INTRODUCTION TO MANAGERIAL ECONOMICS

UNIT -1

Introduction To Economics

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

It was only during the eighteen century that "Adam smith" the father of economics , defined economics as 'the study of nature and uses of national wealth'.

Wealth cannot be the ultimate goal of a man. We work hard daily to keep our life daily to keep our life comfort , and to earn money. Merely procuring money or wealth is not our ultimate objective . We want to buy necessary goods and services that make life more comfortable, and for this purpose we need money .

DEFINITION :

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

Prof Lionel Robbins defined Economics as "the science which studies human behavior as a relationship between ends and scarce means which have alternative uses".

The salient features of Economics according to Prof Robbins are as follows :

1. Unlimited wants
2. Scarce resources
3. Alternative uses
4. Choice

Microeconomics

The study of an individual consumer or a firm is called microeconomics (also called the theory of firm).
Micro means 'one millionth'. Microeconomics deals with behaviour and problems of single individual and of micro organisation.

Macroeconomics

The study of 'aggregate' or total level of economic activity in a country is called macroeconomics. It studies the flow of economics resources or factors of production (such as Land , Labour , Capital , Organisation , and Technology)from the resource owner to the business firms and then from the business firms to the households.

Management

management is the art of getting things done through people in formally organised groups . It is necessary that every organisation is well managed to enable it to achieve its desired goals . management includes a number of functions

1. Planning
2. Organising
3. Staffing
4. Directing
5. Controlling .

The Manager

A Manager gets things done through people in an organisation. He directs the resources such as men , materials , machines , money and technology. A manager is responsible for achieving the targeted results . The managers task is to maximize the profits of the firm.

Definition of managerial economics

According to Spencer and Siegelman managerial economics as "The integration of economic theory with business practice for the purpose of facilitating decision-making and forward planning by management".

Nature of Managerial Economics

Managerial economics is perhaps , the youngest of all the social sciences. Since it originates from economics it has the basic features of economics, such as assuming that other things remaining the same .

Further , it is assumed that the firm or the buyer acts in a rational manner (which normally does not happen). The buyer is carried away by the advertisements , brand loyalties , incentives and so on and therefore , the innate behavior of the consumer will be rational is not a realistic assumption.

This is because the behavior of a firm or a consumer is a complex phenomenon.

The other features of M.E. are explained as below :

   a) Close to microeconomics
   b) Operates against the backdrop of macroeconomics
   c) Normative statements
   d) Prescriptive actions
   e) Applied in nature
   f) Offers scope to evaluate each alternative
   g) Interdisciplinary
   h) Assumption and limitations.

Scope of Managerial Economics

The main focus in managerial economics is to find the optimal solution to a given managerial problem . The problem may relate to

Concepts and techniques of managerial economics	applied → to	**Managerial decision areas**	for →	Optimum solutions

Managerial decision areas
- Production
- Reduction or control of costs
- Determination of price of a given product or service
- Make or buy decisions
- Inventory decisions
- Capital management
- Profit planning and management
- Investment decisions

The main areas of managerial economics

1. Demand decision
2. Input-output decision
3. Price out-put decision
4. Profit-related decision
5. Investment decision
6. Economic forecasting and forward planning

Linkages with other disciplines

- Economics
- Operations research
- Mathematics
- Statistics
- Accountancy
- Psychology
- Organisational behaviour

DEMAND ANALYSIS

INTRODUCTION:

The scope of economics broadly comprises (a) Consumption (b) Production (c) Exchange and (d) Distribution

Consumption deals with the behaviour of consumers. To plan his operations, a producer has to understand the consumer behaviour pattern before he commits his funds for production. This is the reason why consumption precedes production.

Exchange deals with how the goods, once produced, are sold for a price to the customer.

Distribution deals with how the sale proceeds of the goods sold are distributed among the various factors of production towards the rent (to the landlord for letting out his land), wages (for labour), interest (to capitalist for having provided capital), and profits (to the organiser for having organised the business activity).

What is demand ?

Every want supported by the willingness and ability to buy constitutes demand for a particular product or service. In other words , if I want a car and I cannot pay for it , there is no demand for the car from my side.

A product or service is said to have demand when three conditions are satisfied :

- Desire on the part of the buyer to buy
- Willingness to pay for it
- Ability to pay the specified price for it.

unless all this conditions are fulfilled , the product is not said to have any demand.

Nature And Types Of Demand:

1.Consumer Demand Vs Producer Goods :

Consumer goods refers to such products and services which are capable of satisfying human needs.

Examples are bread ,apple , rice and so on .

This gives direct and immediate satisfaction.

Producer goods are those which are used for further processing or production of goods/services to earn income .

Examples are machinery or a tractor .

These goods yield satisfaction indirectly.

2 . Autonomous demand vs derived demand :

Autonomous demand refers to the demand for products and services directly.

Super speciality hospital can be considered as autonomous where as the demand for the **hotels** around that is called derived demand.

If there is no demand for houses ,,there many not be demand for steel , cement , bricks and so on .

3. Durable vs perishable goods :

Here the demand for goods is classified based on their durability .

Examples of perishable goods are -milk , vegetables , fish , and such.

Rice , wheat , sugar such others can be examples of durable goods.

4. Firm demand vs industry demand :

The firm is single business unit where as industry refers to the group of firms carrying on similar activity.

Individual demand schedule		Market demand schedule	
Price(rs)	quantity demanded (kg of rice)	Price(rs)	quantity demanded (bags of price)
15	10	15	100
14	12	14	120
13	15	13	150
12	20	12	200
11	25	11	250
10	30	10	300

5. Short-run demand VS long-run demand :

Joel Dean defines short-run demand as 'the demand with its immediate reaction to price changes, income fluctuations and so on. Long-run demand is that demand which will ultimately exist as a result of the changes in pricing, promotion or product improvement, after enough time is allowed to let the market adjust itself to the given situation'.

6. New demand VS Replacement Demand:

New demand refers to the demand for the new products and it is the addition to the existing stock. In replacement demand, the item is purchased to maintain the asset in good condition.

7. Total market and segment market demand:

Let us take the consumption of sugar in a given region. The total demand for sugar in the region is the total market demand. The demand for sugar from the sweet-making industry from this region is the segment market demand.

Factors Determining Demand:

The demand for a particular product depends on several factors. The following factors determine the demand for a given product:

a) Price of the product (P)
b) Income level of the consumer (I)
c) Tastes and preferences of the consumer (T)
d) Prices of related goods which may be substitutes/complementary (P_R)
e) Expectations about the prices in future (E_P)
f) Expectations about the incomes in future (E_I)
g) Size of population (S_P)
h) Distribution of consumers over different regions (D_C)
i) Advertising efforts (A)
j) Any other factor capable of affecting the demand (O)

Demand Function:

Demand function is a function which describes a relationship between one variable and its determinants. It describes how much quantity of goods is bought at alternative prices of good and related goods, alternative income levels, and alternative values of other variables affecting demand. Thus, the demand function for a good relates the quantity of a good which consumers demand during a given period to the factors which influence the demand. The above factors can be built up into a demand function.

Mathematically, the demand function for a product A can be expressed as follows:

$$Qd = f(P, I, T, P_R, E_P, E_I, S_P, D_C, A, O)$$

The impact of some of these determinants on demand can be described as follows:
a) Price of the product
b) Income of the consumer
c) Prices of substitutes or complementaries
d) Tastes and preferences

Elasticity of Demand:

Most of the times, it is not enough to understand the increase or decrease in price and its consequential impact of change in the quantity demanded. It is necessary to find out the extent of increase or decrease in each of the variables for taking certain managerial decisions. This paves the way for the concept of elasticity of demand.

The term '**elasticity**' is defined as *the rate of responsiveness in the demand of a commodity of a given change in price or any other determinants of demand.* In other words, it explains the extent of change in quantity demanded because of a given change in the other determining factors, may be price or any other factor(s).

Measurements of Elasticity:

The elasticity is measured in the following ways:

a) Perfectly elastic demand
b) Perfectly inelastic demand
c) Relatively elastic demand
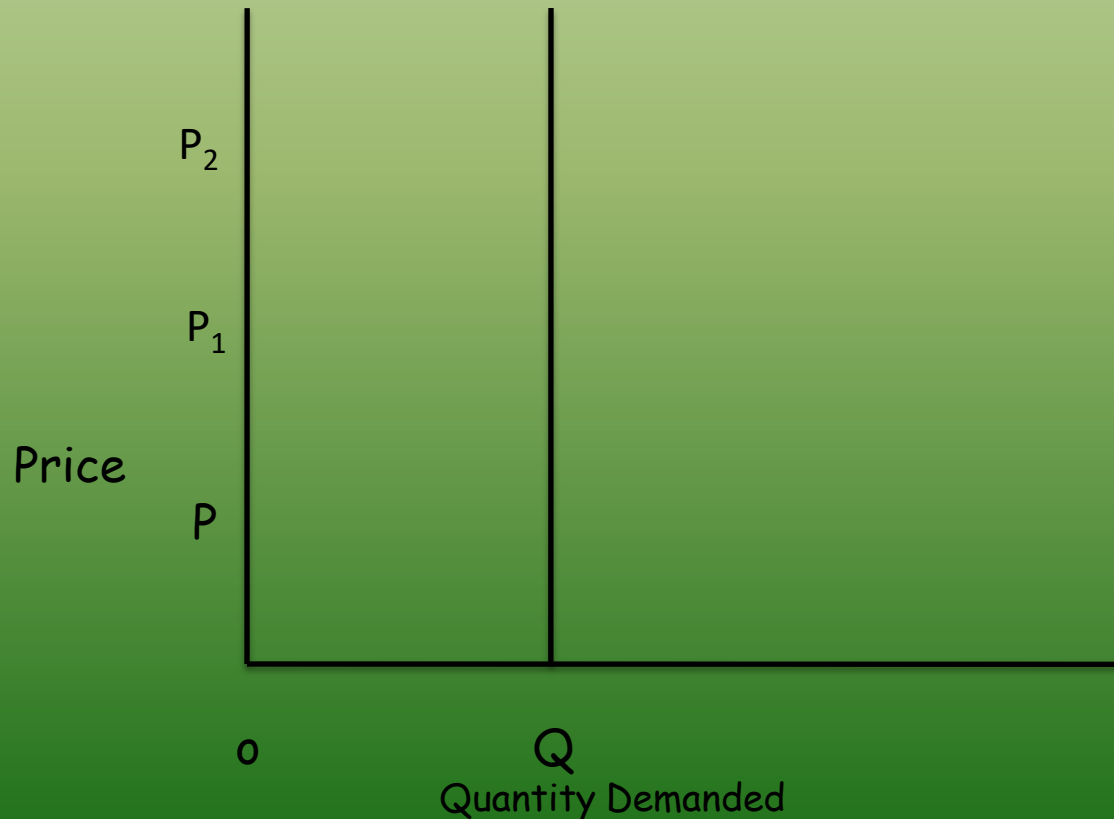d) Relatively inelastic demand
e) Unity elasticity

a) Perfectly Elastic Demand:

When any quantity can be sold at a given price, and when there is no need to reduce price, the demand is said to be perfectly elastic. In such cases, even a small increase in price will lead to complete fall in demand.
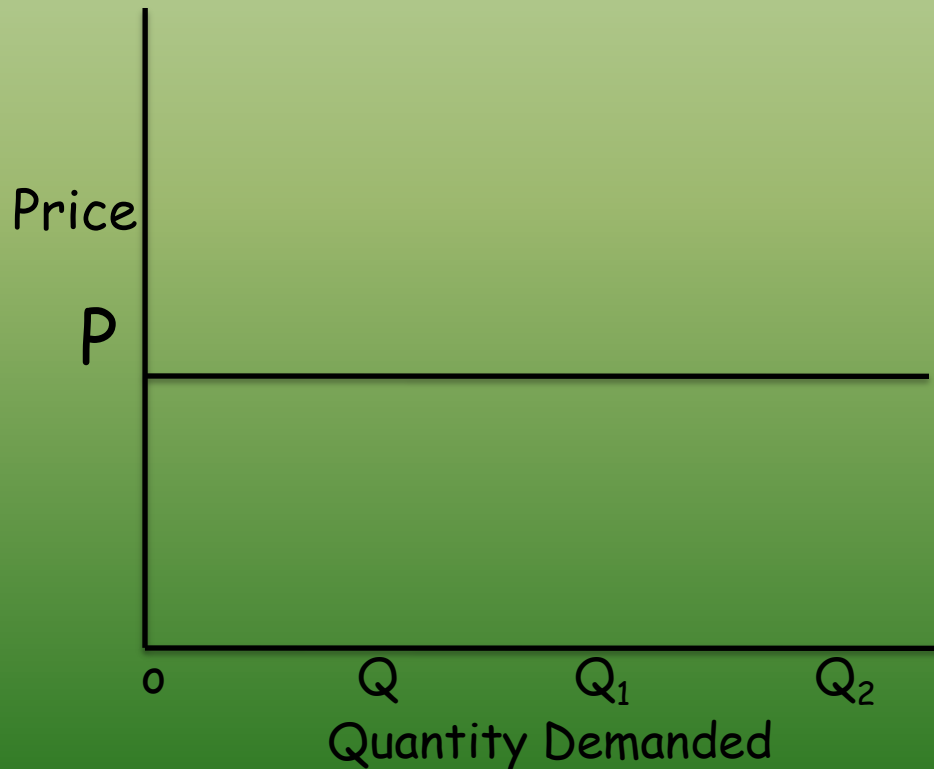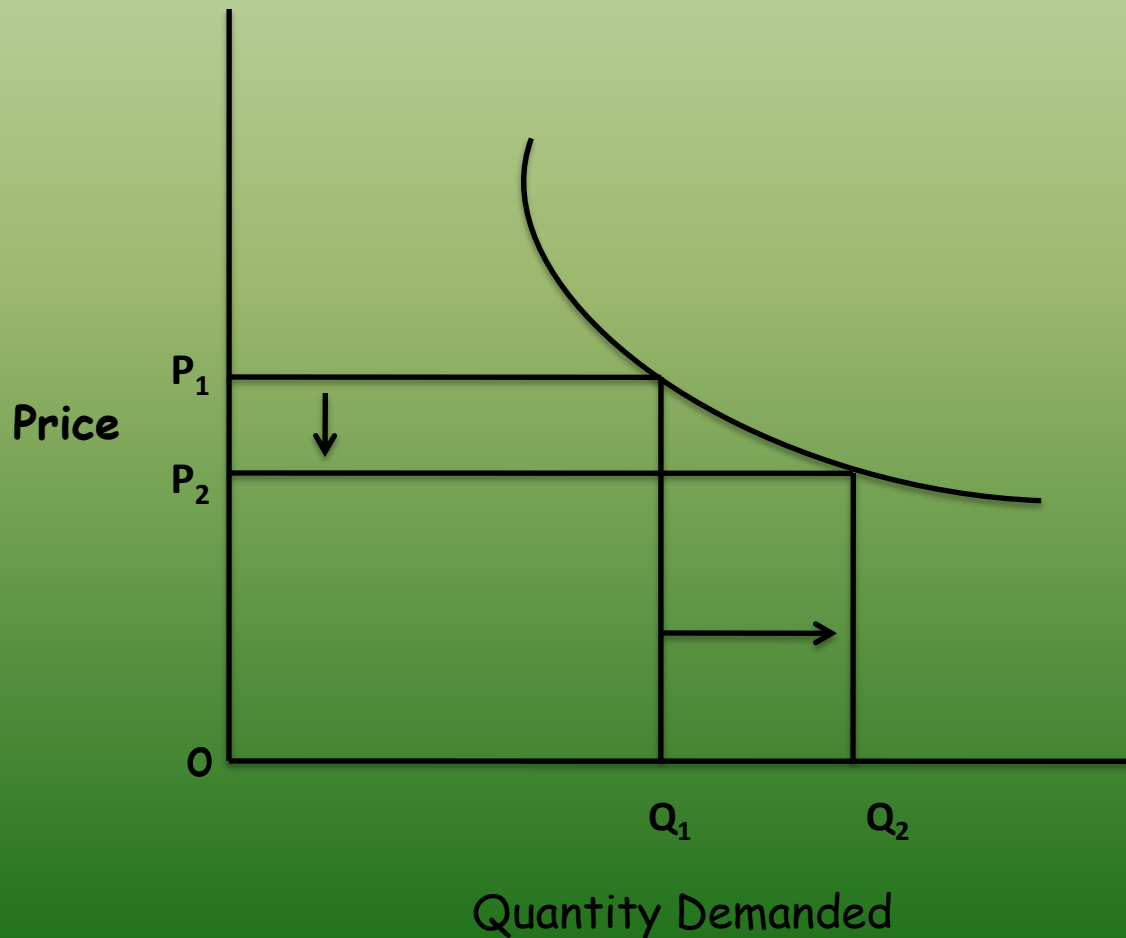
b) Perfectly Inelastic Demand:

