AFC' = rise in 'AVC'

'ATC' will rise where the drop in 'AFC' is less than the rise in 'AVC'

2. Cost-output Relationship in the Long-Run

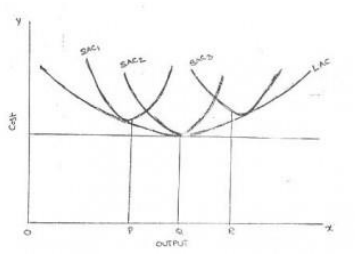
Long run is a period, during which all inputs are variable including the one, which are fixes in the short-run. In the long run a firm can change its output according to its demand. Over a long period, the size of the plant can be changed, unwanted buildings can be sold staff can be increased or

reduced. The long run enables the firms to expand and scale of their operation by bringing or purchasing larger quantities of all the inputs. Thus in the long run all factors become variable.

The long-run cost-output relations therefore imply the relationship between the total cost and the total output. In the long-run cost-output relationship is influenced by the law of returns to scale.

In the long run a firm has a number of alternatives in regards to the scale of operations. For each scale of production or plant size, the firm has an appropriate short-run average cost curves. The short-run average cost (SAC) curve applies to only one plant whereas the long-run average cost (LAC) curve takes in to consideration many plants.

The long-run cost-output relationship is shown graphically with the help of "LCA' curve.



To draw on 'LAC' curve we have to start with a number of 'SAC' curves. In the above figure it is assumed that technologically there are only three sizes of plants – small, medium and large, 'SAC', for the small size, 'SAC2' for the medium size plant and 'SAC3' for the large size plant. If the firm wants to produce 'OP' units of output, it will choose the smallest plant. For an output beyond 'OQ' the firm wills optimum for medium size plant. It does not mean that the OQ production is not possible with small plant. Rather it implies that cost of production will be more with small plant compared to the medium plant.

For an output 'OR' the firm will choose the largest plant as the cost of production will be more with medium plant. Thus the firm has a series of 'SAC' curves. The 'LCA' curve drawn will be tangential to the entire family of 'SAC' curves i.e. the 'LAC' curve touches each 'SAC' curve at one point, and thus it is known as envelope curve. It is also known as planning curve as it serves as guide to the entrepreneur in his planning to expand the production in future. With the help of 'LAC' the firm determines the size of plant which yields the lowest average cost of producing a given volume of output it anticipates.

5.2 Pricing practice – full cost pricing – marginal cost pricing – going rate pricing – bid pricing – pricing for a rate of return

Pricing practice:

Pricing is one of the most important elements of the marketing, as it is the only factor which generates a turnover for the organization. It can be defined as "Activities aimed at finding a product's optimum price, typically including overall marketing objectives, consumer demand, product attributes, competitors' pricing, and market and economic trends." It costs to produce and design a product; it costs to distribute a product and costs to promote it. Price must support these elements of the mix. Pricing is difficult and must reflect supply and demand relationship. Pricing a product too high or too low could mean a loss of sales for the organization. Pricing should take into account the following factors:

Fixed and variable costs

Competition

Company objectives

Proposed positioning strategies

Target group and willingness to pay

An organization can adopt a number of pricing strategies. The pricing strategies are based much on what objectives the company has set itself to achieve.

Full cost pricing

The Full Cost Pricing (FCP) Policy applies to SBAs2 that are not government-owned corporations(GOCs) and fully commercialised business units (CBUs) in accordance with the Commercialisation of Government Business Activities in Queensland Policy Framework.

The FCP Policy is incorporated by reference into the Queensland Government's Financial Performance and Management Standard 2009 (FPMS). The FPMS requires that relevant SBAs and CBUs must apply the Policy.

The FPMS is subordinate legislation under the Financial Accountability Act 2009. Accordingly,while the FCP Policy itself does not have any legislative status, the FPMS imposes a statutory obligation upon SBAs and CBUs to comply with the Policy.

