30/08/2023

UNIT - I

INTRODUCTION TO MANAGERIAL ECONOMICS, DEMAND AND DEMAND FORECASTING.

Managerial Economics

Managerial Economics is defined as application of economic principles, tools and techniques in the business, decision making process.

» Management is the art of organizing things in a manner such that the desired goal is achieved.

» It is the process of achieving objectives, effectively & efficiently. Process includes various tasks like managing resources, people.

» Economics : It is the optimal way of utilizing the resources which results in the maximum benefits.

Steps in Decision making process

- define the problem
- analyze the problem
- identify the appropriate solutions
- analyze each solution of course of action
- select the best course of action.
- implement the course of action.

Managerial economics help to perform the above steps.

Nature of managerial economics

It provides the optimal solution for the business problem.

1) Micro Economics in nature

» deals with individual companies or industry but not with aggregate problems

2) It is a normative economics

» works within the certain norms or set of policies ~~set~~ and rules specified

3) It is a prescriptive, rather than descriptive.

» ~~provide~~ prescribe what actions need to be done, how to utilize the resources. But doesn't ~~descriptive~~ describe about situations

4) It uses theory of firm

» Theory of firm is the branch of economics that deals with the firm that define the ways to earn maximum profits. It tells why & how the firm exists

5) It uses concepts of macro economics

» Macro economics deals with inflation, unemployment and other problems of country.

» These need to be considered during the decision making proce

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Management Decision problems

↓

Economics → managerial Economics ← Decisional sciences

↓

Optimal solution

~~Features~~

6) It is a pragmatic ie, deals with practical problems

Scope of managerial economics

1) Theory of demand

» understand and estimating the demand.

manufactured quantity, sold quantity are not demands.

» Demand is a quantity that the customer is willing to buy.

ways to increase demand :

» provide awareness to customers

» provide statistical data

» project the future using past details of trend.

» customer income, price etc. are the factors that influence demand.

2) Theory of production

» we learn cost minimization and product maximization techniques

» understand best combination of products to manufacture so that, maximum profits are gained.

3) Theory of exchange (or) Price Theory

» understand about markets, characteristics, players.

4) Theory of capital (or) and Investment

» understand the capital required

5) Theory of profit

» understand the amount of profits and how it should be re-invested.

6) Environmental Issues

social environment
economic
political
technological
legal

Importance of managerial Economics

» It integrates economic concepts with business administrative practice for smooth operations.

- helps to solve the problems regarding marketing, customer's behaviour

» Identifying the economic variables like demand, production quantity, income of the customer etc. and establishing the relationship among the variables.

» Prediction or forecasting the quantities of economic variables

» To understand the influence of various external factors

on business decisions. (factors include social, economic, govt)

» To set the business policies and strategies to achieve the objectives of business based on findings of managerial economics. ↳ (expanding business, diversifying, profit maximization). Helps to formulate the business process.

Demand Analysis

on business decisions. (factors include social, economic, govt)

» To set the business policies and strategies to achieve the objectives of business based on findings of managerial economics. ↳ (expanding business, diversifying, profit maximization). Helps to formulate the business process.

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Demand Analysis

» Demand is the quantity of product ~~whic~~ that the customer is willing to buy at a particular price and given point of time.

Elements of demand

1) Desire to purchase a product
2) willingness to pay
3) Ability to pay

When these 3 elements are satisfied, then the demand is said to have from the customer.

Identifying the demand is important to answer various questions.

Demand Function

» It is a functional relationship b/w the demand for a product and its determinants / factors.

$$D_x = f(\underbrace{P_x, P_y, P_z, I, A, E, T}_{\text{common determinants}}, \ldots U)$$

P_x → price; P_y → substitute (or) alternate; U → unknown factors

P_x : price of product If P_x ↑ses then D_x ↓ses $P_x \propto \frac{1}{D_x}$

P_y : price of product substitute / product alternate $P_y \propto D_x$

P_y ↑ then D_x ↑ses

Z : complementary item, that influences demand for x. This item must be used along with the actual product.

P_Z ↑ses then D_x ↓ses $P_Z \propto \frac{1}{D_x}$

Ex: Electricity ↑, demand on ACs ↓

I : Income of customer If I ↑ses then, D_x ↑ses $I \propto D_x$

A : Advertisements made by seller.

They ~~cho~~ manipulate the demand by agitating customers.

life cycle of product

Ex: mobiles.

landlines → Telephones → cellphones

(less demand) ------> (more demand)

more ads are required.