When a significant degree of change in price leads to little or no change in the quantity demanded, then the elasticity is said to be perfectly inelastic. In other words, the demand is said to be perfectly inelastic when there is no change in the quantity demanded even though there is a big change (increase or decrease) in price.
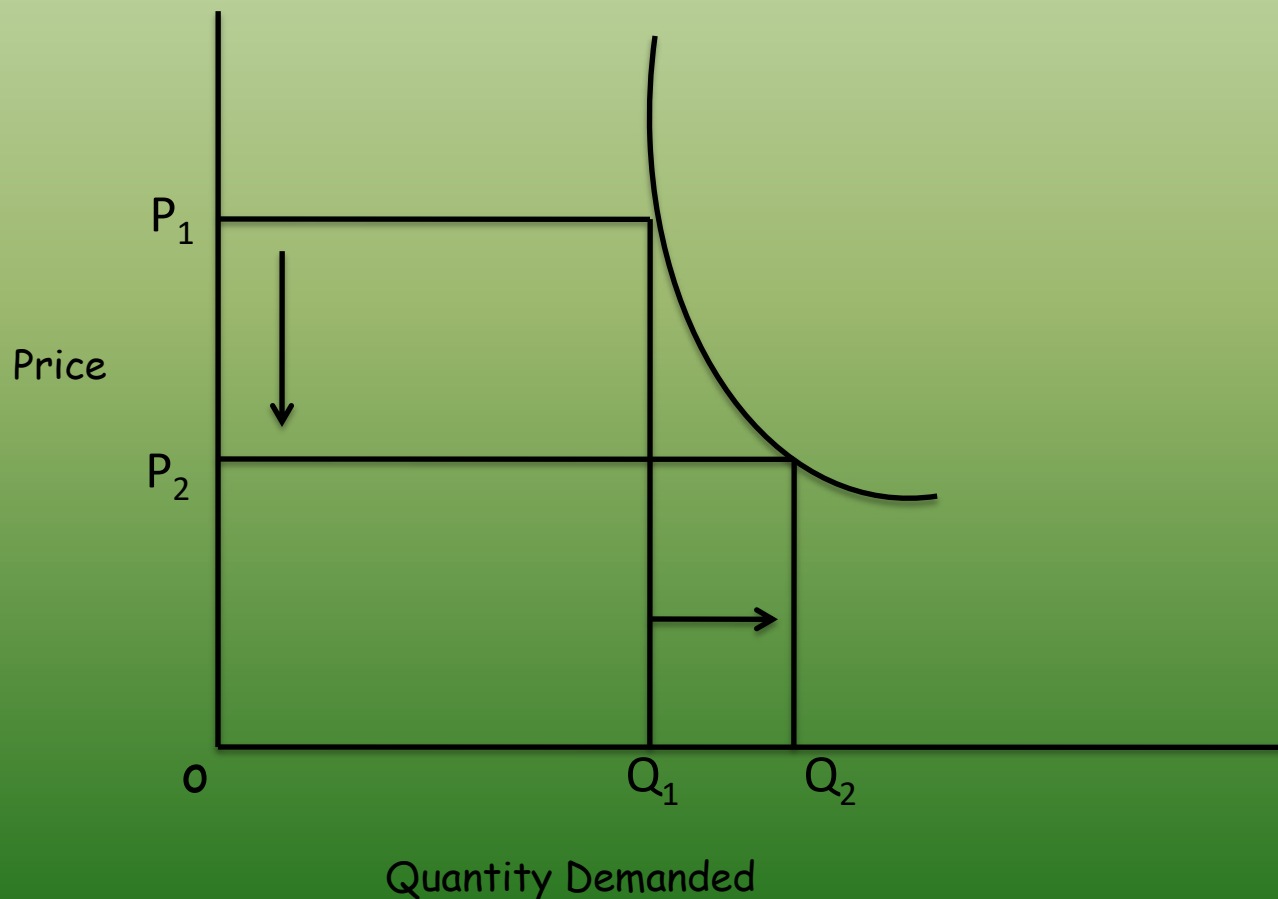
P_2

P_1

Price

P

o   Q

Quantity Demanded

c) Relatively Elastic Demand:

The demand is said to be relatively elastic when the change in demand is more than the change in the price.

d) Relatively Inelastic Demand:

The demand is said to be relatively inelastic when the change in demand is less than the change in the price.

Price

P_1

P_2

0   Q_1 Q_2

Quantity Demanded

e) Unity Elasticity:

The elasticity in demand is said to be unity when the change in demand is equal to the change in price.
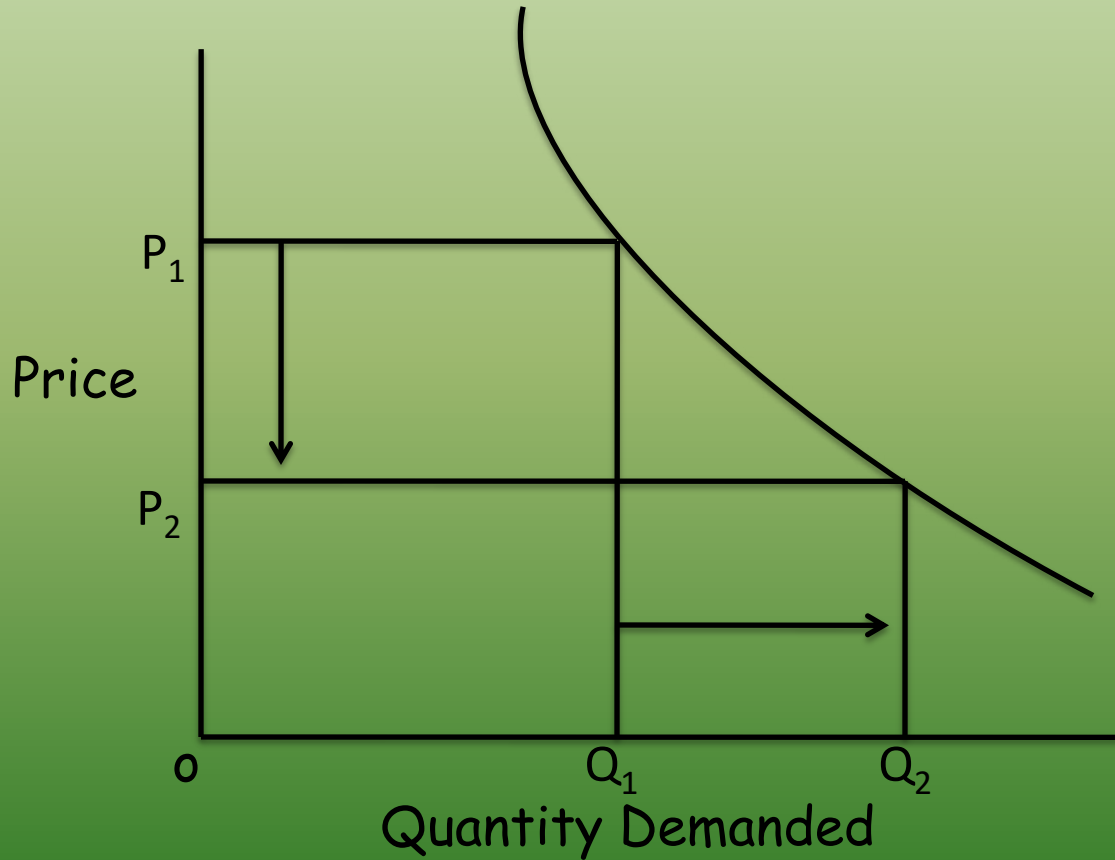
Types of Elasticity:

The following are the four types of elasticity of demand:

a. Price elasticity of demand
b. Income elasticity of demand
c. Cross elasticity of demand
d. Advertising elasticity of demand

a. *Price Elasticity of demand:*

Elasticity of demand in general refers to price elasticity of demand. In other words, it refers to the quantity demanded of a commodity in response to a given change in price. Price elasticity is always negative which indicates that the customer tends to buy more with every fall in the price. The relationship between the price and the demand is inverse.

It is measured as follows:

$$Edp = \frac{\text{Proportionate change in the quantity demanded for product X}}{\text{Proportionate change in the price of X}}$$

The same is expressed as

$$Edp = \frac{(Q_2 - Q_1)/Q_1}{(P_2 - P_1)/P_1}$$

b. *Income Elasticity of Demand:*

Income elasticity of demand refers to the quantity demanded of a commodity in response to a given change in income of the consumer.

Income elasticity is normally positive, which indicates that the consumer tends to buy more and more with every increase in income.

It is measured as follows:

$$Edi = \frac{\text{Proportionate change in quantity demanded for product X}}{\text{Proportionate change in income}}$$

The same is expressed as

$$Edi = \frac{(Q_2 - Q_1)/Q_1}{(I_2 - I_1)/I_1}$$

C. *Cross Elasticity of Demand:*

Cross elasticity of demand refers to the quantity demanded of a commodity in response to a change in the price of a related good, which may be substitute or complement.

It is measured as follows:

$$Edc = \frac{\text{proportionate change in quantity demanded for product X}}{\text{proportionate change in price of product Y}}$$

The same is expressed as:

$$Edc = \frac{(Q_2 - Q_1)/Q_1}{(P_2y - P_1y)/P_1y}$$

d. *Advertising Elasticity:*

It refers to increase in the sales revenue because of change in the advertising expenditure. In other words, there is a direct relationship between the amount of money spent on advertising and its impact on sales. Advertising elasticity is always positive.

$$Eda = \frac{\text{Proportionate change in quantity demanded for product X}}{\text{Proportionate change in advertisements costs}}$$

The same is expressed as

$$Eda = \frac{(Q_2 - Q_1)/Q_1}{(A_2 - A_1)/A_1}$$

Factors Governing Elasticity of Demand

a) Nature of product
b) Time frame
c) Degree of postponement
d) Number of alternative uses
e) Tastes and Preferences of the consumer
f) Availability of close substitutes
g) In case of complimentary or joint goods
h) Level of prices
i) Availability of subsidies
j) Expectation of prices
k) Durability of the product
l) Government policy

DEMAND FORECASTING

INTRODUCTION:

It is necessary to measure demand accurately in terms of quantity and its value for several purposes. Demand forecasting is helpful not only at the firm level but also at the national level.

Methods of demand forecasting:

Forecasting demand is not an easy exercise. It may be easy only in the case of a very few products or services. Where the demand for the product does not change from time to time or competition is not significant, it may be relatively easy to forecast demand for a particular product or service.

There are many methods of forecasting demand. To forecast demand, we needed to build a certain base of information. To build such an information base, we need to consider what the customers say, what the customers do, and how the customers behaved in a given marketing situation.

The different methods of forecasting demand can be grouped under (a) survey methods and (b) statistical methods

1. Survey methods
   (a) Survey of buyer intentions
   - Census method
   - Sample method
   (b) Sales force opinion method

2. Statistical methods
   (a) Trend projection method
   - Trend line by observation
   - Least square method
   - Time series analysis
   - Moving averages method
   - Exponential smoothing
   (b) Barometric techniques
   (c) Simultaneous equations method
   (d) Correlation and regression methods

3. Other methods
   (a) Expert opinion method
   (b) Test marketing
   (c) Controlled experiments
   (d) Judgemental approach

UNIT-2
THEORY OF PRODUCTION
&
COST CONCEPTS

The production function

Samuelson defines the production function as ***"the technical relationship which reveals the maximum amount of output capable of being produced by each and every set of inputs".*** It is defined for a given state of technical knowledge.

Michael R Baye defines production function as "that function which defines the maximum amount of output that can be produced with a given set of inputs".

Input-output relationship or production function:

The inputs for any product or service are land, labour, capital, organization and technology. In other words, the production here is the function of these five variable inputs.

Mathematically, this is expressed as

$$Q= f(L_1, L_2, C, O, T)$$

Where Q is the quantity of production, f explains the function, that is, the type of relation between inputs and outputs, L_1, L_2, C, O, T refer to land, labour, capital, organization and technology respectively. These inputs have been taken in conventional terms. In reality, materials also can be included in a set of inputs.

Production function with one variable input and laws of returns:

The Laws of Returns states that when at least one factor of production is fixed or factor input is fixed and when all other factors are varied, the total output in the initial stages will increase at an increasing rate, and after reaching certain level of output the total output will increase at declining rate. If variable factor inputs are added further to the fixed factor input, the total output may decline.

This law is of universal nature and it proved to be true in agriculture and industry also. The law of returns is also called the Law of Variable Proportions or the Law of Diminishing returns.
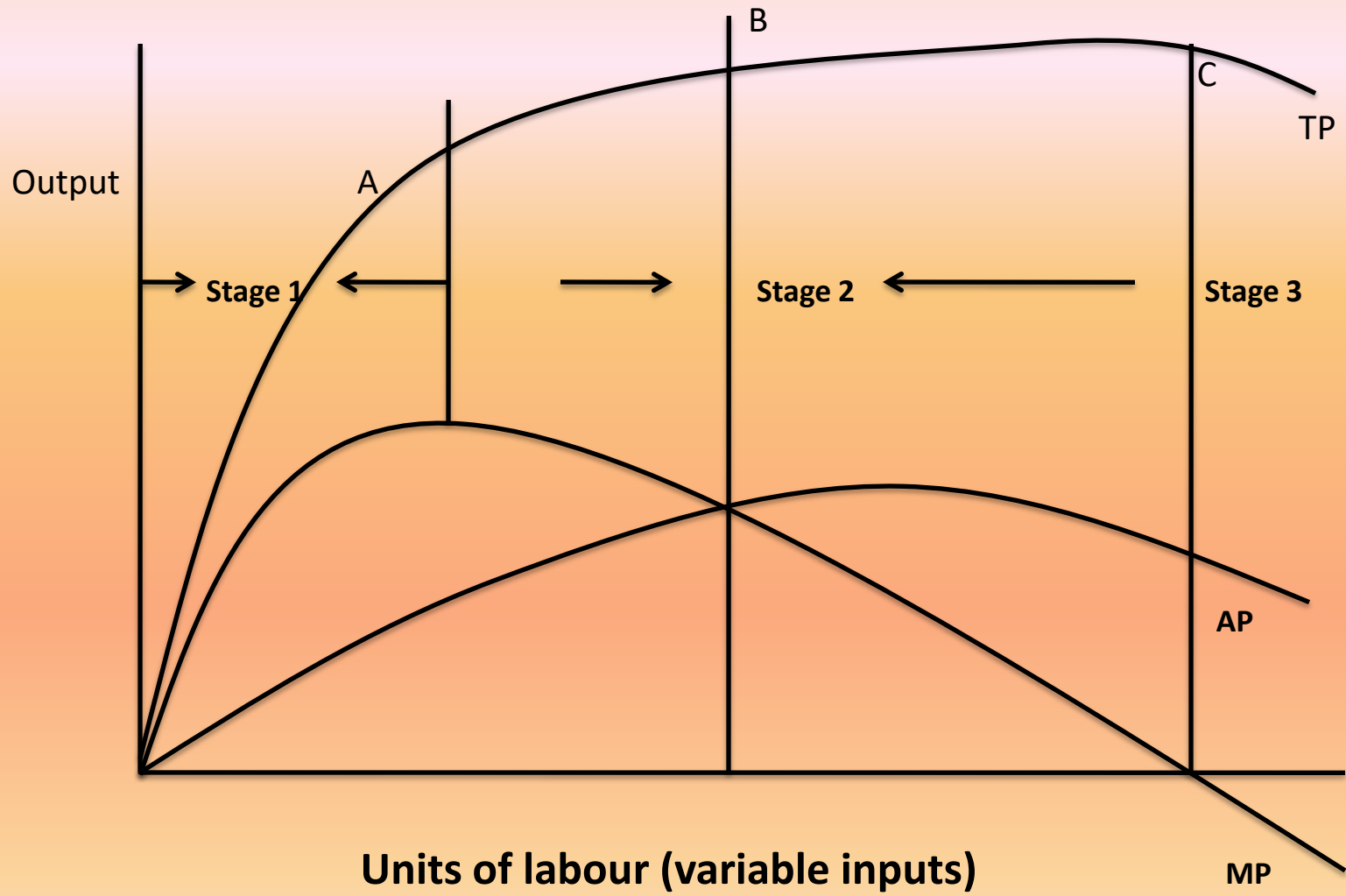
Output With Fixed Capital And Variable Labour Inputs

Units of labour	Total Product (TP)	Marginal Product (MP)	Average Product (AP)	Stages
0	0	0	0	Stage 1
1	10	10	10	
2	22	12	11	
3	33	11	11	Stage 2
4	40	7	10	
5	45	5	9	
6	48	3	8	
7	48	0	6.85	Stage 3
8	45	-3	5.62	

Production function with two variable inputs and laws of returns:

Let us consider a production process that requires two inputs, capital (C) and labour (L) to produce a given output (Q). There could be more than two inputs in a real life situation, but for a simple analysis, we restrict the number of inputs to two only. In other words, the production function based on two inputs can be expressed as:

Q= f(C, L)

Where C refers to **capital**, L is **labour**

Normally, both capital and labour are required to produce a product. To some extent, these two inputs can be substituted for each other. Hence the producer may choose any combination of labour and capital that gives him the required number of units of output.