Components of a full cost pricing policy

In the private sector, prices are usually set so that as a whole across the enterprise, they recover the full cost of the provision of all goods and services, taxes and similar charges plus a Suitable return on the owners' investment.This concept is incorporated in this Policy through the establishment of a cost benchmark for each SBA or CBU. The benchmark must take into account all costs incurred in producing and delivering the goods and services, as well as taxes and other Government charges faced by the private sector competitor or equivalent business. Prices must incorporate this benchmark plus are turn on investment similar to that required by the owners of the private sector competitors or equivalent businesses.Each SBA or CBU to which this Policy applies is to be examined separately to set the benchmark,and each SBA or CBU must price commercially. The rate of return must be achieved over the medium term. This will allow the relevant SBAs or CBUs to establish the required commercial structures.

Marginal-cost pricing

Marginal-cost pricing, in economics, the practice of setting the price of a product to equal the extra cost of producing an extra unit of output. By this policy, a producer charges, for each product unit sold, only the addition to total cost resulting from materials and direct labour.

Businesses often set prices close to marginal cost during periods of poor sales. If, for example, an item has a marginal cost of $1.00 and a normal selling price is $2.00, the firm selling the item might wish to lower the price to $1.10 if demand has waned. The business would choose this approach because the incremental profit of 10 cents from the transaction is better than no sale at all.

In the mid-20th century, proponents of the ideal of perfect competition—a scenario in which firms produce nearly identical products and charge the same price favoured the efficiency inherent in the concept of marginal-cost pricing. Economists such as Ronald Coase, however, upheld the market's ability to determine prices. They supported the way in which market pricing signals information about the goods being sold to buyers and sellers, and they observed that sellers who were required to price at marginal cost would risk failing to cover their fixed costs.

Going-rate pricing

Going-rate pricing is a pricing strategy as per which sellers price their offerings on par with competitors. Most new companies who are clueless about product pricing adopt this tactic, especially when it's not easy to measure or guess market response. Certain oligopolistic industries, such as steel and paper, have firms selling goods with similar price points. There could be minor upward or downward price deviations though. Smaller firms usually follow market leaders and alter prices based on bigger company pricing, or how well the market responds to their offerings.

'BID PRICEING'

The price a buyer is willing to pay for a security. This is one part of the bid with the other being the bid size, which details the amount of shares the investor is willing to purchase at the bid price. The opposite of the bid is the ask price, which is the price a seller is looking to get for his or her shares.

A bid price is the highest price that a buyer (i.e., bidder) is willing to pay for a good. It is usually referred to simply as the "bid."

In bid and ask, the bid price stands in contrast to the ask price or "offer", and the difference between the two is called the bid/ask spread.

An unsolicited bid or purchase offer is when a person or company receives a bid even though they are not looking to sell. A bidding war is said to occur when a large number of bids are placed in rapid succession by two or more entities, especially when the price paid is much greater than the ask price, or greater than the first bid in the case of unsolicited bidding.

In the context of stock trading on a stock exchange, the bid price is the highest price a buyer of a stock is willing to pay for a share of that given stock. The bid price displayed in most quote services is the highest bid price in the market. The ask or offer price on the other hand is the lowest price a seller of a particular stock is willing to sell a share of that given stock. The ask or offer price displayed is the lowest ask/offer price in the market (Stock market).

The bid price is the highest price that a prospective buyer is willing to pay for a specific security. The "ask price," is the lowest price acceptable to a prospective seller of the same security. The highest bid and lowest offer are quoted on most major exchanges, and the difference between the two prices is called the "bid-ask spread."

Rate of return pricing

Target rate of return pricing is a pricing method used almost exclusively by market leaders or monopolists. You start with a rate of return objective, like 5% of invested capital, or 10% of sales revenue. Then you arrange your price structure so as to achieve these target rates of return.For example, assume a firm invests $100 million in order to produce and market designer snowflakes, and they estimate that with demand for designer snowflakes being what it is, they can sell 2 million flakes per year.