~~When sales get increa~~

When product reaches its ~~death~~ ~~mature~~ death/matured state then, ads make no impact. (Ex: BSNL)

T : Taste and preference of customers.

E : Expectations of customers.

Determinants of Demand

1) P_x : price of own product

2) P_y : price of substitute product

3) P_z : price of complimentary item.

4) I : Income/ budget

5) A : Advertisement / promotions

6) E : Expectations of customers

7) T : Taste / preference of customers

8) U : other unknown factors.

Types of demands.

① a) Individual demand : demand of a particular customer

b) Total demand : demands of aggregate of customer.

Climate conditions do not affect individual demand.

Income

~~Durable~~

② a) Demand for durable item

b) Demand for perishable item : Income has less influence.

③ a) Short period demand Ex: demand for function halls.

b) long period demand

④ a) Industry specific demand.

b) Firm specific demand

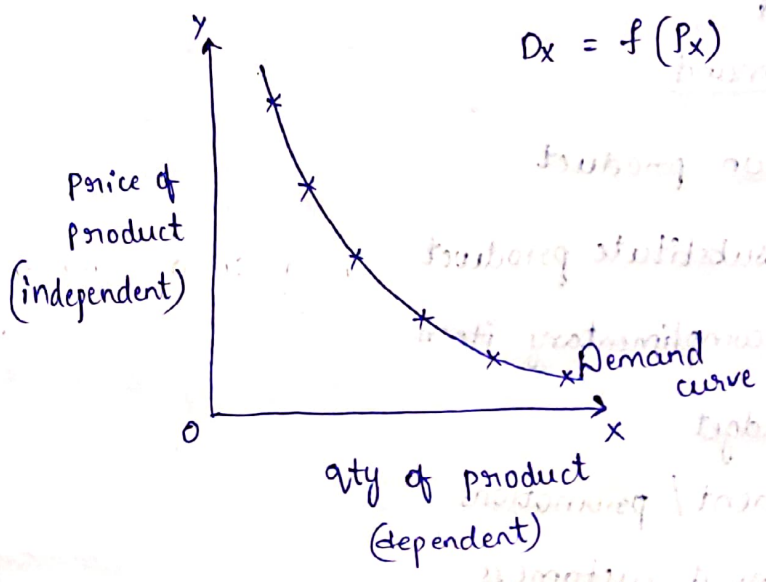
Law of Demand (Inverse relation b/w price & demand:)

» It states that when other factors remain same, higher the price, lower the quantity demanded ; smaller the price, higher the quantity demanded.

Ex: when $P_y, P_z, I, A, E, T, \ldots, U$ remain constant then,

if P_x ↑ses then D_x ↓ses and viceversa.

$D_x = f(P_x)$



demand is dependent var

Price is independent var

∵ price influences demand

Assumptions of Law of demand

» It is assumed that remaining factors remain constant

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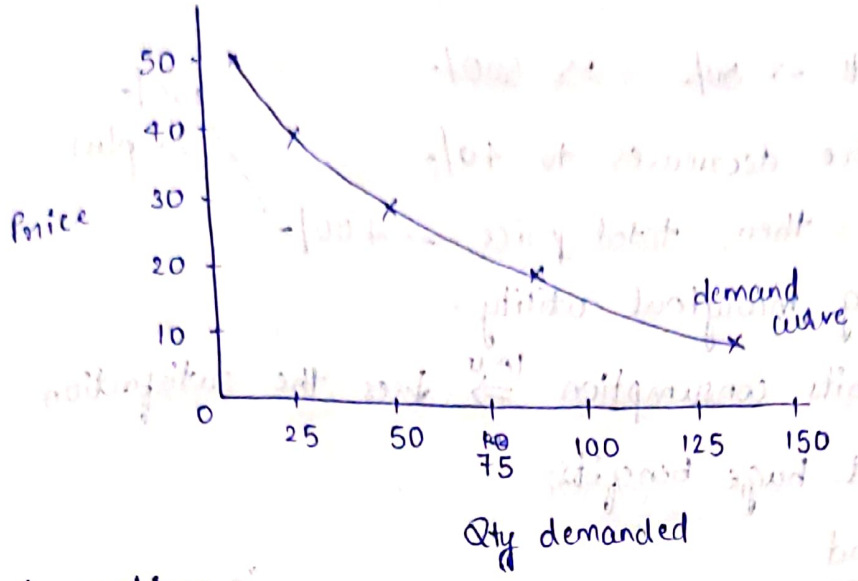
Demand schedule