ISOQUANTS:

'**Iso**' means equal; '**quant**' means quantity. Isoquant means that the quantities throughout a given isoquant are equal. Isoquants are also called isoproduct curves. An isoquant curve shows various combinations of two input factors such as capital and labour, which yield the same level of output.

Combinations	Capital(Rs. In lakh)	No. of Labourers
A	1	20
B	2	15
C	3	11
D	4	8
E	5	6
F	6	5
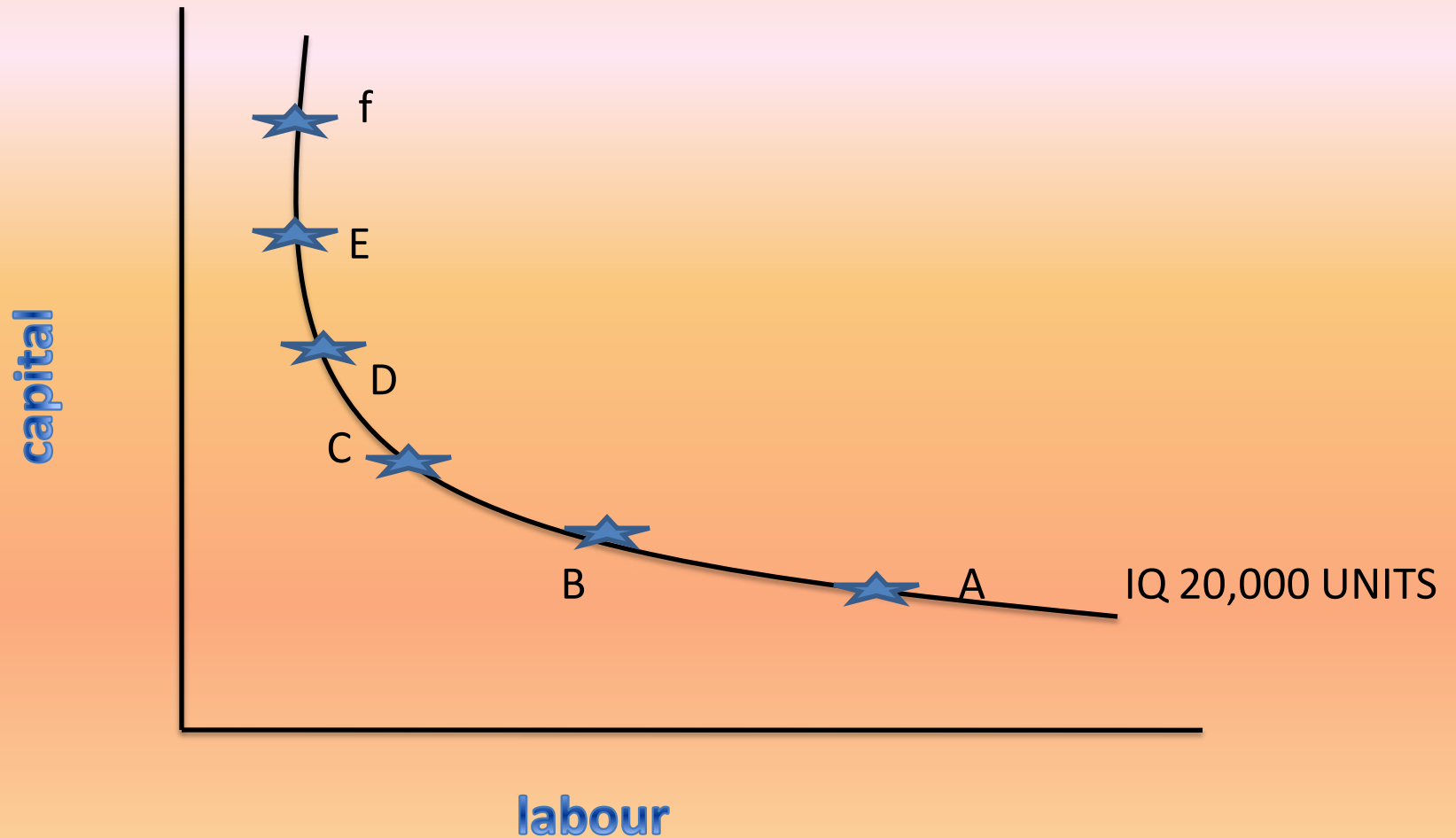
Isoquants yielding 20,000 units of production

Features of an Isoquant:

1. Downward sloping:

Isoquants are downward sloping curves because, if one input increases, the other one reduces. There is no question of increase in both the inputs to yield a given output.

2. Convex to origin:

Isoquants are convex to the origin. It is because the input factors are not perfect substitutes. One input factor can be substituted by other input factor in a 'diminishing marginal rate'.

3. *Do not intersect:*

Two isoproducts do not intersect with each other. It is because, each of these denote a particular level of output. If the manufacturer wants to operate at a higher level of output, he has to switch over to another isoquant with a higher level of output and vice versa.

4. *Do not touch axes:*

The isoquant touches neither X-axis nor Y-axis, as both inputs are required to produce a given product.

Capital

IQ$_3$= 40,000 units

IQ$_2$= 30,000 units

IQ$_1$= 20,000 units

Labour
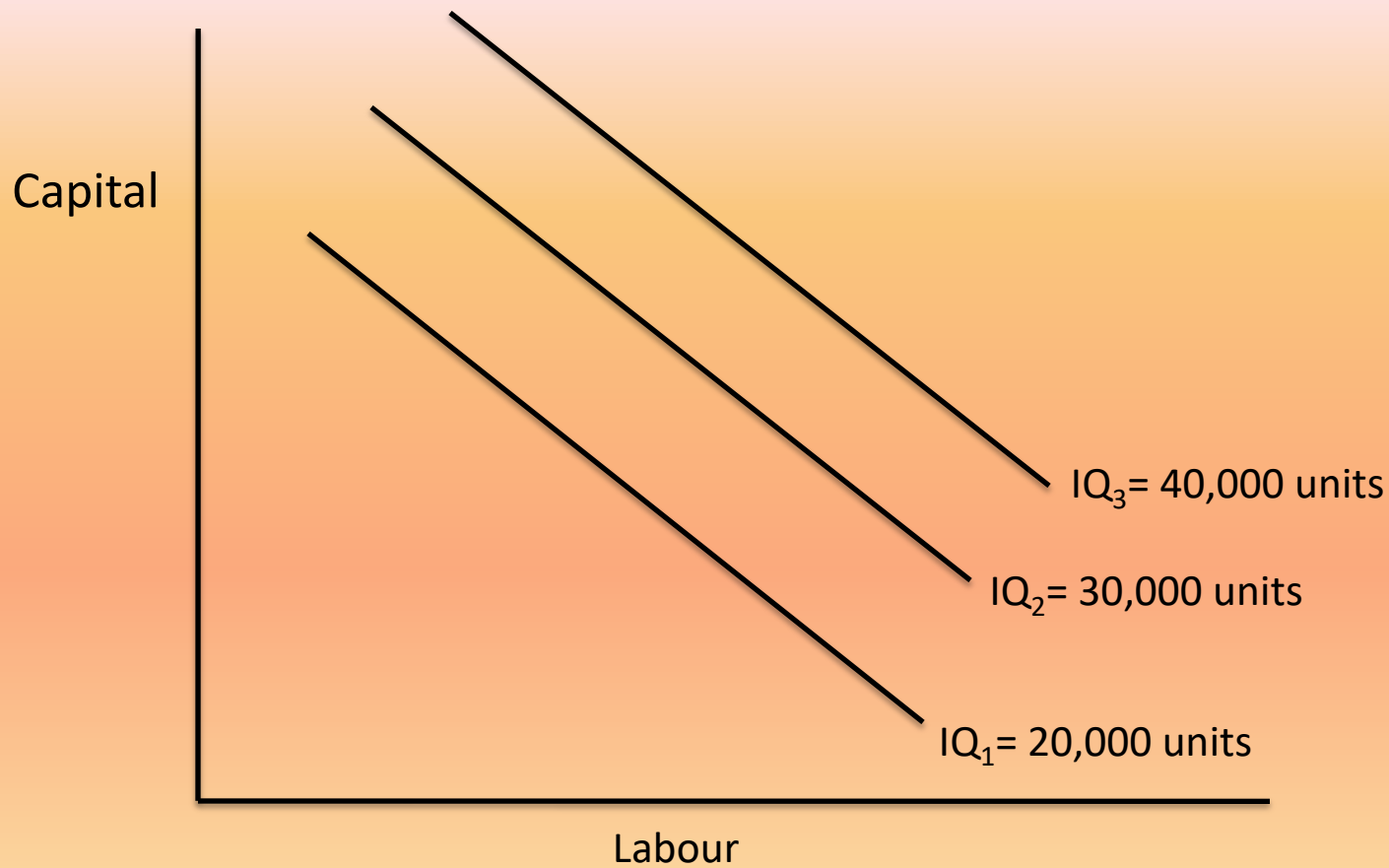
5.3 (a) isoquants were input factors are perfect substitutes

5.3 (b) isoquants were input factors are not perfect substitutes

Capital

Labour

$IQ_3 = 40,000$ units

$IQ_2 = 30,000$ units
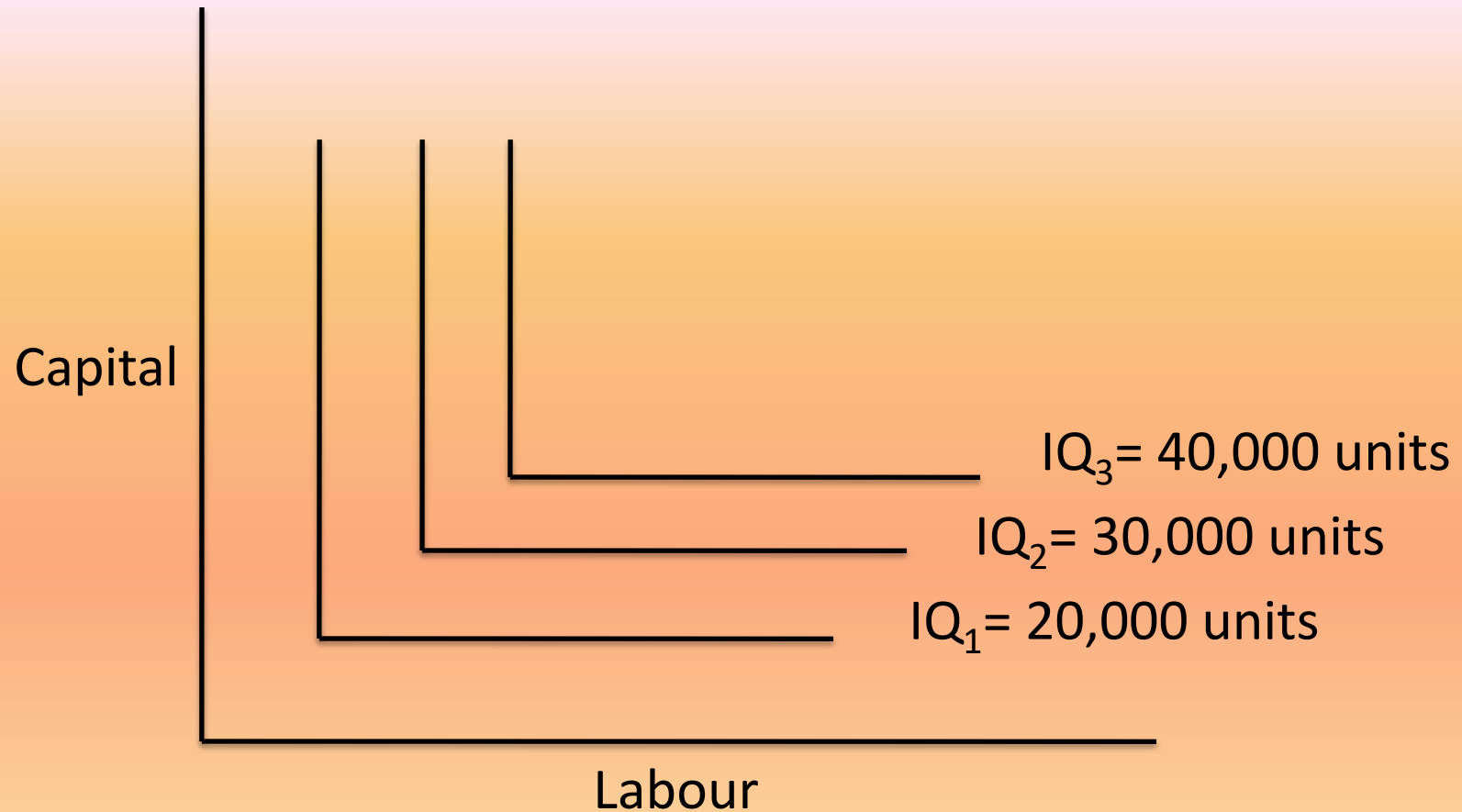
$IQ_1 = 20,000$ units
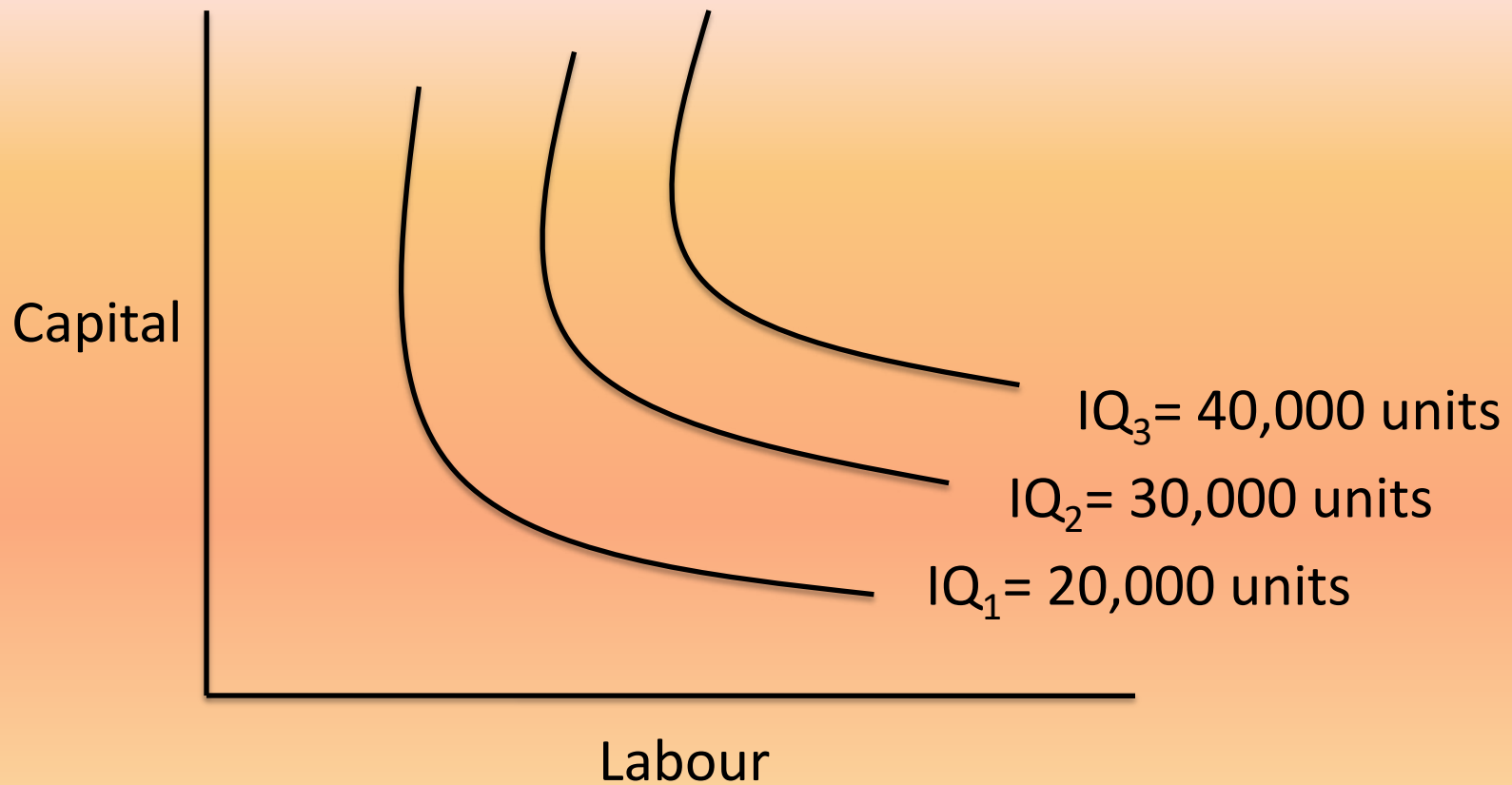
**5.3 (c) isoquants each showing different volumes of output**