Further, from preliminary production data they know that at that level of output their average total cost (ATC) is $50 per flake. Total annual costs would be $100 million (2 million units at $50 each). Next, management decides they want a 20% return on investment (ROI). That works out to be $20 million (20% of a $100 million investment). Profit margin will need to be $10 per flake ($20 million return over 2 million units). So the price must be set at $60 per designer flake ($50 costs plus $10 profit margin). Similar calculations will determine price based on rate of return to sales revenue.

An unusual consequence of this pricing model is that to keep the target rate of return constant, the firm will have to continuously be changing its price as the level of demand changes. This can be seen in the diagram below. Based on market demand expectations, the firm estimates it will be operating at 70% capacity. Given its production function and cost structure, it knows its average total costs at that output level will be represented as point A . If its predetermined rate of return requirement is amount A, B, then it will set its price at P*. Because profit is equal to (PATC)*Q, then their total profit will be defined by area P*, B, A, P70%.

5.3 Appraising project profitability –internal rate of return – pay back period – net present value – cost benefit analysis

The Definition of Project Appraisal

Project appraisal means a pre-investment analysis of project to determine whether the project should be implemented or not. There are some inherent differences between the terms Project Appraisal and Project Valuation although they are often used interchangeably. Project appraisal refers to an ex-ante examination of a proposal project to determine whether the same should be implemented or not whereas project evaluation is an ex-post assessment of the impact of an accomplished project.

Project appraisal is defined to provide a base – technical, economic, and commercial for an investment decision about any project. It covers a wide range of analysis of the alternative approaches for selecting the optimum solution in respect of location, technology, size of a project,engineering and organizational set-up, market size, financial cost-benefit, economic and social aspects of the project and various other relevant issues. It may either market oriented or based on materials inputs, that is derives its initiative from an assumed or existing demand or from available material inputs such as raw materials, or energy. Thus project appraisal is not an end in itself, but only a means to arrive at an investment decision that need not agree with the conclusions of the feasibility study. In fact, it would be rare to find investor response so flexible as to fully conform to the results of such a study.

Project appraisal as an aid to investment decision assumes special significance when a scarce factor,such as capital, foreign exchange, and or labor is to be rationed in terms of the alternative uses to which it can be put. In addition, the time element is another important factor in the appraisal of investment decisions

Types of Project Appraisal Methodologies

Net Present Value

A project's net present value is determined by summing the net annual cash flow, discounted at the project's cost of capital and deducting the initial outlay. Decision criteria is to accept a project with a positive net present value. Advantages of this method are that it reflects the time value of money and maximizes shareholder's wealth. Its weakness is that its rankings depend on the cost of capital; present value will decline as the discount rate increases.

Payback Method

A company chooses the expected number of years required to recover an original investment. Projects will only be selected if initial outlay can be recovered within a predetermined period. This method is relatively easy since the cash flow doesn't need to be discounted. Its major weakness is that it ignores the cash inflows after the payback period, and does not consider the timing of cash flows.

Internal Rate of Return

This method equates the net present value of the project to zero. The project is evaluated by comparing the calculated Internal rate of return to the predetermined required rate of return. Projects with Internal rate of return that exceed the predetermined rate are accepted. The major weakness is that when evaluating mutually exclusive projects, use of Internal rate of return may lead to selecting a project that does not maximize the shareholders' wealth.

Profitability Index

This is the ratio of the present value of project cash inflow to the present value of initial cost. Projects with a Profitability Index of greater than 1.0 are acceptable. The major disadvantage in this method is that it requires cost of capital to calculate and it cannot be used when there are unequal cash flows. The advantage of this method is that it considers all cash flows of the project.