P (₹)	Qty (units)
50/-	10
40/-	25
30/-	50
20/-	85
10/-	130

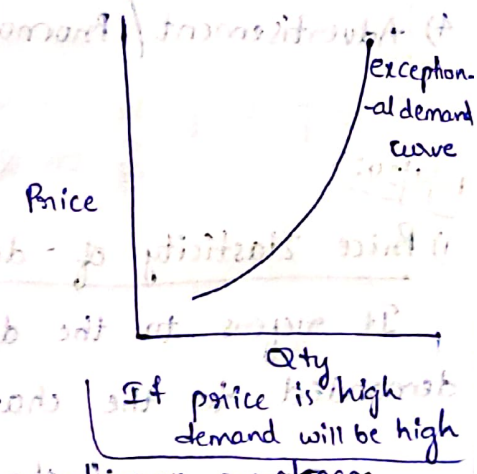


Assumptions

1) There is no change in prices of related products.
   ie, substitute item prices and complementary item prices.
2) There is no change in customer income level.
3) Advertisement level or budget is not going to change.
4) No change in customer's taste and preferences
5) No further expectations of customer

Exceptions

1) Inferior items or giffen goods — low quality items price ↓ demand is also low ↓
2) luxury items or veblen goods
   If Prices ↑ then, demand ↑ses



3) Necessary items or emergencies
4) Conspicuous necessities.
   ↳ assumed
   They are the assumed necessities.
5) ~~Wand~~ Bandwagon effect.
   Irrespective of need/necessity, customer purchases because of the influence that is being created.
   This doesn't follow law of demand

Reasons

Ex: for 10 units ⇒ 50/- ⇒ 500/-

let the price decreases to 40/-

then, total price ⇒ 400/-

100/- surplus.

⇒ Law of diminishing marginal utility.

additional units consumption leads ⇒ ↓ses the satisfaction unless they get huge benefits.

Elasticity of demand

It refers to the measure of responsiveness in quantity demanded for a given product to the changes in its determinants.

law of demand donot give to what extent the demand has decreased when prices are increased.

Types of Elasticity of demand

1) Price Elasticity of demand
2) Income Elasticity of demand
3) Cross Elasticity of demand — relation b/w P_y & Q_x
4) Advertisement / Promotional Elasticity → how ads budget influence demand

→ Impact of P_y on Q_x

P_z on Q_x

Elasticity Coefficient

If it is 1.5 then, for every 1% increase of price, there will be 1.5% decrease of demand.

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1) Price Elasticity of demand.

It refers to the degree of responsiveness in quantity demanded to the change in the price of the product.

$$EP \text{ (Elasticity of Price)} = \frac{\% \text{ change in qty demanded}}{\% \text{ change in price}}$$

$$= \frac{\Delta Q}{Q} \div \frac{\Delta P}{P} = \frac{\Delta Q}{\Delta P} \times \frac{P}{Q}$$

Ex:- P = 10/- Q = 100 units

P_1 = 11/- Q_1 = 85 units

$$EP = \frac{100-85}{11-10} \times \frac{10}{100} = \frac{-15}{10} = -1.5$$

It means, for 1% change (increase) in price, there is change (decrease) of 1.5% of qty and vice versa.

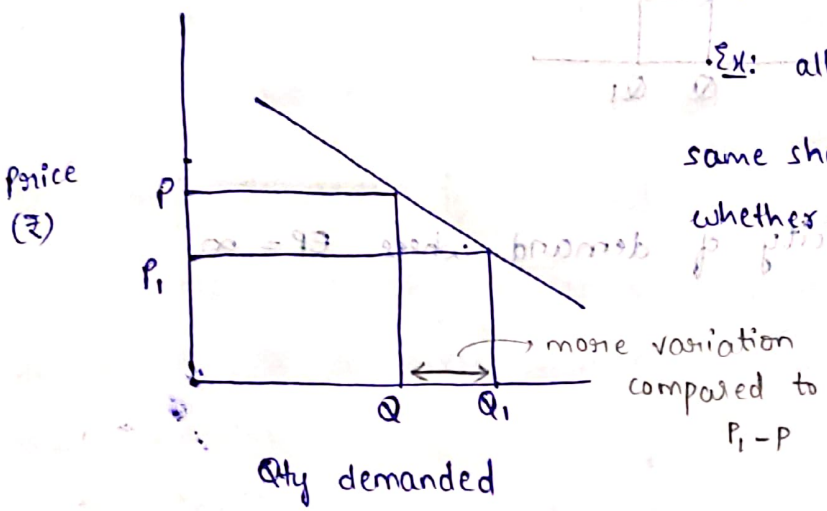
Types of Price Elasticity demand :-

(1) Relatively elasticity of demand where $EP > 1$

$$\frac{\Delta Q}{Q} > \frac{\Delta P}{P}$$

(Proportional change in qty is more than proportional change in price)

Ex: all comfort items.