Marginal Rate Of Technical Substitutions:

The marginal rate of technical substitution (MRTS) refers to the rate at which one input factor is substituted with the order to attain a given level of output. In other words, the lesser units of one input must be compensated by increasing amounts of another input to produce the same level of output. Table 5.3 presents the ratio of MRTS between the two input factors, say capital and labour. 5 units of decrease in labour are compensated by an increase in 1 unit of capital, resulting in a MRTS of 5:1.

| Combinations	Capital (Rs. In lakh)	Labour	Marginal rate of Technical Substitution (MRTS)
A	1	20	_
B	2	15	5:1
C	3	11	4:1
D	4	8	3:1
E	5	6	2:1
F	6	5	1:1

ISOCOSTS:

Isocost refers to that cost curve that represents the combination of inputs that will cost the producer the same amount of money. In other words, each isocost denotes a particular level of total cost for a given level of production. If the level of production changes, the total cost changes and thus the isocost curve moves upwards, and vise versa.
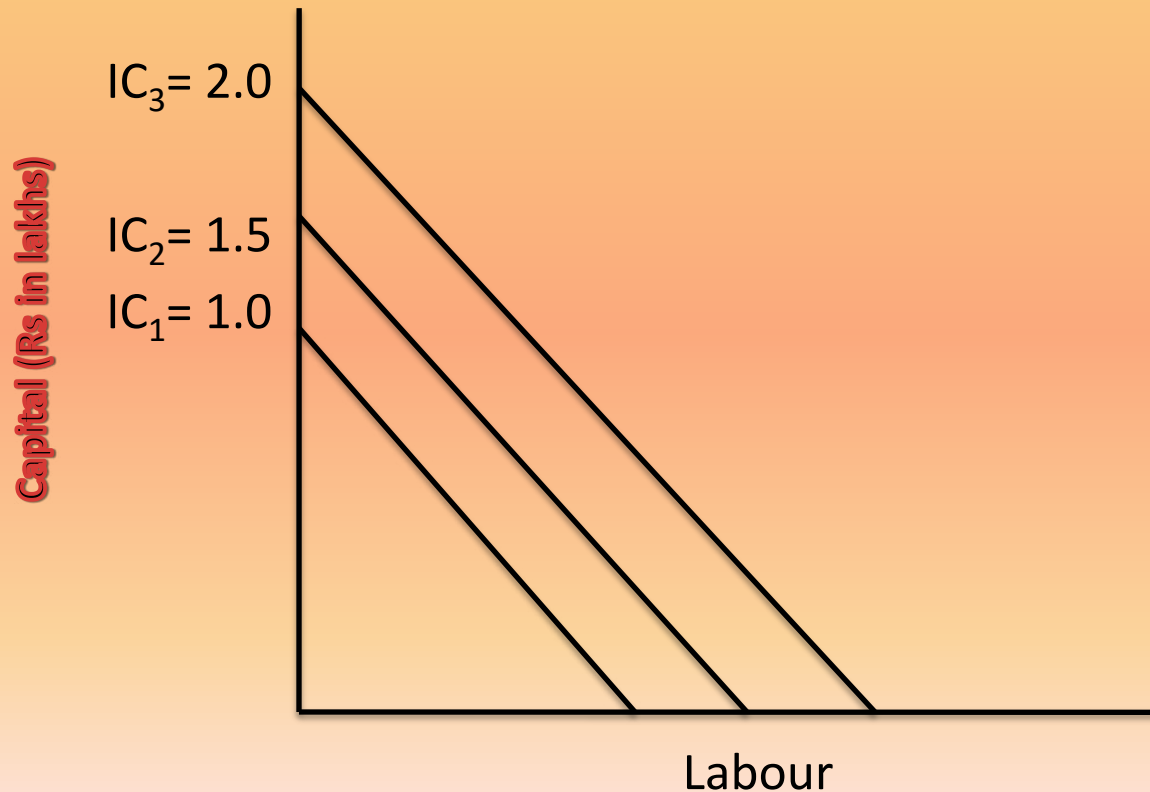
Least Cost Combination of Inputs:

The manufacturer has to produce at lower costs to attain higher profits. The isoquant and isoquants can be used to determine the input usage that minimizes the cost of production. Where the slope of isoquant is equal to that of isocost, there lies the lowest point of cost of production.
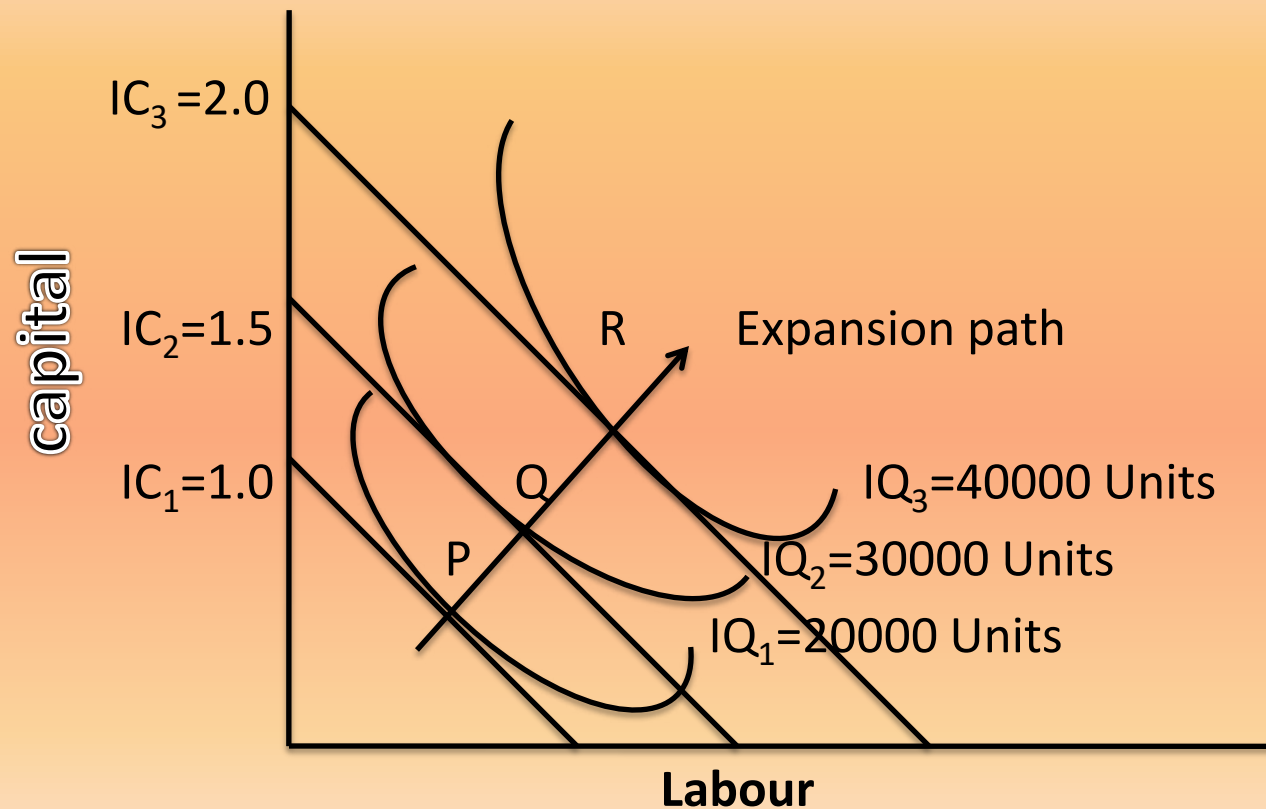
Least Cost Combination Of Inputs

COBB-DOUGLAS PRODDUCTION FUNCTION

Cobb and **Douglas** put forth a production function relating output in American manufacturing industries from **1899** to **1992** to labour and capital inputs. They used the following formula:

$$P= bL^a c^{1-a}$$

Where **p** is total output

L= The index of employment of labour in manufacturing

C = Index of fixed capital in manufacturing

The exponents **a** and **1-a** are the elasticities of production. These measures the percentage response of output to percentage changes in labour and capital respectively.

The function estimated for the USA by **cobb** and **Douglas** is

$$P= 1.01L^{0.75} C^{0.25}$$

$$R^2= 0.9409$$

The coefficient of determination (R2) means that 94 percent of the variations on the dependent variable (p) were accounted for by the variations in the independent variables(L and C)

RETURNS TO SCALE AND RETURNS TO FACTOR

Returns to scale refers to the returns enjoyed by the firms as a result of changing in all the inputs. It explains the behavior of the returns when the inputs are changed simultaneously. The returns to scale are governed by laws of returns to scale.

Law Of Returns To Scale

There are three laws of returns governing production function. They are

a) Law of increasing Returns to scale

b) Law of constant Returns to scale

c) Law of decreasing Returns to scale

a) **Law of increasing Returns to scale**

   This law states that the volume of output keeps on increasing in the inputs.

b) **Law of constant Returns to scale**

   When the scope for division of labour gets restricted, the rate of increase in the total output remains constant, the laws of constants returns to scale is said to operate.

c) **Law of decreasing Returns to scale**

   Where the proportionate increase in the inputs does not lead to equivalent increase in outputs, the output increases at a decreasing rate, the law of decreasing returns to scale is said to operate.

Capital (in units)	Labour (in units)	Percentage of increase in both inputs	Outputs (in units)	Percentage of increase in output	Laws applicable
1	3	---	---	---	---
2	6	100	120	140	Law of increasing returns to scale
4	12	100	240	100	Law of constant returns to scale
8	24	100	360	50	Law of decreasing returns to scale

RETURNS TO FACTORS

A. **Total productivity:**

      The total output generated at varied levels of inputs of a particular factor (constant), is called total productivity.

B. **Average productivity:**

      The total physical product divided by the number units of that particular factor used yields averages productivity.

C. **Marginal productivity:**

      The marginal physical product is the additional output generated by adding an additional unit of the factor under study, keeping the other factor constant.

ECONOMIES AND DISECONOMIES OF SCALE

ECONOMIES:

The economies of scale result because of increase in the scale of prodution.

A. Internal economies

B. External economies

ECONOMIES

INTERNAL ECONOMIES

a) Managerial economies
b) Commercial economies
c) Financial economies
d) Technical economies
e) Marketing economies
f) Risk –bearing economies
g) Indivisibilities and automated machinery
h) Economies of larger dimension
i) Economies of R&D

EXTERNAL ECONOMIES

a) Economies of concentration
b) Economies of R&D
c) Economies of welfare

INTERNAL ECONOMIES

Internal economics refer to the economies in production costs which accrue to the firm alone when it expands its output.

a) **Managerial economies:** As the firm expands, the firm needs qualified managerial functions: marketing, finance, production, HR and other professional way.

b) **Commercial economies:** The transactions of buying and selling raw materials and other operating suppliers such as spars and so on.

c) **Financial economies:** There could be cheaper credit facilities from the financial institutions to meet the capital expenditure or working capital requirements.

d) **Technical economies:** Increase in the scale of production follows when there is sophisticated technology available and the firm is in a position to hire qualified technical manpower to make use of it.

e) Marketing economies:

It handle the issues related to design of customer surveys, advertising material, promotion campaign, handling of sales and marketing staff, renting of hoardings, launching a new product and so on.

f) Risk-bearing economies:

As there is growth in the size of the firm, there is increase in the risk also. Sharing the risk with the insurance companies is the first priority.

g) Indivisibilities and automated machinery:

To manufacture goods, a plant of certain minimum capacity is required whether the firm would like to produce and sell at full capacity or not.

h) Economies of larger dimension:

Large scale production is required to take advantage of bigger size plants.

i) Economies of research and development:

Large organizations such as Dr. Reddy's labs, Hindustan Lever spend heavily on R&D and brings out several innovative products.

EXTERNAL ECONOMIES

External economies refers to all the firms in the industry, because of growth of the industry as a whole because of growth of ancillary industries.

❖ Economies of concentration:

Because all the firms are located at one place, it is likely that there is better infrastructure in terms of approach roads, transportation facilities such as railway lines and so on, banking and communication facilities, availability of skilled labour and such factor.

❖ Economies of R&D:

All the firms can pool resources together to finance R & D activities and thus share the benefits of research.

❖ Economies of welfare:

There could be common facilities such as canteen, industrial housing community halls, schools and colleges, employment 'bureau', hospitals and so on, which can be used in common by the employees in the whole industry.

DISECONOMIES:

Diseconomies are mostly managerial in nature. Problems of planning, coordination, communication and control may become increasingly complex as the firm grows in size resulting in Increasing average cost per unit. Sometimes, the firm may also collapse.

COST ANALYSIS

The managerial economist is concerned with making managerial decisions. Different business proposals are evaluated in terms of their costs and revenues. To know what costs are to be examined, it is necessary to understand what 'cost' is and how to analyse the same.

The Concept And Nature Of Cost:

Costs refers to the expenditure incurred to produce a particular product or service. All costs involve a sacrifice of some kind or other to acquire some benefit. **For example,** if I want to eat food, I should be prepared to sacrifice money.

Costs may be monetary or non-monetary; tangible or intangible, determined subjectively or objectively. Socials costs such as pollution, noise or traffic congestion add another dimension to the cost concept.

The following are the possible variations in the concept of cost.

1. Long-run **vs** Short-run Costs
2. Fixed **vs** Variable Costs
3. Semi-fixed **or** Semi-variable Costs
4. Marginal Cost
5. Controllable **vs** Non-controllable Costs
6. Opportunity **vs** Outlay Costs
7. Explicit **vs** Implicit Costs
8. Out-of-pocket **vs** Book   Costs
9. Replacement Costs **vs** Historical Costs
10. Past Costs **vs** Future Costs
11. Separable Costs **vs** Joint Costs
12. Urgent **vs** Postponable Costs

BREAK- EVEN ANALYSIS

INTRODUCTION:

Profit maximization is one of the major goals of any business. The other goals include enlarging the customer base, entering new markets, innovation through major investments in research and development, and so on. The volume of profit is determined by a number of internal and external factors.

BREAK-EVEN ANALYSIS :

Break-even analysis refers to analysis of Break-even point (BEP). The BEP is defined as a no-profit or no-loss point . Why is it necessary to determine the BEP when there is neither profit nor loss ? It is important because it denotes the minimum volume of production to be undertaken to avoid losses.

Break-even analysis is defined as analysis of costs and their possible impact on revenues and volume of the firm . Hence , it is also called the cost-volume-profit analysis. A firm is said to attain the BEP when its total revenue is equal to total cost (TR=TC).