Cost–benefit analysis

Cost–benefit analysis (CBA), sometimes called benefit–cost analysis (BCA), is a systematic approach to estimating the strengths and weaknesses of alternatives that satisfy transactions, activities or functional requirements for a business. It is a technique that is used to determine options that provide the best approach for the adoption and practice in terms of benefits in labor, time and cost savings etc. (David, Ngulube and Dube, 2013). The CBA is also defined as a systematic process for calculating and comparing benefits and costs of a project, decision or government policy .

To provide a basis for comparing projects. It involves comparing the total expected cost of each option against the total expected benefits, to see whether the benefits outweigh the costs, and by how much.

CBA is related to, but distinct from cost-effectiveness analysis. In CBA, benefits and costs are expressed in monetary terms, and are adjusted for the time value of money, so that all flows of benefits and flows of project costs over time (which tend to occur at different points in time) are expressed on a common basis in terms of their "net present value.

Closely related, but slightly different, formal techniques include cost-effectiveness analysis, cost–utility analysis, risk–benefit analysis, economic impact analysis, fiscal impact analysis, and Social return on investment (SROI) analysis.

5.4 Feasibility reports – appraisal process – technical feasibility economic feasibility – financial feasibility.

Feasibility report:

Feasibility studies aim to objectively and rationally uncover the strengths and weaknesses of an existing business or proposed venture, opportunities and threats present in the environment, the resources required to carry through, and ultimately the prospects for success. In its simplest terms, the two criteria to judge feasibility are cost required and value to be attained.

A well-designed feasibility study should provide a historical background of the business or project, a description of the product or service, accounting statements, details of the operations and management, marketing research and policies, financial data, legal requirements and tax obligations. Generally, feasibility studies precede technical development and project implementation.

A business feasibility study or report examines a situation whether economical, technological, operational, marketing-related or other and identifies plans best suited to manage the situation. It may involve approaches to cutting costs, assessing a new business location, or developing a new technological system. The feasibility report assesses the supporting data and reasoning of each plan and provides a recommendation of which plan to implement.

Economic Feasibility

An economic feasibility study reports on the cost factors of a proposed plan to an organization. If, for example, an organization requires a feasibility study on its payment-processing techniques, the report may assess the cost factors involving the functions of electronic funding, security measures and approvals applicable to both e-commerce and regular transactions. With supporting data, the study would make a recommendation of the benefits and areas of improvement for both types of transactions.

Possible questions raised in economic analysis are:

Is the system cost effective?

Do benefits outweigh costs?

The cost of doing full system study

The cost of business employee time

Estimated cost of hardware

Estimated cost of software/software development

Is the project possible, given the resource constraints?

What are the savings that will result from the system?

Cost of employees' time for study

Cost of packaged software/software development

Selection among alternative financing arrangements (rent/lease/purchase)

The concerned business must be able to see the value of the investment it is pondering before committing to an entire system study. If short-term costs are not overshadowed by long-term gains or produce no immediate reduction in operating costs, then the system is not economically feasible, and the project should not proceed any further. If the expected benefits equal or exceed costs, the system can be judged to be economically feasible. Economic analysis is used for evaluating the effectiveness of the proposed system.The economical feasibility will review the expected costs to see if they are in-line with the projected budget or if the project has an acceptable return on investment. At this point, the projected costs will only be a rough estimate. The exact costs are not required to determine economic feasibility. It is only required to determine if it is feasible that the project costs will fall within the target budget or return on investment. A rough estimate of the project schedule is required to determine if it would be feasible to complete the systems project within a required timeframe. The required timeframe would need to be set by the organization.

Operational Feasibility

An operational feasibility report focuses on the effectiveness of the function of the operations of an organization. If a business has a global market, for example, an operational feasibility study could examine the roles within each of its divisions both locally and in each global office. Based on the data of the study, the report could recommend that the organization consolidate and centralize certain departments for greater efficiency and cost-savings.