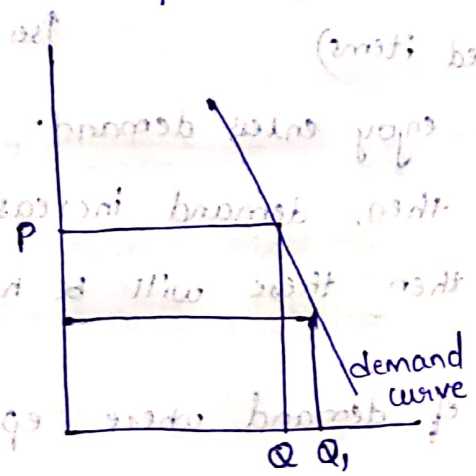
same shape of demand curve, whether it is ↑sed or ↓sed.

Ex: small discount of Amazon products, demand ↑ses more.

(or) Fabrics or Textile prices decreases, demand ↑ses.

(2) Relatively inelasticity of demand where $EP < 1$

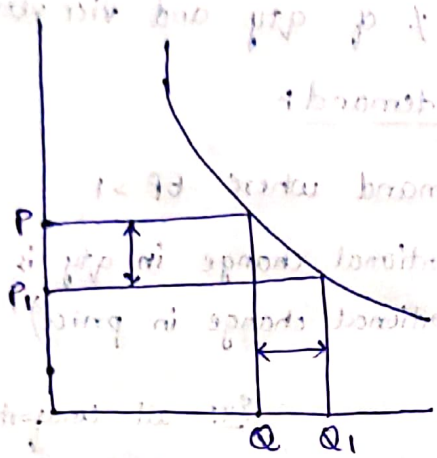
$$\frac{\Delta Q}{Q} < \frac{\Delta P}{P}$$



Even though prices ↓se hugely on groceries (essential items) there will be less variation in qty consumed:

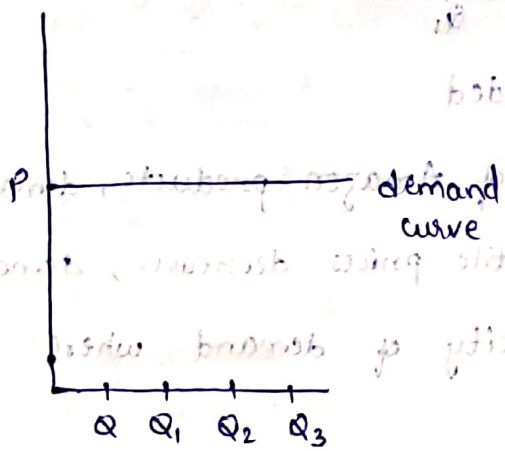
(3) Unitary Price Elasticity where, $EP = 1$

$$\frac{\Delta Q}{Q} = \frac{\Delta P}{P}$$



(4) Perfectly elasticity of demand where $EP = \infty$

$$\frac{\Delta Q}{Q} = \infty$$



endless demand whether price ↑ses or ↓ses.

Ex: Petrol (govt. regulated items)

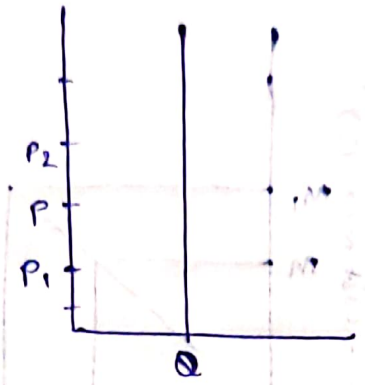
At given price, people enjoy enless demand.

If price increases then, demand increases

If price decreases then there will be no demand

(5) Perfectly inelasticity of demand where $ep = 0$

$$\frac{\Delta Q}{Q} = 0$$



same demand for any price.

Neutral items are not influenced by any factor

Ex: salt (All essential items)

~~whether~~ Irrespective of the price (10/-, 20/-, 50/- per kg); we consume same quantity.

2) Income Elasticity of demand.