KEY TERMS USED IN BEA :

a)   **FIXED COST:** Fixed costs remain fixed in the short-run. EXAMPLES are rent, insurance, depreciation, factory supervisor's salaries, directors salaries, and so on.

b) **VARIABLE COST:** It includes cost of direct material, direct labour , direct expenses, operating supplies such as lubricating oil, and so on.

c) **TOTAL COST:** The total of fixed and variable costs.

d) **TOTAL REVENUE:** The sales proceeds(selling price per unit* no. of units sold)

e) **CONTRIBUTION MARGIN**: Fixed cost per unit + profit per unit

f) **PROFIT** = Contribution – Fixed cost.

g) CONTRIBUTION MARGIN RATIO: It is the ratio between contribution per unit and the selling price per unit

h) MARGIN SAFETY IN UNITS: the excess of actual sales (in units) minus the BEP(in units)

i) MARGIN OF SAFETY IN SALES VOLUME: The excess of actual sales(in rupees) minus the BEP(in rupees)

j) ANGLE OF INCIDENCE: the angle formed where total cost curve cuts the total revenue curve.

k) P/V RATIO: the ratio between the contribution and sales.

GRAPHICAL REPRESENTATION OF BEP

I.   TC= total variable cost(TVC)+Total fixed cost +(TFC)

II.   The variable cost line is drawn first. It varied proportionately with volume of production and sales.

III.   The TC line is derived by adding total variable cost line. The total cost line is parallel to variable cost line.

IV.   The total revenue line starts from 0 point and increases along with volume of sales interesting total cost line at point BEP.

V.   The zone below BEP is loss zone and the zone above BEP is profit zone.

VI.   OP is the quantity produced/ sold at OC the cost/price at BEP.

VII.   The angle formed at BEP, that is, the point of interesting of total revenue and total cost is called angle of incidence

VIII. The larger the angle of incidence , the higher is the quantum of profit once the fixed costs are absorbed.

ix) Margin of safety refers to the excess of production or sales over and above the BEP of production / sales .The margin of safety is OQ minus OP . The sales value at OQ is OD. It can be observed that the firm reaches break even point at point BEP . At BEP , the total cost is equal to total revenue . OP is the volume of production / sales at the cost / revenue of OC. The zone below BEP is called loss zone and zone above BEP is called profit zone.
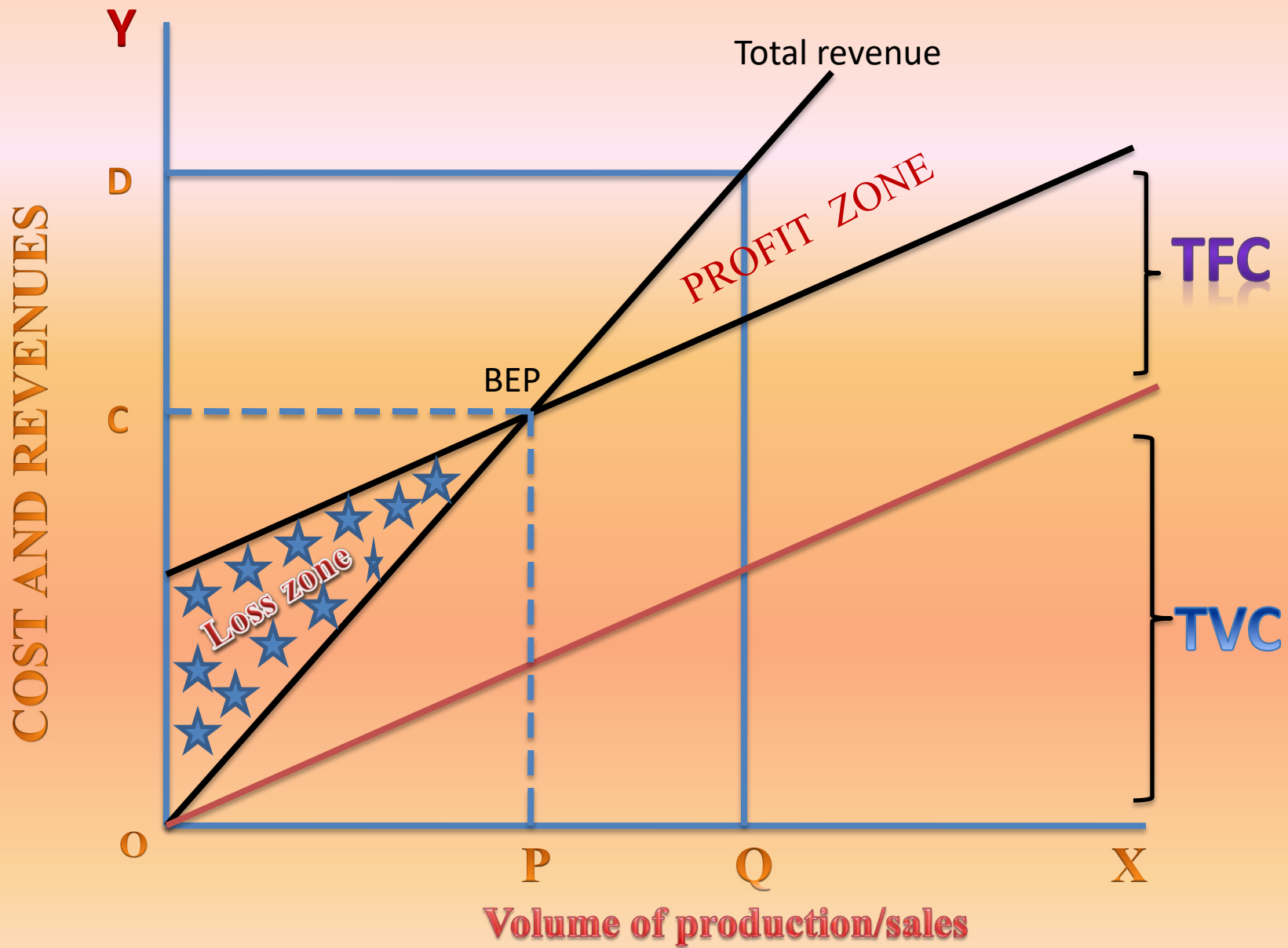
Graphical representation of break even-point

Applications of Break-even Analysis

The following are the some of the significant areas of applications of break-even analysis.

1. **Make or Buy Decision:**

   Often, the manager is confronted with 'make or buy' decisions the necessary components or spare parts. Where the consumption is large, making may be economical.

2. **Choosing a Product Mix when there is a Limiting Factor:**

   It is very likely that the company may be dealing in more than one product and company wants to know, in view of the limited plant capacity.

3. **Drop or Add Decisions:**

   It is common that the firms keep on adding new products to their product range while dropping the old ones to keep pace with the changing demand.

Determination of Break-even Point:

The following are the key terms used in determination of break-even point:

Selling prices = Fixed cost + Variable cost + profit

Selling price – Variance cost = Fixed cost + profit

= Contribution

Contribution per unit = Selling price per unit – Variable cost per unit

Having studied the nature of fixed and variable costs in the earlier, we will now discuss how to determine break-even point.

a) Determination of Break-even profit in units:

$$\text{Break-even point} = \frac{\text{Fixed costs}}{\text{Contribution margin per unit}}$$

Where contribution margin per unit= (selling price per unit - Variable cost per unit)

b) Determination of BEP in value:

$$\text{BEP} = \frac{\text{Fixed costs}}{\text{Contribution margin ratio}}$$

Where contribution margin ratio is the ratio of contribution margin per unit to selling price per unit.

Different Formulae Used in Break-even Analysis and their Applications

The following are the variations of the formula of break-even analysis:

1. **Profit-volume (P/V) ratio** = (Contribution/Sales). If multiplied by 100, it can be expressed in terms of percentage.

This has been derived from the following basic formula:

$$\frac{\text{Fixed cost} \times \text{Sales}}{\text{Sales} - \text{Variable Cost}} \quad (\text{or}) \quad \frac{\text{Fixed Cost}}{\text{P/V ratio}}$$

2. Margin of safety can be determined by the following formula:

$$\textbf{Margin of safety} = \frac{\text{Profit}}{\text{P/V ratio}}$$

3. To ascertain the volume of sales required to achieve a targeted amount of profit:

$$\textbf{Volume of sales to attain a targeted profit} = \frac{\text{Fixed costs} + \text{Targeted profit}}{\text{Contribution margin}}$$

Significance of BEA:

Break-even analysis is a valuable tool

- To ascertain the profit on a particular level of sales volume or a given capacity of production
- To calculate sales required to earn a particular desired level of profit
- To compare the product lines, sales area, methods of sales for individual company
- To compare the efficiency of the different firms
- To decide whether to add a particular product to the existing product line or drop one from it
- To decide to 'make or buy' a given component or spare part
- To decide what promotion mix yield optimum sales
- To asses the impact of changes in fixed cost, variable cost or selling price on BEP and profits during a given period

Limitations of BEA:

Break-even analysis has certain underlying assumptions which form its limitations.

1. Break-even point is based on fixed cost, variable cost and total revenue. A change in one variable is going to affect the BEP.

2. All costs cannot be classified into fixed and variable costs. We have semi-variable costs also.

3. In case of multi-product firm, a single chart cannot be of any use. Series of charts have to be made use of.

4. It is based on fixed cost concept and hence holds good only in the short-run.

5. Total cost and total revenue lines are not always straight as shown in the figure. The quantity and price discounts are the usual phenomena affecting the total revenue line.

6. Where the business conditions are volatile, BEP cannot give stable results.

THANK YOU

UNIT-3

INTRODUCTION TO MARKETS

&

NEW ECONOMIC ENVIRONMENT

MARKET:

Markets constitute an important phase in the economic activity. All the goods and services that are produced need to be sold to the consumer for a price. Markets facilitate this process. We cannot imagine a society without markets even for a while.

MARKET DEFINED:

Market is defined as a place or point at which buyers and sellers negotiate their exchange of well-defined products and services.

Traditionally, market was referred to as an public place in a village or town where provisions and other objectives were brought for sale. Based on the location, markets as classified as rural, urban, national, or world markets. A market is said to exist wherever there is potential for trade.

SIZE OF THE MARKET:

The size of the market depends on many factors such as nature of products, nature of their demand, tastes and preferences of the customers, their income level, state of technology, extent of infrastructure including telecommunications and information technology, time factor in terms of short-run or long-run and so on.

MARKET STRUCTURE:

Market structure refers to the characteristics of a market that influence the behavior and performance of firms that sell in that market.

The structure of market is based on its following features:

(a) The degree of seller concentration

(b) The degree of buyer concentration

(c) The degree of product differentiation

(d) The conditions of entry into the market

TYPES OF COMPETITION:

Based on degree of competition, the markets can be divided into perfect markets and imperfect markets. In perfect markets, there is said to prevail perfect competition and in case of imperfect markets, imperfect competition. Perfect competition is said to exist when certain conditions are fulfilled. These conditions are ideal and hence only imaginative, not realistic.

PERFECT COMPETITION AND PERFECT MARKET:

A market structure in which all firms in an industry are price takers and in which there is freedom of entry into and exit from the industry is called Perfect Competition. The market with perfect competition conditions is known as **"Perfect Market".**

FEATURES:

The following are the features of perfect competition. In other words, these are the assumptions underlying perfect markets.

(a) Large number of buyers and sellers

(b) Homogeneous products or services

(c) Freedom to enter or exit the market

(d) Perfect information available to the buyers and sellers

(e) Perfect mobility of factors of production

(f) Each firm is a price taker

IMPERFECT COMPETITION:

A competition is said to be imperfect when it is not perfect. In other words, when any or most of the above conditions do not exist in a given market, it is referred to as an imperfect market. Based on the number of buyers and sellers, the imperfect markets are classified as explained below:

Based on the number of buyers and seller, the structure of market varies as outlined below: **'poly'** refers to **seller** and **'psony'** means **buyer.**

MONOPOLY:

If there is only one seller, monopoly market is said to exist. An extreme version of imperfect market is monopoly. Here a single seller completely controls the entire the industry. **For Ex:** **Maruthi-Suzuki** ,,,,,Most of the state electricity boards enjoy monopoly in terms of the generation and transmission of power.

MONOPOLISTIC COMPETITION:

When large number of sellers produce differentiated products, monopolistic competition is said to exist. A product is said to be differentiated when its important features vary. It may be differentiated based on real or perceived differences. **For Ex:** Cameras – Yashica, Nikon, Kodak.

DUOPOLY:

If there are two sellers, duopoly is said to exist. If **pepsi** and **coke** are the two companies in soft drinks, this market is called **duopoly**. **For Ex:** satellite communication by Mahanagar Telephone Nigam Limited (MTNL) and Videsh Sanchar Nigam Limited (VSNL).

OLIGOPOLY:

Another variety of imperfect competition is oligopoly. If there is competition among a few sellers, oligopoly said to exist. **For ex:** Car manufacturing companies and news papers.

MONOPSONY:

If there is only one buyer, monopsony market is said to exist. Food corporation of India is the only government organization that purchases the agricultural produce such as rice and so on.

DUOPSONY :

If there are two buyers, duopsony is said to exist.

OLIGOPSONY :

If there are a few buyers, oligopsony is said to exist. There are a few newspaper publishing companies in India and all these buy newsprint from the government of India.

MONOPOLY: Monopoly refers to a situation where a single firm is in a position to control either supply or price of a particular product or service. It cannot control or determine both price and supply as it cannot control demand.

monopoly exists where there are certain restrictions on the entry of other firms into business or where there are no close substitutes for a given product or service.

FEATURES OF MONOPOLY:

1. There is a single firm dealing in a particular product or service.

2. There are no close substitutes and no competitors. Intellectual Property Rights(IPRs), exclusive possession of factors of production including latest technology make the firm more monopolistic in nature. Railways had monopoly over distribution system till the road transport system developed in terms of fuel efficient heavy trucks.

3. The monopolist can decide either the price or quantity, not both.

4. The products and services provided by the monopolist bear inelastic demand.

5. Monopoly may be created through statutory grant of special privileges such as licences, permits, patent rights, and so on.

In case of monopoly, the marginal revenue(MR) is always less than the average revenue(AR) because of quantitative discounts or concessions.