Market Feasibility

If you are setting up a new retail store the right location plays an important role in the success of your business. A market feasibility study helps determine if your location is beneficial to your business. The market-feasibility study inspects the surrounding community, identifies competition, lifestyle, shopping patterns and other influences. Analysis of the data in the market-feasibility study provides the basis of whether or not this location can drive the market for your business.

Technical Feasibility

Each business needs an information system to store data. Before a system is built, a technical feasibility study can identify the potential challenges and problems that the system may encounter technically based on the requirements and goals of the business. The study analyzes possible technical solutions to ensure that the system is achievable in its effectiveness to the business. The study identifies a number of technical options based on the business's resources and requirements and a final recommendation.

The essential questions that help in testing the operational feasibility of a system include the following:

Is the project feasible within the limits of current technology?

Does the technology exist at all?

Is it available within given resource constraints?

Is it a practical proposition?

Manpower- programmers, testers & debuggers

Software and hardware

Are the current technical resources sufficient for the new system?

Can they be upgraded to provide to provide the level of technology necessary for the new system?

Do we possess the necessary technical expertise, and is the schedule reasonable?

Can the technology be easily applied to current problems?

Does the technology have the capacity to handle the solution?

Do we currently possess the necessary technology?

Performance Appraisal - Process

A performance appraisal, or performance review, is a formal interaction between an employee and her manager. This is when the performance of the employee is assessed and discussed in thorough

detail, with the manager communicating the weaknesses and strengths observed in the employee and also identifying opportunities for the employee to develop professionally.

Here is the process involved in performance appraisal

1. Establishing Performance Standards

In this we use as the base to compare the actual performance of the employees. In this step it requires to set the criteria to judge the performance of the employees as successful or unsuccessful and the degrees of their contribution to the organizational goals and objectives. The standards set should be clear, easily understandable and in measurable terms. If employee doesn't come up to expectance, then it should be taken extra care for it.

2. Communicating the standards

It is the responsibility of the management to communicate the standards to all the employees of the organization. The employees should be informed and the standards should be clearly explained. This will help them to understand their roles and to know what exactly is expected from them.

3. Measuring the actual Performance

The most difficult part of the performance appraisal process is measuring the actual performance of the employees that is the work done by the employees during the specified period of time. It is a nonstop process which involves monitors the performance all over the year. This stage requires the watchful selection of the suitable techniques of measurement, taking care that individual bias does not affect the outcome of the process and providing assistance rather than interfering in an employees work.

4. Comparing the Actual with the Desired Performance

In this the actual performance is compared with the desired or the standard performance. The comparison tells the deviations in the performance of the employees from the standards set. The result can show the actual performance being more than the desired performance or, the actual performance being less than the desired performance depicting a negative deviation in the organizational performance. It includes recalling, evaluating and analysis of data related to the employees' performance.

5. Discussing Results

The result of the appraisal is communicated and discussed with the employees on one-to-one basis. The focus of this discussion is on communication and listening. The results, the problems and the possible solutions are discussed with the aim of problem solving and reaching consensus. The feedback should be given with a positive attitude as this can have an effect on the employees' future performance. The purpose of the meeting should be to solve the problems faced and motivate the employees to perform better.

6. Decision Making

The last step of the process is to take decisions which can be taken either to improve the performance of the employees, take the required corrective actions, or the related HR decisions like rewards, promotions, demotions, transfers etc.

5.5 Break even analysis - basic assumptions – break even chart – managerial uses of break even analysis.

An analysis to determine the point at which revenue received equals the costs associated with receiving the revenue. Break-even analysis calculates what is known as a margin of safety, the amount that revenues exceed the break-even point. This is the amount that revenues can fall while still staying above the break-even point.

BREAK-EVENANALYSIS ASSUMPTIONS:

• All costs are classified as either fixed or variable. If not impossible or impractical, dividing costs into the variable and fixed cost elements as an extremely difficult job. This is attributable to the inherent nature or characteristics of the cost per se.

• Fixed costs remain constant within the relevant range. Fixed costs remain unchanged at any level of activity within the relevant range, even at the zero level.