It refers to the degree of responsiveness in qty demanded to a given change in monthly income of the customer.

em (elasticity of monthly income)

$$em = \frac{\% \text{ change in qty demanded}}{\% \text{ change in monthly income of customer}}$$

$$\Rightarrow em = \frac{\Delta Q}{Q} \div \frac{\Delta m}{m}$$

$$\Rightarrow em = \frac{\Delta Q}{\Delta m} \times \frac{m}{Q}$$

Types of income elasticity :-

(1) Positive income elasticity

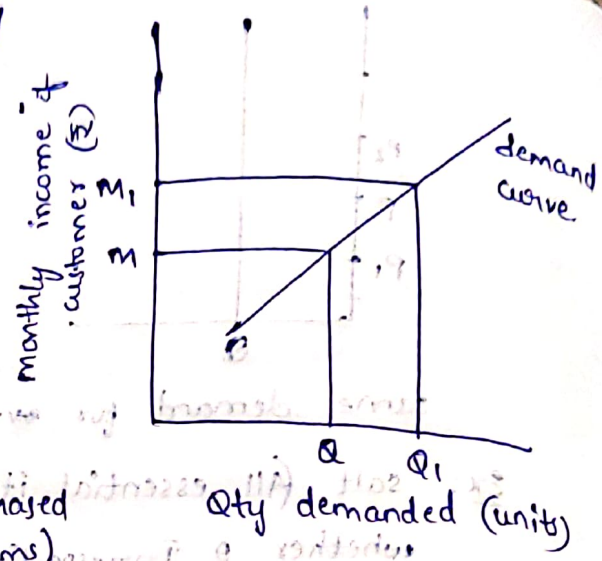
(2) Negative income elasticity

(3) Zero income elasticity.

(i) Positive income elasticity

(i) $e_m > 1$

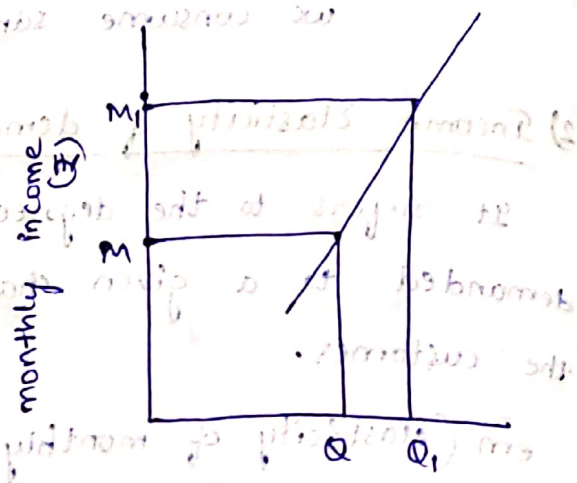
$$\frac{\Delta Q}{Q} > \frac{\Delta m}{m}$$



Ex:- With small rise in salary, more households are purchased (all comfort items)

(ii) $e_m < 1$

$$\frac{\Delta Q}{Q} < \frac{\Delta m}{m}$$

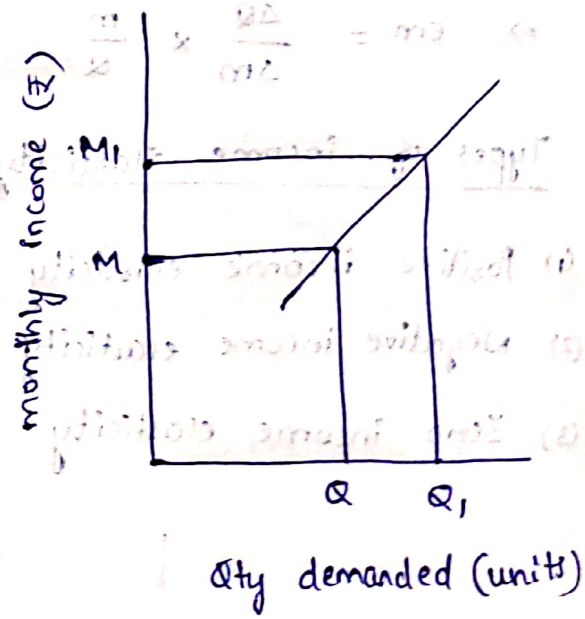


Ex:- If a person gets 50% more income, he will not buy 50% more items.