PRICE

AR

MR
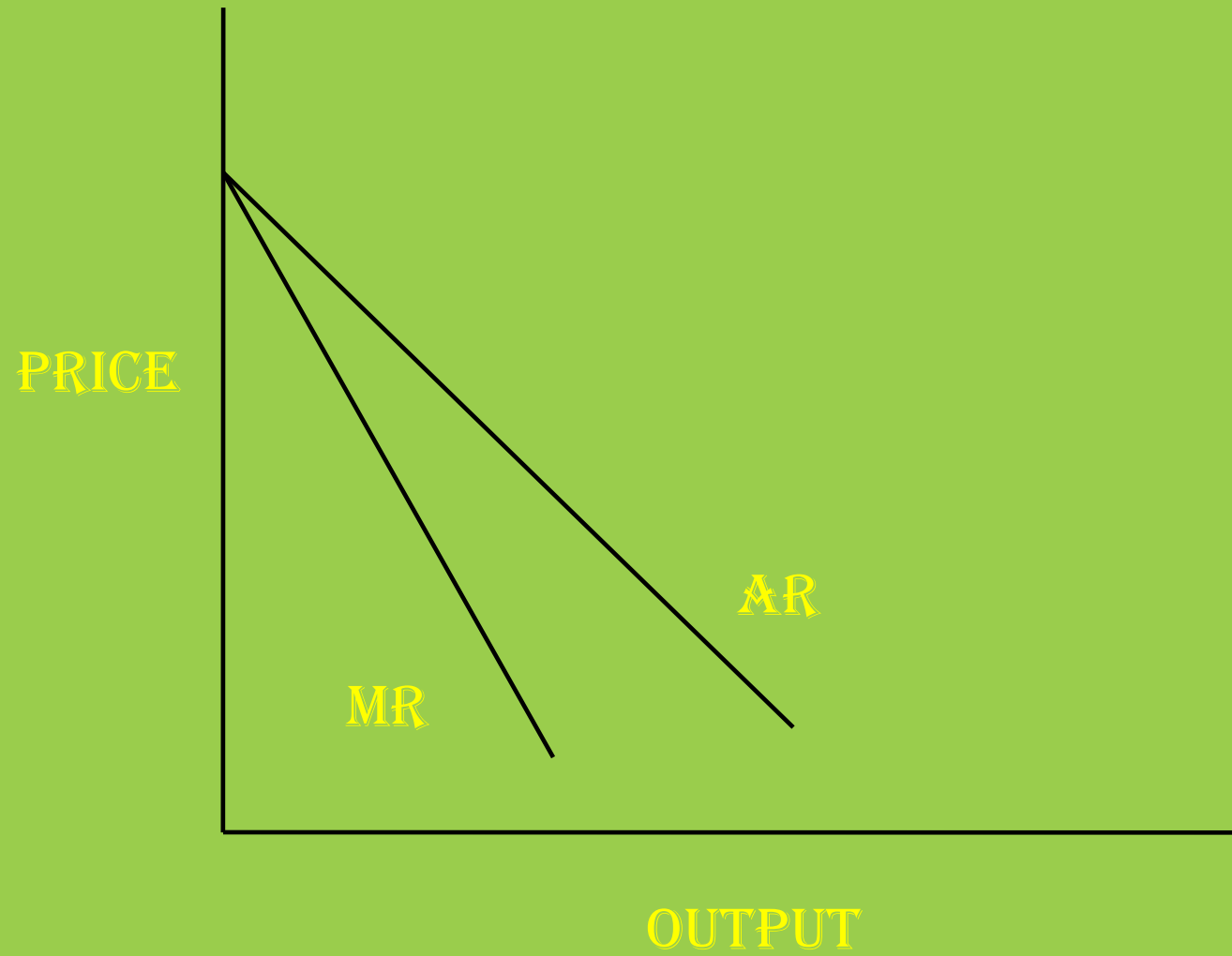
OUTPUT

IN MONOPOLY, MR < AR

PRICE – OUTPUT DETERMINATION IN MONOPOLY:
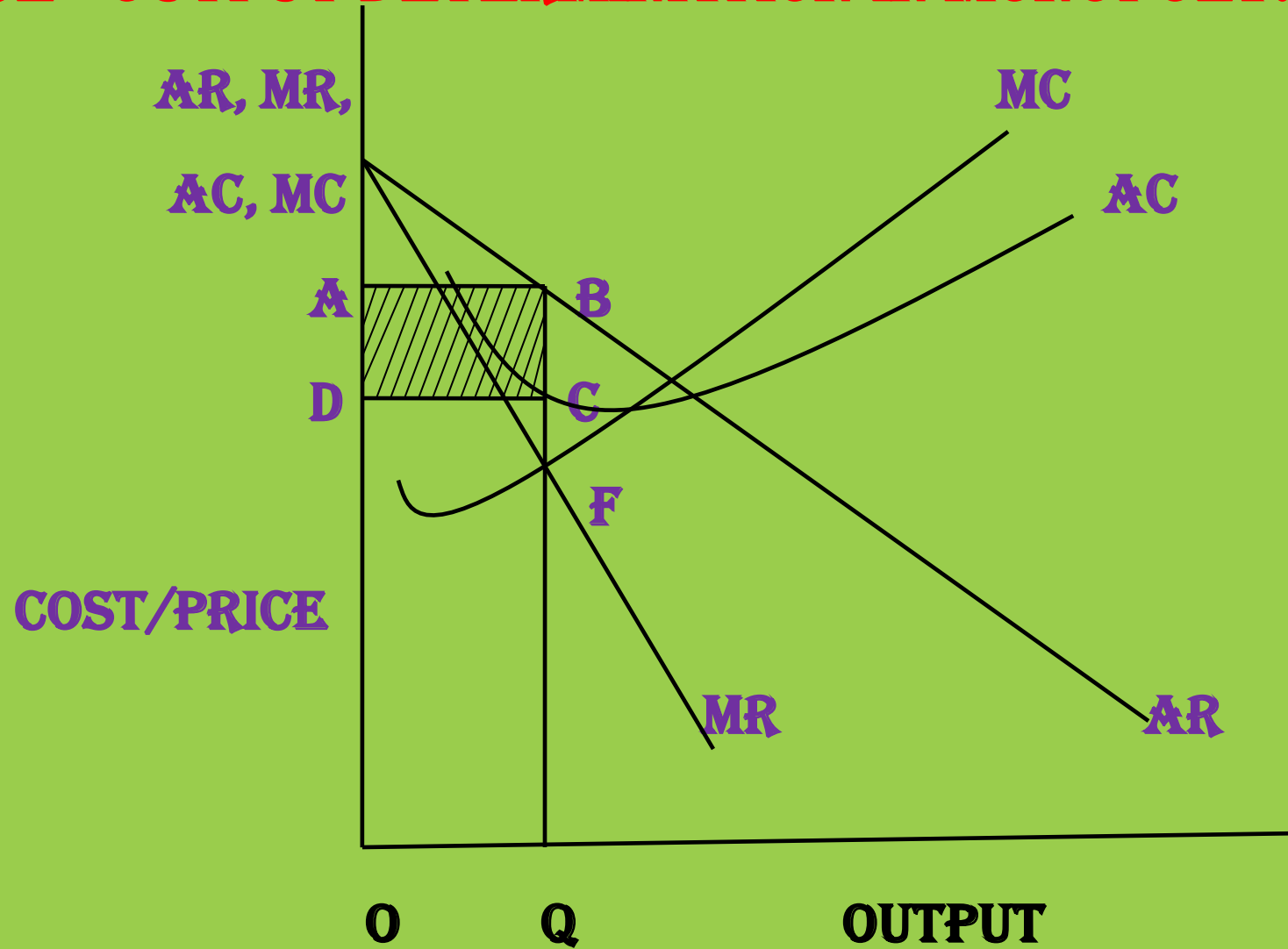
Under monopoly, the average revenue curve for a firm is a downward sloping one.

It is because if the monopolist reduces the price of his product, the quantity demanded increases and vice versa. In monopoly , marginal revenue is less than the average revenue. In other words, the marginal revenue curve lies below the average revenue curve.

The monopolist always wants to maximize his profits. To achieve maximum profits, it is necessary that the marginal revenue should be more than the marginal cost.

He can continue to sell as long as the marginal revenue exceeds marginal cost . At point F, where MR=MC, profits will be maximized. Profits will diminish if the production is continued beyond this point.

OQ is the equilibrium output, OA is the equilibrium price, QC is the average cost, and BC is the average profit (AR minus AC is the average profit).

Upto OQ output, MR is greater than MC and beyond OQ, MR is less than MC. Therefore, the monopolist will be in equilibrium at output OQ where MR=MC and profits are maximum. OA is the corresponding price to the output level of OQ. The rectangle ABCD represents the profits earned by the monopolist in the equilibrium position in the short-run.

MONOPOLISTIC COMPETITION:

Monopolistic competition is said to exist when there are many firms and each one produces such goods and services that are close substitutes to each other. They are similar but not identical.

There are no restrictions on the entry and with the result, many firms who feel they can offer a relatively better product or service, enter the market.

PRODUCT DIFFERENTIATION:

Product differentiation is the essential feature of monopolistic competition. Products can be differentiated by means of unique facilities, advertising, brand loyalty, packaging, pricing, terms of credit, superior maintenance service, convenient location and so on.

For Example: Hotel Industry, Banking Industry, Nirmal Paintings

PRICE –OUTPUT DETERMINATION IN MONOPOLISTIC COMPETITION :

It is common that every firm whether operating under perfect or imperfect market , wants to maximize the profits. It means that the firm under monopolistic competition also will reach equilibrium when its marginal cost equals its marginal revenue (MC=MR).

As the products are differentiated, the demand curve has a downward slope, in other words, each firm has a limited control over price. These firms are price makers as far as a given group of customers is concerned.

SHORT RUN:

In the short- run, firms may experience supernormal or normal profits or even losses. When there is a fall in costs or increase in demand, the firms may enjoy supernormal profits. In other words, if the firm satisfies the following two conditions, it may make supernormal profits.

a) Where marginal cost is equal to marginal revenue(MC=MR)

b) Where average revenue is less than average cost(AR<AC)

The firm may be in losses when the costs rise or demand decreases.

OQ is the equilibrium output, OA=QB=equilibrium price and QC is the average cost. Average profit=average revenue –average cost. BC is the average profit.

Profit *quantity = total profit.

The area ABCD represents the supernormal profits earned by a firm under monopolistic competition in the short-run.
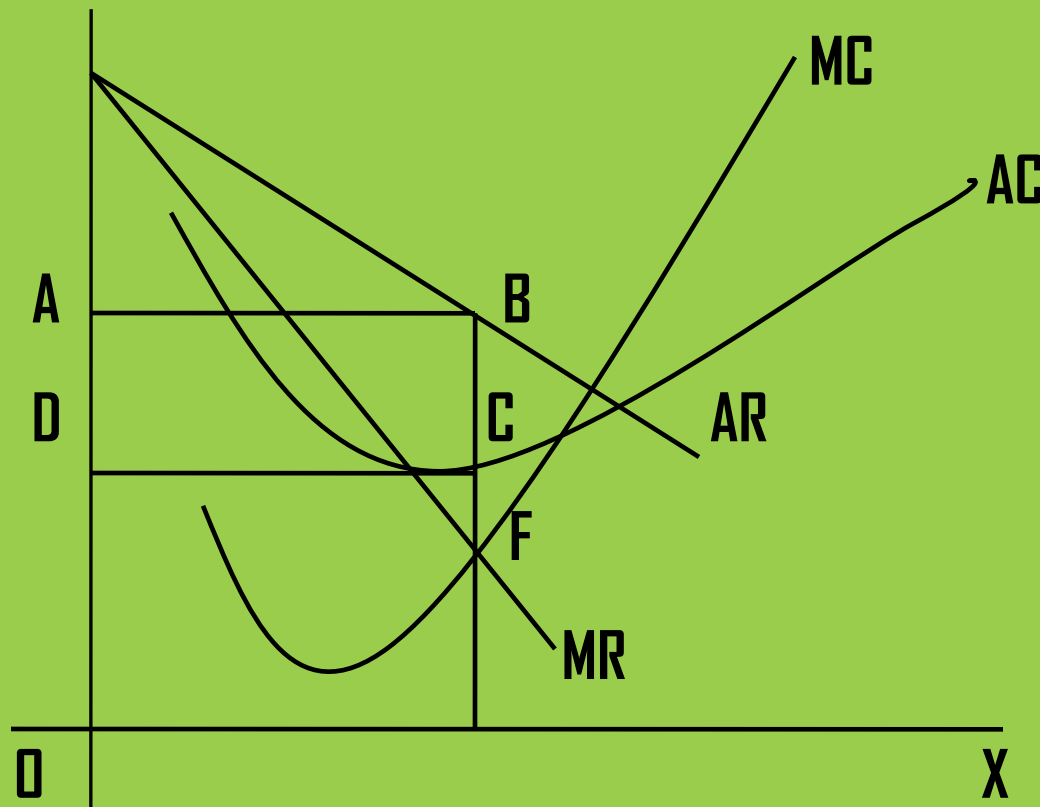
PRICING OBJECTIVES:

Pricing objectives refers to the general and specific objectives which a firm sets for itself in establishing the price of its products and or services and these are not much different from the marketing objectives of a firm or its overall business objectives. Generally, the objectives of pricing are:

a) To maximize profits

b) To increase sales

c) To increase the market share

d) To satisfy customers

e) To meet the competition

f) To generate internal resources to finance expansion and growth

g) To maximize the value of the firm for different stakeholders.

PRICING METHODS:

The following are the different methods of pricing.

1. Cost-based Pricing Methods

a. Cost-Plus Pricing

b. Marginal cost pricing

c. Social Cost-based Pricing

2. Competition-oriented Pricing

a. Sealed bid pricing

b. Going-rate pricing

c. Limit pricing

3. Demand-oriented pricing

a. Price discrimination

b. Perceived value pricing

c. Priority pricing

4. Strategy based pricing

a. Market Skimming

b. Market Penetration

c. Two-part Pricing

d. Block Pricing

e. Commodity Bundling

f. Peak Load Pricing

g. Cross Subsidisation

h. Transfer Pricing

i. Loss Leader Pricing

j. Predatory Pricing

k. Psychological Pricing

l. Flat Rate Pricing

m. Time/Usage Sensitive Pricing

n. Precedence Model

o. Transaction-Based Pricing (TBP)

TYPES OF INDUSTRIAL / BUSINESS ORGANISATIONS

INTRODUCTION

Imagine you want to do business or start your own industry. Which business are you interested in? **For Example,** You want to get into InfoTech industry. What can you do in this industry? Which one do you choose? The following are the alternatives you have on hand;

1. You can buy and sell

2. You can setup a small/medium/large industry to manufacture.

3. You can set up a workshop to repair.

4. You can develop a software.

5. You can design a hardware.

6. You can be a consultant/trouble-shooter.

If you choose any one or more of the above, you have chosen the line of activity. The next step for you is to deside whether

1. Only owner   2. co-owners along with you   3. Global player

4. Like minded people to share the benefits,   5. Involve in Government

FACTORS AFFECTING THE CHOICE OF FORM OF INDUSTRIAL /BUSINESS ORGANISATION

1. Easy to start and easy to close

2. Division of labor

3. amount of resources

4. Liability

5. Secrecy

6. Transfer of ownership

7. Ownership, Management and control

8. Continuity

9. Quick decision making

10. Personal contact with customers

11. Flexibility

12. Taxation

FORMS OF INDUSTRIAL/ BUSINESS ORGANIZATION

- The following are the forms of business organisation based on ownership:

1. **Sole trader or Proprietorship**

2. **Partnership**

3. **Joint Stock Company**

4. **Cooperative Society**

5. **Public enterprises.**

SOLE TRADER

- The Sole trader is the simplest, oldest the natural form of business organization. "Sole" means one.

- Sole trader implies that there is only one trader who is the owner of business.

- It is simple ,oldest and one man form of organization .

- He is a manager , owner and controller of business .

- He uses his own knowledge skills , capital and intelligence in carrying out their business.

ADVANTAGES OF SOLE TRADER

1) Easy to start and easy to close

2) Personal contact with customers directly

3) Prompt decision making

4) High degree of flexibility

5) Secrecy

6) Low rate of taxation

7) Direct motivation

8) Total control

9) Minimum interference from Government

10) Transferability

DISADVANTAGES OF SOLE TRADER

1) Unlimited liability

2) Limited amounts of capital

3) No division of labour

4) Uncertainty

5) Inadequate for growth and expansion

6) Lack of specialization

7) More competition

8) Low bargaining power.

2.PARTNERSHIP

Indian Partnership Act,1932 defines partnership as the relationship between two or more persons who agree to share the profits of the business carried on by all or any one of them acting for all.

Features:

1) Relationship

2) Two or more persons

3) There should be a business

4) Agreement

5) Carried on by all or any one of them acting for all

FEATURES

1)   Unlimited liability

2)   Number of partner

      a)10 partners incase banking .

      b) 20 in case of non-banking

3.Division of labor

4.Personal contact with customers

5.Flexibility

6.Joint and several liability

7.Implied authority

8.Transferability of share/interest

ADVANTAGES

1) Easy to form

2) Availability of capital

3) Division of labor

4) Flexibility

5) Personal contact with customers

6) Quick decisions and prompt actions

7) The positive impact of unlimited liability

8) Tax rate

DISADVANTAGES

- Formation of partnership is difficult

- Liability

- Lack of harmony or cohesiveness

- Limited growth

- Instability

- Lack of public confidence

- Implied authority misused

- High tax rate

KINDS OF PARTNERSHIP

1. Active partner
2. Sleeping partner
3. Nominal partner
4. Partner by Estoppel
5. Partner by holding out
6. Minor Partner

- **Partnership deed :** The written agreement among the partners is termed as partnership deed . It contains all detail about the business .

- **Dissolution**

JOINT STOCK COMPANY

- An association of many persons who contribute money to common stock and employ its for common purpose . ------ lord justice lindley.   OR

- The companies formed and registered under the companies act -----sec3(1) of companies act 1956 .