• The behavior of total revenues and total costs will be linear over the relevant range, i.e. will appear as a straight line on the BE chart. This is based on the idea that variable costs vary in direct proportion to volume; the fixed costs remain unchanged, hence drawn as a straight horizontal line on the graph within the relevant range and that selling price is constant.

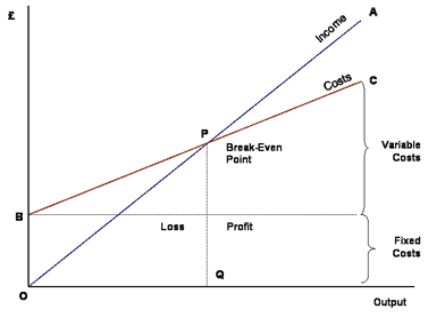
• In case of multiple product companies, the selling prices, costs and proportion of units sold will not change. This cannot always be correct. Sales mix ratio may be due to the change in the consuming habits of customers. Selling prices of the individual products may likewise change due to competition, popularity and salability of the products, etc.

• There is no significant change in the inventory levels during the period under review. Stated in another way, production volume is assumed to be almost equal to the sales volume, which causes an immaterial difference between the beginning and ending inventories.

The Break-Even Chart

In its simplest form, the break-even chart is a graphical representation of costs at various levels of activity shown on the same chart as the variation of income (or sales, revenue) with the same

variation in activity. The point at which neither profit nor loss is made is known as the "break-even point" and is represented on the chart below by the intersection of the two lines:



In the diagram above, the line OA represents the variation of income at varying levels of production activity ("output"). OB represents the total fixed costs in the business. As output increases, variable costs are incurred, meaning that total costs (fixed + variable) also increase. At low levels of output, Costs are greater than Income. At the point of intersection, P, costs are exactly equal to income, and hence neither profit nor loss is made.

Managerial Uses of Break-Even Analysis:

To the management, the utility of break-even analysis lies in the fact that it presents a microscopic picture of the profit structure of a business enterprise. The break-even analysis not only highlights the area of economic strength and weakness in the firm but also sharpens the focus on certain leverages which can be operated upon to enhance its profitability. It guides the management to take effective decision in the context of changes in government policies of taxation and subsidies.

The break-even analysis can be used for the following purposes:

(i) Safety Margin:

The break-even chart helps the management to know at a glance the profits generated at the various levels of sales. The safety margin refers to the extent to which the firm can afford a decline before it starts incurring losses. The formula to determine the sales safety margin is:

Safety Margin= (Sales – BEP)/ Sales x 100

From the numerical example at the level of 250 units of output and sales, the firm is earning profit, the safety margin can be found out by applying the formula

Safety Margin = 250- 150 / 250 x 100 =40%

This means that the firm which is now selling 250 units of the product can afford to decline sales upto 40 per cent. The margin of safety may be negative as well, if the firm is incurring any loss. In

that case, the percentage tells the extent of sales that should be increased in order to reach the point where there will be no loss.

(ii) Target

Profit:

The break-even analysis can be utilised for the purpose of calculating the volume of sales necessary to achieve a target profit. When a firm has some target profit, this analysis will help in finding out the extent of increase in sales by using the following formula:

Target Sales Volume = Fixed Cost + Target Profit / Contribution Margin per unit

By way of illustration, we can take Table 1 given above. Suppose the firm fixes the profit as Rs.100, then the volume of output and sales should be 250 units. Only at this level, it gets a profit of Rs. 100. By using the formula, the same result will be obtained.

(iii) Change

In Price:

The management is often faced with a problem of whether to reduce prices or not. Before taking a decision on this question, the management will have to consider a profit. A reduction in price leads to a reduction in the contribution margin. This means that the volume of sales will have to be increased even to maintain the previous level of profit. The higher the reduction in the contribution margin, the higher is the increase in sales needed to ensure the previous profit.