(iii) unitary income elasticity

$e_m = 1$

$$\frac{\Delta Q}{Q} = \frac{\Delta m}{m}$$

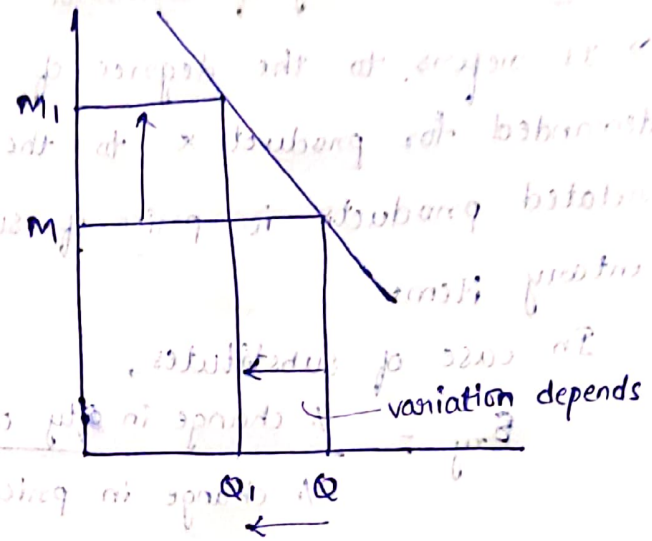


(2) Negative income elasticity

$e_m < 1$

$\frac{\Delta Q}{Q} < 1$

Ex: low quality items.



(3) Zero income elasticity

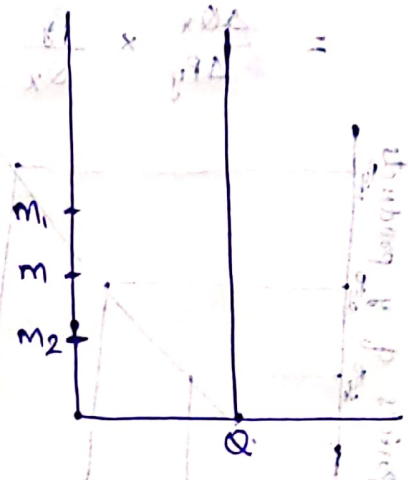
$e_m = 0$

$\frac{\Delta Q}{Q} = 0$

Ex: (Essential items
&
Neutral items)

demand - constant

monthly income may ↑se or ↓se



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3) Cross Elasticity of Demand

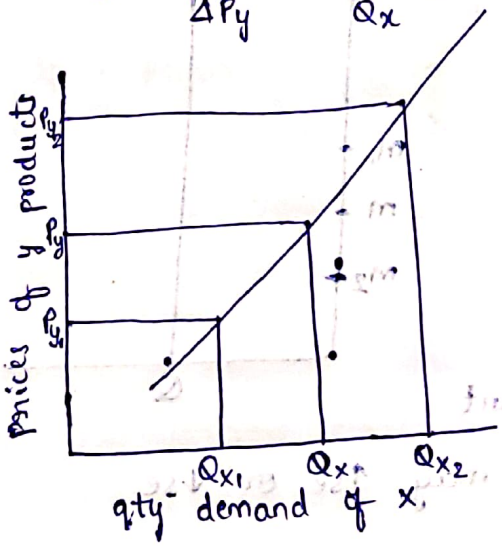
» It refers to the degree of responsiveness in quantity demanded for product x to the given change in prices of related products ie, price of substitute items or price of complementary items.

In case of substitutes,

$$E_{xy} = \frac{\text{\% change in qty of product x}}{\text{\% change in price of substitute item}}$$

$$= \frac{\Delta Q_x}{Q_x} \div \frac{\Delta P_y}{P_y}$$

$$= \frac{\Delta Q_x}{\Delta P_y} \times \frac{P_y}{Q_x}$$



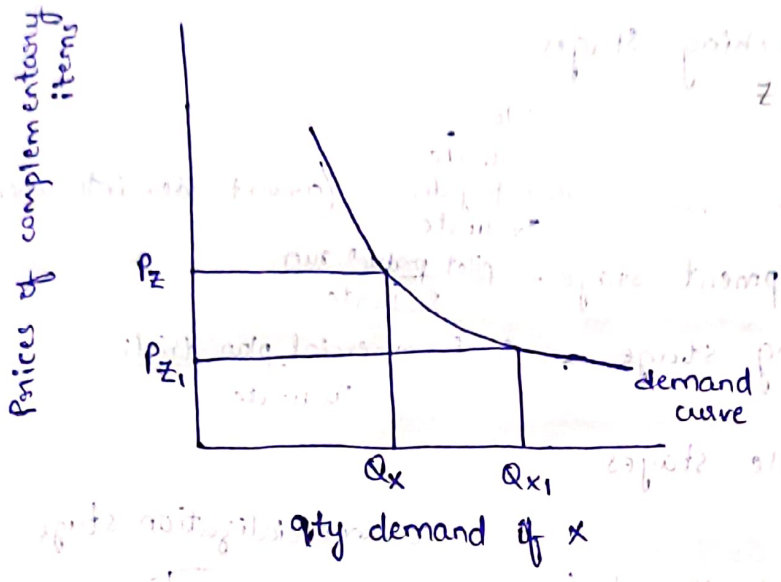
Ex: If price of coffee ↑se, demand for Tea ↑ses