Features:

1) Artificial person

2) Separate legal existence

3) Voluntary association of persons

4) Limited liability

5) Capital is divided in to shares

6) Transferability of shares

7) Common seal

8) Perpetual succession

9) Ownership and management separate

10) Winding up

11) The name of the company ends with limited

ADVANTAGES

1) Mobilization of larger resources

2) Separate legal entity

3) Limited liability

4) Transferability of shares

5) Liquidity of investments

6) Inculcates the habits of savings and investment

7) Democracy in management\

8) Economies of large scale production

9) Continued existence

10) Institutional confidence

11) Professional Management

12) Growth and expansion

DISADVANTAGES

1) Formation of company is a longdrawn procedure

2) High degree of Government interference

3) Inordinate delays in decision making

4) Oligarchy in management

5) Lack of initiative

6) Lack of responsibility and commitment

7) Conflicting interests

8) Promotes speculation

9) Lobbying with Govt. departments

10) Tends to monopoly

11) Higher taxes

KINDS OF COMPANIES

Kinds of companies based on incorporation

1. Chartered company :Ex: British East India Company in England in 1600 to trade with India and East'

2. Statutory corporation: Ex : RBI, IDBI,FCI APSRTC

3. Registered compnies : Ex: Public and Private ltd companies

KINDS OF COMPANIES BASED ON PUBLIC INTEREST

1. Private limited company

2. Public company

3. Government company: Ex: National Thermal Power Corporation, BHEL, HMT, HPT, SAIL

KINDS OF COMPANIES BASED ON LIABILITY

1. Unlimited company

2. Limited company

3. Companies limited by guarantee

KINDS OF COMPANIES BASED ON NATIONALITY

1. Foreign Company

2. Indian Company

FORMATION OF JOINT STOCK COMPANY

a) To obtain Certificate of incorporation

b) To obtain Certificate of Commencement of Business

           1 . Memorandum of Association

           2 . Articles of Association

           3 . Names and address of proposed directors and their willingness

           4 . A statutory declaration of all the legal requirements

TO OBTAIN CERTIFICATE OF COMMENCEMENT OF BUSINESS

1) Seek permission from the SEBI

2) File prospectus with Registrar

3) Collecting minimum subscription

4) Allotting shares

5) Apply to the Registrar for the Certificate of Commencement of Business

MAIN DOCUMENTS IN COMPANY FORMATION

A.   Memorandum of Association

B.   Articles of Association

C.   Prospectus

MEMORANDUM OF ASSOCIATION

- The charter of the company which discloses scope of operations and its relations to outsiders and investors .

- Clauses

- Name clause

- situation clause

- Objects clause

- Capital clause

- Subscription clause

ARTICLES OF ASSOCIATION

- The document that contains rules and procedures for internal management and control of the affairs of the company .

- It contains details about the amount of share capital , types of shares , procedure to transfer and transmission of shares , procedure to conduct meetings , powers , duties , remuneration .

PROSPECTUS

- The notice that invite offers from public for the subscription of shares or debentures of the body corporate .

- Contents

- The name of the company , address , objectives types of shares , list of promoters , directors address , details of brokers , underwriters and bankers .

COOPERATIVE SOCIETIES

- A cooperative society is a society registered under the Cooperative Society Act,1904. It is an association of the group of persons who come together to uplift themselves through organized efforts.

- Features

1. It is a voluntary association

2. Separate legal entity

3. Compulsory registration

4. Membership

5. Finances

6. Set up is democratic

7. One member one vote

8. Service objective

9. Restricted reward to capital

10. Non transferability of shares

11. Equitable distribution of surplus

ADVANTAGES

1) Voluntary organisation

2) Equal voting rights

3) Economic justice

4) Limited liability

5) Continued existence

6) Zero speculation

7) Each for all and all for each

8) Self Govt.

9) Larger identity of interests

10) Government support

11) Exploitation eliminated

12) Taxation

DISADVANTAGES

1)   Shortage of funds

2)   Inefficient management

3)   Many legal formalities

4)   Shifting loyalties among members

5)   Misuse of funds for sectional interests

6)   Recurring loss

PUBLIC ENTERPRISES

- Genesis of Public Enterprises

❖ Higher production

❖ Greater employment

❖ Economic equality

❖ Dispersal of economic power

FORMS OF PUBLIC ENTERPRISES

a) Departmental undertaking

b) Public corporation

c) Government company

DEPARTMENTAL UNDERTAKING

- This is the earliest form of public enterprise. Under this form, the affairs of the public enterprise are carried out under the overall control of one of the departments of the government.

- Ex: Railways, Dept.of Posts, All India Radio, Doordarshan, Defense undertakings like DRDL, DLRL, Ordinance factories and such.

- Features:

1. Under the control of a government department

2. More financial freedom

3. Like any other government department

4. Budget, accounting and audit controls

5. More a government organisation, less a business organisation

Advantages :

1. Effective control

2. Responsible executives

3. Less scope for institutionalization of funds

4. Adds to Government revenue

Dis-advantages :

1. Decision delayed

2. No incentives to maximize earnings

3. Slow response to market conditions

4. Redtapism and bureaucracy

5. Incidence of taxation

PUBLIC CORPORATION

- It is defined as a "body corporate created by an Act of Parliament or Legislature and notified by the name in the Official Gazette of the Central or State Govt.

Ex: LIC, UTI, IFCI, Damodar Valley Corporation and others

- **Features:**

1. A body corporate

2. More freedom in day to day operations

3. Freedom regarding personnel

4. Perpetual succession

5. Financial autonomy

6. Commercial audit

7. Run on commercial principles

GOVERNMENT COMPANY

Section 617 of the Indian Companies Act defines a government company as "any company in which not less than 51 percent of the paid up share capital is held by the Central Government or by any State Government or Governments or partly by Central Government and partly by one State Govt.

- **Features:**

1) Like any other registered company

2) Shareholding

3) Directors are nominated

4) Administrative autonomy and financial freedom

5) Subject to ministerial control

Advantages:

1. Formation is easy

2. Separate legal entity

3. Ability to compete

4. Flexibility

5. Quick decisions and prompt actions

6. Private participation is facilitated

Disadvantages:

1. Continued political and government interference

2. Higher degree of government control

3. Evades constitutional responsibility

4. Poor sense of attachment or commitment

5. Divided loyalties

6. Flexibility only on paper

PROBLEMS OF PUBLIC ENTERPRISES

1. Political interference

2. Accountability

3. Excessive inventories

4. Sense of insecurity and risk aversion

5. Unrealistic pricing policies

FUNCTIONING OF PUBLIC ENTERPRISES: COMMON DEFECTS

1. Inadequate return on capital and huge accumulated losses

2. Problems in project execution

3. Unrealistic production schedules and excess capacity

4. Over-capitalization

5. Disproportionate overheads

6. Overstaffing

7. Lack of progressive personnel policies

8. Price policy

9. Lack of professional approach

10. More parliamentary interference and faulty control

NEW ECONOMIC ENVIRONMENT

- Recent developments that have taken in the environment of the business .environment means all those factors which are external to the business .

- They are

- New industrial policy .

- LPG policy .

1.NEW INDUSTRIAL POLICY

- Government of India due to economic crisis in the year 1991 introduced this policy

- Those crisis factors are

- Oil price hike due to gulf war

- Disastrous balance payments

- Declining exports and dwindling foreign remittances .

- Rampant inflation .

- Huge external loans from IMF and world bank .

FEATURES OF NIP 1991

- Doing away the industrial licensing agreements .

- Diminishing the role of public sector .

- Incentives and concessions for foreign investment and technology .

- Drastic amendments of MRTP act .

REFORMS OF NIP 1991

- **Trade and capital reforms –** devaluation of Indian rupee ,allowing foreign equity participation up to 51% in services sector ,delinking technology transfer ,tariff liberalization for exports, no quantitative restrictions for imports , providing variety of export promotion measures , industrial deregulation(licenses)etc

- **Public sector reforms :** restructuring public enterprises , partial dis-investment , promoting interest of workers through special fund called national renewal fund .

- Financial sector reforms : It is of two forms

- 1) banking sector : statutory regulatory body (SEBI) established ,reduced govt share holding to 33% , increased banks autonomy , allowed international accepted norms

- 2) insurance sector : introduced regulatory body(IRDA)

2.LPG POLICY

Liberalization:

Reducing the role of regulation of govt on industry by eliminating licensing procedures .

Privatization :

Inducting private ownership in state owned enterprises with a strategy to reduce role of govt in business.

Globalization:

Integrating the economy of the country with worlds economy with a view to reduce trade barriers and improve business climate .

thank you

FINANCIAL ANALYSIS THROUGH RATIOS

UNIT-4

RATIOS PART

Ratio anlysis

- It is the process of determining and interpreting numerical relationships based on financial statements.

- By this easy to understand the financial position of the firm.

- It is used to focus on financial issues such as liquidity , profitability, and solvency of a given firm.

What is ratio

- It is the simply a number expressed in terms of another.
- It refers to the numerical and quantitative relationship b/w two variables which are comparable.
- It is a statistical measure that provides an insight into the relationship b/w two variables.
- Ratios can be expressed in terms of percentages, proportions and quotients also.

How to select a ratio

- The utility of ratio is based on its selection.
- The ratio should selected match with the purpose .
- Use the standard ratios to avoid misinterpretation.

Types of ratios

- On The Basis Of Nature the ratios can be classified into following types

- Liquidity ratios
- Activity ratio
- Capital structure ratio
- Profitability ratio

(A) Liquidity ratios

- Liquidity ratio express the ability of the firm meet its shot-term commitments as and when they become due .

    creditors are interested to know whether the firm will be in apposition to meet its commitment on time or not.

it as divided into

- Current ratio
- Quick ratio

(1)Current ratio

- Current ratio is the ratio between current assets and current liabilities .

- The company is side comfortable in its liquidity position if the current ratio is 2:1.

$$\text{Current ratio} = \frac{\text{Current assets}}{\text{Current liabilities}}$$

(2)Quick ratio

- Quick ratio is also called acid test ratio.
- it measure the firms ability to convert its current assets quickly into cash in order to meet its current liabilities
- the ratio between quick assets and quick liabilities .

Quick ratio = quick assets
current liabilities

Quick assets=   current assets –(stock prepaid + expenses)

(B) Activity ratios

- Activity ratios express how to active firm is in terms of selling its stock, collecting its receivables and paying its creditors these are three types

- **Inventory turnover ratio**

- **Debtors turnover ratio**

- **Creditors turnover ratio**

(1)Inventory turnover ratio

- It is also called stock turn over ratio.
- it indicates the number of times the average stock is being sold during a given accounting period.

Inventory turnover ratio= cost of goods sold

average inventory

cost of goods sold =sales- gross profit

- Average inventory is the average of opening stock at the beginning of the year closing stock at the end of the year

Average stock = opening stock +closing stock
2

From inventory turnover ratio ,we can also determine the inventory holding period

inventory holding period =
365 days
inventory turnover ratio

(2) Debtors turnover ratio

- Debtors turnover ratio reveals the number of times the average debtors are collected during a given accounting period.

$$\text{Debtors turnover ratio} = \frac{\text{current sales}}{\text{average debtors}}$$

Debt collection period:

debt collection period=365 days/Debtors turnover ratio

(3)Creditors turnover ratio

- Creditors ratio reveals the number of times the average creditors are paid during a accounting period

Creditors turnover ratio= $\dfrac{\text{credit purchases}}{\text{average creditors}}$

- We can also determine the creditors payment period by using the formula

Creditors payment period =365 / credit turnover ratio

(C) Capital structure ratios(leverage ratios)

- The financial ratio which focuses on the long term solvency of the firm.
- The following are the most commonly used capital structure ratios.
(1) Debt –equity ratio
(2) Interest coverage ratio
(3) Ratios of proprietors funds to total assets
   (a) ratio of fixed assets to proprietors funds
   (b) ratio of current assets to proprietors funds

(1)Debt –equity ratio

- Debt equity ratio is the ratio b/w outsiders funds(debt) and insider funds(equity)
- it is used to measure the firms obligations to creditors in relation to the owners fund.

$$\text{Debt –equity ratio} = \frac{\text{outsiders funds}}{\text{insider funds}}$$

Interest coverage ratio

- It is used to calculate to judge the firms capacity to pay the interest on debt it borrows.

Interest coverage ratio=
$$\frac{\text{net profit before interest and taxes}}{\text{fixed interest charges}}$$

Ratios of proprietors funds to total assets

- This establishes relationship b/w proprietors funds and total assets

- As guideline a ratio of around 0.5:1 is considered as the minimum desirable

proprietors funds to total assets= proprietors funds/total assets *100

(a) ratio of fixed assets to proprietors funds

▫ This ratio explains whether the fixed assets have been brought from the proprietor funds or not

ratio of fixed assets to proprietors funds= fixed assets /proprietary funds *100s

(b) ratio of current assets to proprietors funds

- A higher ratio of current assets to proprietary funds is considered as financial strenght to the business.

ratio of current assets to proprietors funds= fixed assets /proprietary funds *100s

Profitability ratio

- Profitability ratios throw light on how well the firm is organising its activities in profitable manner

- The owners expect reasonable rate of return on their investment

- the firm should generate profit not only meet the expectations of the owners but also finance the expansion activities.

Ratios commonly used in profitability

- Gross profit ratio
- Net profit ratio
- Operating ratio
- Return on investment ratio
  Return on capital employed
  return on equity
- Earning per share
- Dividend yield
- Price/earning ratio
- Earning ratio

Gross profit ratio

- Gross profit is the ratio b/w gross profit to sales during a given period.
- It is expressed in terms of percentage .
- Gross profit is different b/w the net sales and the cost of goods sold

Gross profit ratio= gross profit/sales*100

Net profit ratio

- Net profit is the ratio b/w net profit after taxes and net sales.
- It indicates what position of sales is left to the owners after operating expenses

Net profit ratio= net profit after taxes /net sales *100

Operating ratio

- It is ratio b/w cost of good sold + operating expenses and the net sales
- It expressed in the as a percentage to net sales

Operating ratio= operating expenses /net sales*100

- It interpreting the operating ratio

Profitability(%)=100-operatting ratio(%)

Return on investment(ROI)

- PROFITABILITY of the firm is measured in terms of Return on investment(ROI)

ROI=net profit after taxes / total investment

Return on capital employed

- This is a widely used ratio . This is the only satisfactory measure which reveals overall performance.

ROCE= adjusted net profit /capital employed

- **return on equity**

ROE= net profits-dividend payable to p share holder/equity share capital

Earning per share(EPS)

- It is relationship b/w net profits and the number of shares outstanding at the end of given period.

EPS= net profit after taxes / number of shares out sanding

Dividend yield

- Yield refers to amount of total return the investor will receive for given period of time for the amount of his investment.

Dividend yield= normal or face value of share /cost or market price of share*% dividend per annum

Price /earning ratio

- Price earning ratio share price earning per share

Price earning ratio = market price per share/earnings per share

Earnings power as a measurement of overall profitability

Earning power = net profit margin* investment turn over

THANK YOU

UNIT – 5

CAPITAL
AND
CAPITAL BUDGETING

Introduction :

Capital forms the base for the business . capital ,in general ,does not mean only money . It may refer to money's worth also .capital has many forms . Creativity ,innovation or new ideas can be considered as one form of capital.

CAPITAL

Capital is defined as wealth ,which is created over a period of time through abstinence to spend. There are different forms of capital : property , cash or titles to wealth . It is the aggregate of funds used in the short-run and long-run . An economist views capital as the value of total assets available with the business . An accountant sees the capital as the difference between the assets and liabilities.

Need for capital

1. To promote a business
2. To conduct business operations smoothly
3. To expand and diversify
4. To meet contingencies
5. To pay taxes
6. To pay dividends and interests
7. To replace the assets
8. To support welfare programmes
9. To wind up

Types of capital

1. Fixed capital

2. Working capital

Fixed capital:

      fixed capital is that portion of capital which is invested in acquiring long term asset's like land and building , plant and machinery , furniture and fixture's and so on . Fixed capital forms the skeleton of the business. It provides the basic assets as per the business.

Features of fixed assets

- **Permanent in nature :**

    Fixed capital is more or less permanent in nature . It is generally not with drawn as long as the business carries on its business.

- **Profit generation :**

    Fixed assets are the sources of profits but they can never generate profits by themselves. They use stock ,cash and debtors to generate profits.

- **Low liquidity :**

    The fixed assets cannot be converted into cash quickly . Liquidity refers to conversion of assets into cash.

- **Amount of fixed capital :**

    Based on size and nature of business the capital may require in large .