In case of complementary items, (which must be used along with main item)

$$e_{xz} = \frac{\text{\% change in qty of product x}}{\text{\% change in prices of complementary items}}$$

$$= \frac{\Delta Q_x}{Q_x} \div \frac{\Delta P_z}{P_z}$$

$$= \frac{\Delta Q_x}{\Delta P_z} \times \frac{P_z}{Q_x}$$



Z must be accompanied with x

4) <u>Advertisement / Promotional elasticity of demand</u>

It refers to the degree of responsiveness in quantity demanded to the given change in advertisement budget or promotional expenditure.

$$e_a = \frac{\%\text{ change in advertisement budget}}{}$$

$$\text{AED} = \frac{\%\text{ change in qty demanded}}{\%\text{ change in spending on advertising}}$$

$$= \frac{\Delta Q_d}{Q_d} \div \frac{\Delta A}{A}$$

$$= \frac{\Delta Q_d}{\Delta A} \times \frac{A}{Q_d}$$

<u>Factors influencing Advertising Elasticity of Demand:</u>

1) Stage of Product's development
2) Degree of competition
3) Effects of Advertising in Terms of Time:
4) Effect of Advertising by Rival Firms

1) Product Pre Launching Stages

Idea stage — Idea, Evaluate

Concept stage — laboratory dev., Evaluate (convert idea into concept)

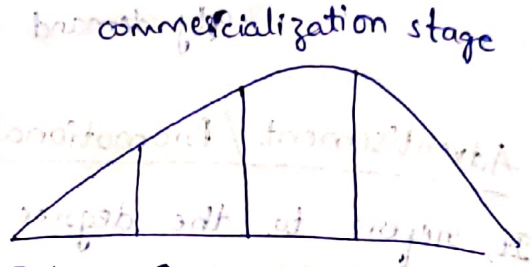
Product development stage — pilot product run, Evaluate

Test marketing stage — semi commercial plan trials, Evaluate

Product life cycle stages

Intro, Growth, Maturity } advertisement is necessary.

decline.



Intro → requires more advmt

Growth → innovative customers

Maturity → max sales ~~decrease~~

Decline → sales get decreased, no use of advmt

2) more competition ⇒ innovations ↑se

3)

4) advertising by competiting with other rival firms.

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Elasticity coeff

It measures the relative measure of demand w.r.to other factors. But, absolute quantity cannot be determined.

Demand forecasting (foresee the future demand)

Here, we estimate / predict the demand of future

- survey methods : take opinions from customers by interviewing
- statistical methods : we use past data to predict the future demand of data

Sales vs demand

Sales → quantity that has already been sold

demand → quantity that will be sold in future

Total Demand

Growth

Trend

Definition of Demand forecasting :-

It's the process of finding values ~~of~~ for demand in future time periods.

It's the process of making estimations about future customer demand over a defined period.

defined period → next year or next month or next 2 yrs.

Methods of Demand Forecasting

- Opinion Polling (Expensive) (surveys) method
  - ~~Customers~~ consumers survey method (customers)
    - Complete Enumeration
    - sample survey & test marketing
  - Sales force opinion method — sales men have complete info abt demand. They interact with middle men
  - Experts opinion method — consultant, Retail shopping, Technology provider
- Statistical method (not expensive)
  - Trend Projection method — identify trend values
    - fitting Trend line by observation
  - Barometric method — how economy is moving. Ex:- purchase/demand of tractors depends on income of farmers. past, present, future
  - Regression method — Independent vars, dependent vars
  - Simultaneous Equation method — to study the relation between independent & dependent vars. Ex: price influence demand. Also, Demand influence price

Demand forecasting enables an organization to take various business decisions, such as :

» planning production process
» purchasing raw materials
» managing funds and
» deciding the price of product

without estimating demand; we cannot determine

Steps of Demand Forecasting (DF)

Setting the objective → Determining Time period → selecting method for DF → Collecting data → Estimating Results