- **Utilized for promotion and expansion :**

    It is needed in the time of promotion , modernisation and to purchase the fixed assets.

Types of fixed assets

- **Tangible fixed assets :** which can be seen and touched ex: lands and buildings , plant and machinery , furniture and fixtures etc

- **intangible fixed assets :**assets which do not have physical form ex: good will , brand names trade marks

- **financial fixed assets :** investments in shares , foreign currency deposits etc

2. Working capital

- The amount of capital which is required to meet the day to day transactions of business is termed as working capital.
- It is flesh and blood of the business .
- **Features :**
- Short life
- Smooth flow of operations
- Liquidity
- Amount depand on short term requirements
- Utilized to meet current expenses
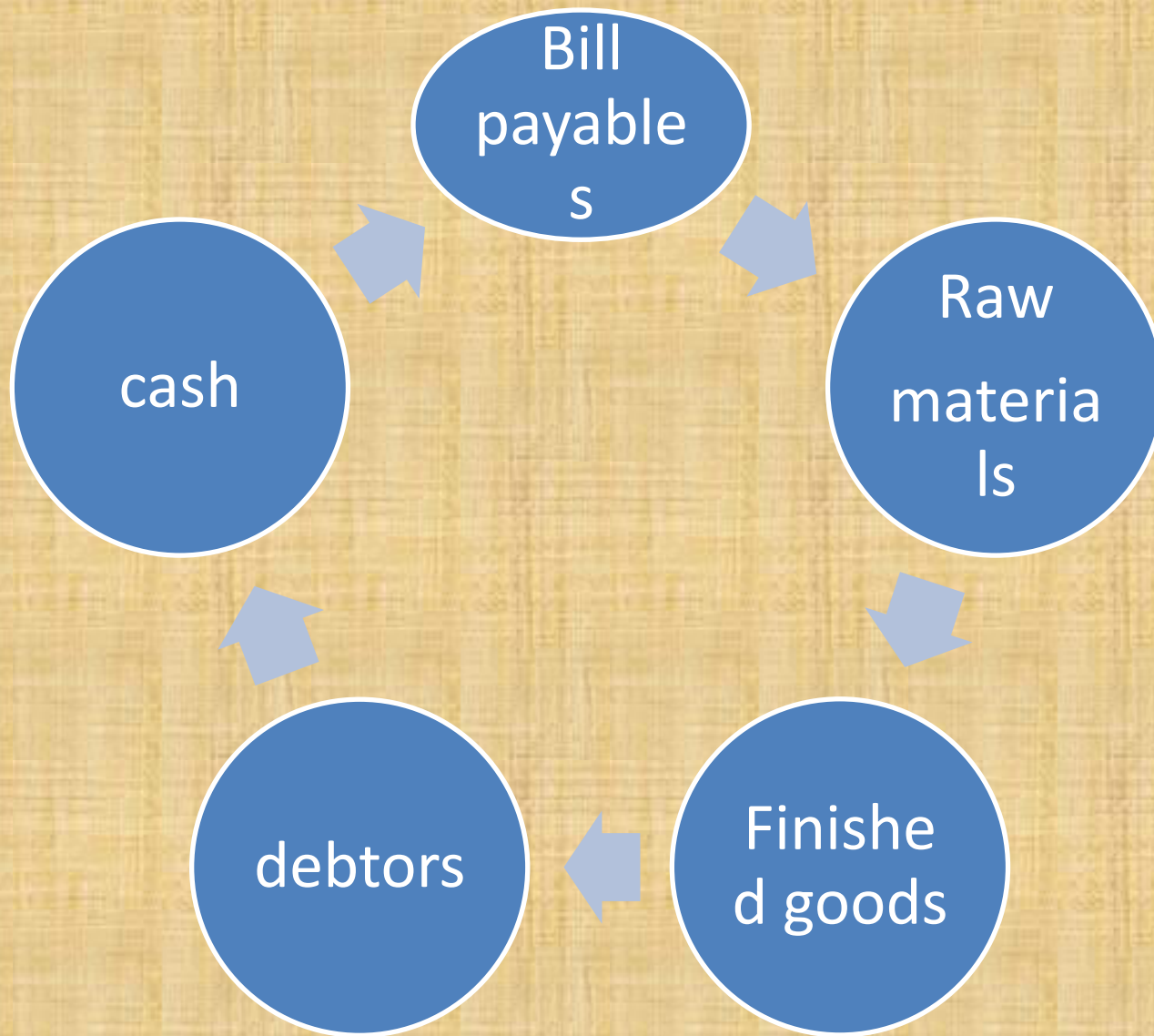
Components of working capital

- **1.Current assets :** assets from which cash can be realized over a short period of time
- Ex : cash in hand , cash at bank , debtors , bills receivables , prepaid expenses , stocks ,Cash in hand and bank balance , Accrued income .
- **2.Current liabilities :** the obligation that the firm must pay to outsiders over a short period of time i.e below 1 year
- Ex : creditors , bills payables , short term loans and advances , accrued expenses Dividends payable , Provision for taxation
- etc.
- Formula: net working capital = current assets – current liablities

Factors determining working capital

- Position in business cycle
- Nature of business
- Nature of demand
- Credit policy
- Working capital cycle
- Manufacturing cycle
- Price level changes ,
- Effect of external environment to business
- Degree of competition

Working capital cycle

- The flow of money in the business is termed as working capital cycle

Types of working capital
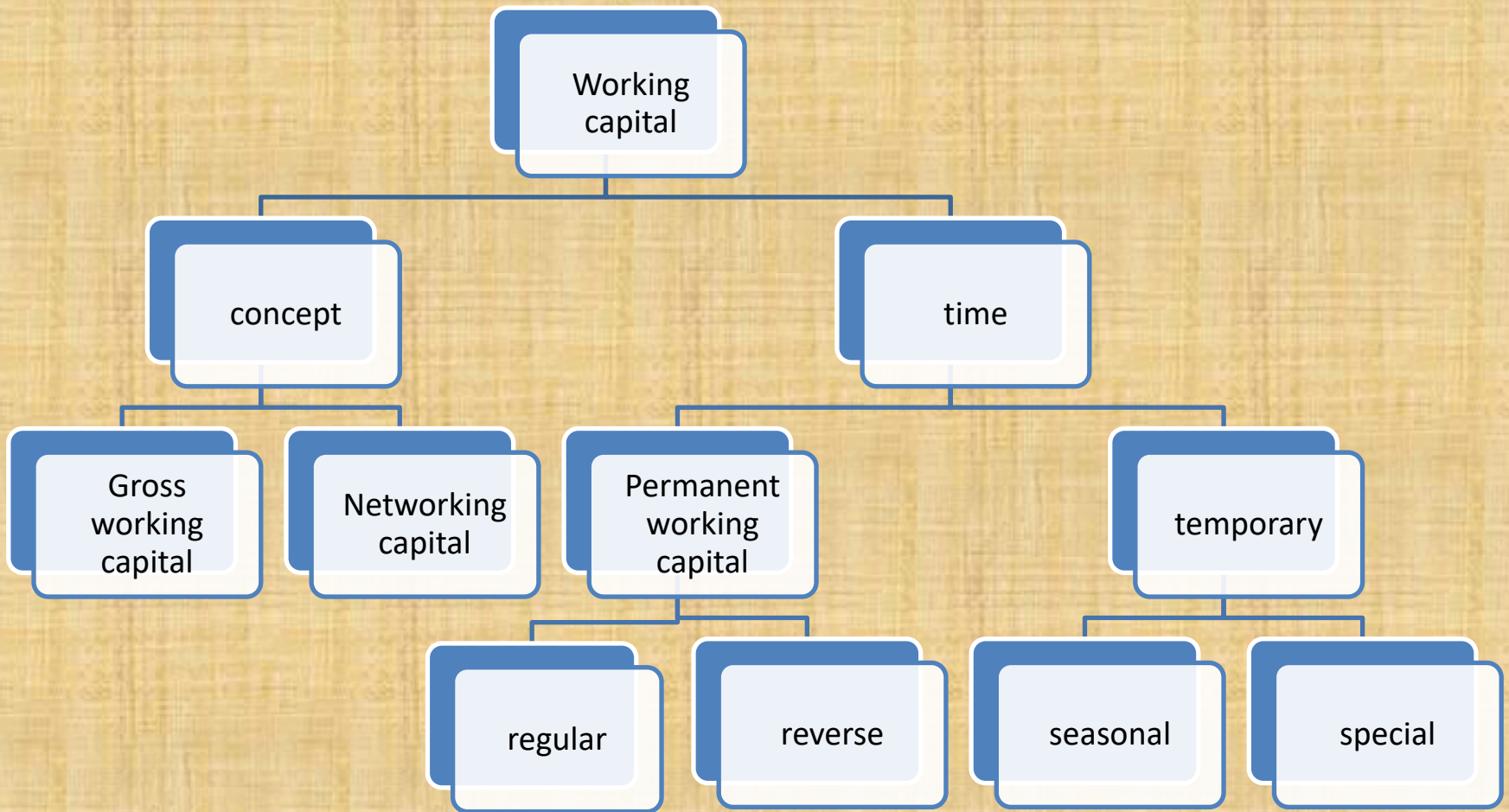
sources of finance

types

- Three sources
- 1) short term finance
- 2) medium term finance
- 3) long term finance

Short term finance

- Source of finance with maturity period of less than 1 year or 1year.
- It is required to meet short term financial needs of a company i.e working capital needs
- **Instruments:**
- **Trade credit :** short term credit facility extended by suppliers to customers during their normal course of business .
- **Commercial papers :** unsecured promissory note issued by corporate to investors at discount rate on face value .
- **Bill of exchange :**
- **Certificate of deposits :** negotiable instruments that are issued in materialized form governed by RBI .
- **Bank overdrafts :** special arrangement between banker and customer to draw more than what he has in his account subject to maximum limit .
- **Call/ notice money :** money lend or borrowed for very short period i.e 1-14 days .
- **Treasure bills :** short borrowing instruments Of union govt with maturity period of 14/91/182/364 days from the date of issue .
- **Debt factoring :** arrangement with factor where trader agrees to sell its receivables at discounts to specialized dealers b.

Medium term sources of finance

- Source of finance with maturity period of more than 1 year and less than 5 years .
- It is required by the company to meet repairs and maintenance of fixed assets by the firm .
- Instruments.
- **1) Hire purchase :**The facility to buy the fixed asset by paying down payment a part of price and balance is paid in installments with fixed rate of interest in agreed number of installments
- **2)leasing :**agreement between lessor and lesse for getting agreement on getting assets in rent over a specific period of time .
- **3) bank loans :**banks render loans to customers at fixed rate of interest scheduled in beginning and remaining is debited directly from the account of customer in installments .
- 4) **venture capital financing :**for the projects which are high riskly banks offer merchandise banking services .

Long term finance

- Source of finance with maturity period of more than 5year s and less than 20 years

- It is required for company to meet permanent capital requirements of firm .

- **Instruments**

- 1**) Equity shares** :shares which are the part of ownership funds of company .

- 2) **preference shares :** The share which provide rights to investors in terms of fixed rate of dividend and return on capital .

- **3) debentures :** certificate issued under common seal of a company acknowledging receipt of the loan .

- **4)long term loans :** source of finance availed by bankers and financial institutions with maturity period of 5-20 years

- **5) retained earnings** : the returns payable to equity share holders are converted to reinvestments of firm through mutual agreements .

Capital budgeting

definition

- The process of evaluating relative worth of investment proposals based on profitability is termed as capital budgeting .

- It play an important role in undertaking investment decisions .

process

1.Generating investment proposals (Project generation)

2.Estimating and evaluating cash flows(project evaluation)

3.selection of projects(PROJECT SELECTION)

4.Project implementation.

5.Project control (monitoring and re-evaluating)

significance

- Includes substantial cash flows.
- Long term implications .
- Strategic in nature .
- Irreversible .

Types of capital budgeting decisions

- Expansion
- Diversification
- Replacement decisions
- Contingent decisions
- Mutually exclusive decisions.

Capital budgeting methods

- Non discounting /traditional methods
  - PAY BACK PERIOD
  - ACCOUNTING RATE OF RETURN
- Discounting/modren methods
  - NET PRESENT VALUE
  - INTERNAL RATE OF RETYURN
  - PROFITYABILITY INDEX

1.PAY BACK PERIOD

- The length of time it will taken to recover the cost of the project .
- **FORMULA** :
- pay back period = cost of the project

    _____

    annual cash in flows
- **METHODS**: two types .
- 1. **even cash in flows :** the above formula is used
- 2 . **Un even cash in flows** : cumulative cash in flows method is used .

- **Advantages**
- Easy to understand and calculate .
- Liquidity is easily identified **.**
- **Disadvantages**
- All cash flows are not considered .
- Ignores time value of money .

2.ACOUNTING RATE OF RETURN

- The ratio of annual profits after taxes to average investment is termed as accounting rate of return.

- ARR = $\dfrac{\text{annual profits after taxes}}{\text{average investment}} \times 100$

methods

- Two methods
- 1.accounting rate of return
- ARR =   annual profits after taxes

$$\frac{\text{annual profits after taxes}}{\text{average investment}} \times 100$$

- 2.average rate of return
- ARR =   Average annual profits after taxes

$$\frac{\text{Average annual profits after taxes}}{\text{average investment}} \times 100$$

1.Average annual profits after taxes

• = Total annual profits after taxes

_____

projects life

2. Average investment = orginal investment/2

or

original investment-scrap/2

or

• original investment-scrap/2+working capital +scrap

- **Advantages**

- Easy to calculate

- Consider entire cash flows.

- **Disadvantages**

- Ignores time value of money

- Ignores project period .

Discounted cash flow methods

- The method that consider time value of money to assess the profitability of the project is called as Discounted cash flow methods .

- Time value of money means Factors that convert future rupees into current rupees .

- Formula pv factor of re .1 = $1/1+r^n$

- Formula pv factor of re .1 received annually for n years
  =   1

    _____
       $1/1+r^n$

methods

- Net present value (NPV)
- Internal rate of return (IRR)
- Profitability index (PI)

1.NET PRESENT VALUE(NPV)

- The excess of present value of cash inflows over and above cash outflows is termed as NPV .

- It is a modern method of evaluating investment proposals .

- Formula

- NPV $= PV_{CFAT} - PV_C$

- Where PV_{CFAT} =present value of cash in flows

- PV_C= present value of cash outflows .

Steps in calculating npv

- Step -1 : identify pv of re-1 for given discount rate .

- Step -2 : multiply the cash flows with corresponding pv factor

- DCF = PV factor × CFAT(cash inflows after taxes)

- Step : 3: find the sum of the products

- Step -4 : interpret the results

- Npv>1 accept the project , npv <1 reject the project , npv=1 may accept or reject the project .

- **ADVANTAGES**
- Recognizes time value of money .
- All cash flows are considered by this method .
- **DISADVANTAGES**
- Difficult to compute results .
- May not provide good results .

2. INRERNAL RATE OF RETURN

- **Definition :** the discount rate that equates present value of cash inflows of the project with cash outflows of the project .

- **Methods** – two methods

- 1.intrapolation method

- 2. Trail and error method .

- I. **INTRAPOLATION METHOD**
- Used in case of PROJECT with equal cash in flows .
- Two steps
- 1.determine pv factor
- pv factor =   cost of the project

         _____
         Average annual cash in flows

2.Determine IRR

$$IRR = X + \frac{P_X - I}{P_X - P_Y} (Y - X)$$

Where x= lower discount rate.

Y= higher discount rate .

P_X= present value of cash inflows at lower discount rate 'x'

P_Y= present value of cash inflows at higher discount rate 'y'

I = present value of cash OUTflows

-

TRAIL AND ERROR METHOD

- Used in case of PROJECT with un equal cash in flows .
- Two steps
- 1.determine pv factor
- pv factor =   cost of the project

        _____

        Average annual cash in flows

2.Determine IRR by applying trail and error method.

In first trail rate if results are not positive we apply second trail rate until the values of cash inflows are equal or negative or 0

3.Profitability index method

- The ratio of present value of cash inflows to present value of cash outflows of the project is called profitability index .

- Formula

    sum of present value of cash inflows

PI = _____

    sum of present value of cash out flows

Interpretation

PI>1 accept the project , PI <1 reject the project , PI=1 may accept or reject the project .