- objective - what is required
- for which period, demand is to be estimated
- select the simple method that gives best results. accuracy, cost, time, flexibility
- may be Primary (∞) which is not collected before; secondary which was used before for other purpose
- predict the results

~~Flexibility factors~~

Significance of demand forecasting

i) Fulfilling objectives : helps organizations to move forward to achieve the set goals by estimating current demand

ii) Preparing the budget : Budget specifies target to be achieved

iii) Stabilizing employment & production : helps organizatn to control its production and recruitment activities

iv) Expanding organizations : helps in deciding about expansion of business of the organization

v) Taking management decisions : helps in making critical decisions, such as plant capacity, raw material requirement

vi) Evaluating performance : helps in making corrections.

vii) Helping Government : enables govt. to coordinate imports & exports & international trade

Factors influencing DF

1) Types of products
   consumer goods, industrial products (machinery, raw materials,..)
   shelf life (durable/ perishable)
   for new products, demand forecasting is not possible

2) Level of Technology
   there will more scope
   when a product reaches its maturity state, new technologies are introduced to prolong its durability.

3) Competition level.
   more competition => more innovations. & new products are developed.

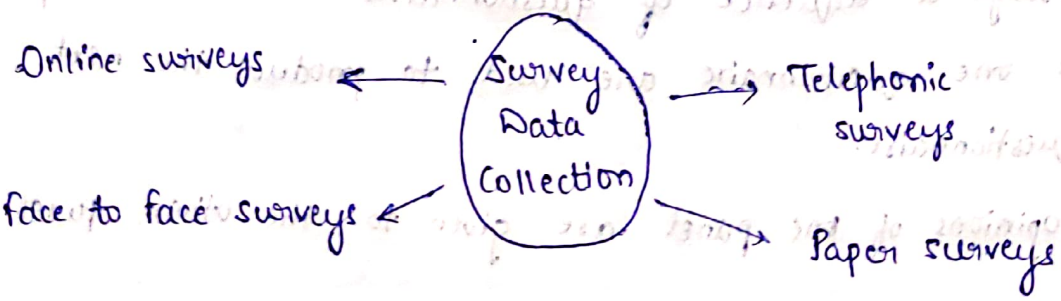
4) Economy level.
   identity the level of economy - (Ex recession), and for how long it remains.

5) Pricing policies
   - influence DF

Types of Demand Forecasting

1) Opinion Polling Methods

opinions of customers, sales person & Experts are taken through surveys.



a) Consumers Survey Method

→ Complete Enumeration Survey / Population method / Census method:

» consumes more time since, survey is done for every person

» requires more man power - costlier

» opinions of one consumer are influenced by other's opinions

→ Sample Survey & Test marketing :-

» consumes less time
» less expensive
» more accurate
» survey is taken from sample. ~~of~~
This sample must represent the entire population.
Ex:- opinions taken from ultra-rich do not match with the opinions taken from poor.

→ End use :-

» used in industrial purposes.

(b) Sales force Opinion Method

» sales men have more knowledge/idea about the product.

(c) Experts Opinion method

» experts are the people who are involved in the product marketing
» they have more idea about product - demand / movement
» "Delphi Technique" of investigation
↳ also known as
» It requires a panel of experts, who are interrogated through a sequence of questionnaires in which responses to one questionnaire are used to produce the next questionnaire.
» opinions of one panel are given to the other panel.

2) Statistical Methods

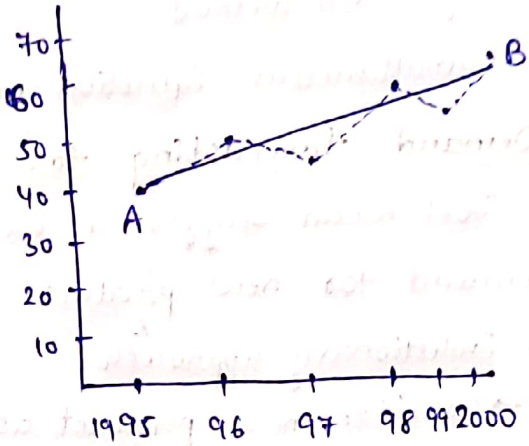
(a) Trend Projection Method – 5 methods (i, ii, iii, iv, v)

» we identify the trends of past data.

(i) Graphical Method

$\Sigma x'$

Year	Sales
1995	40
1996	50
1997	44
1998	60
1999	54
2000	62



— Trend line
---- original.

(ii) Least Square Method

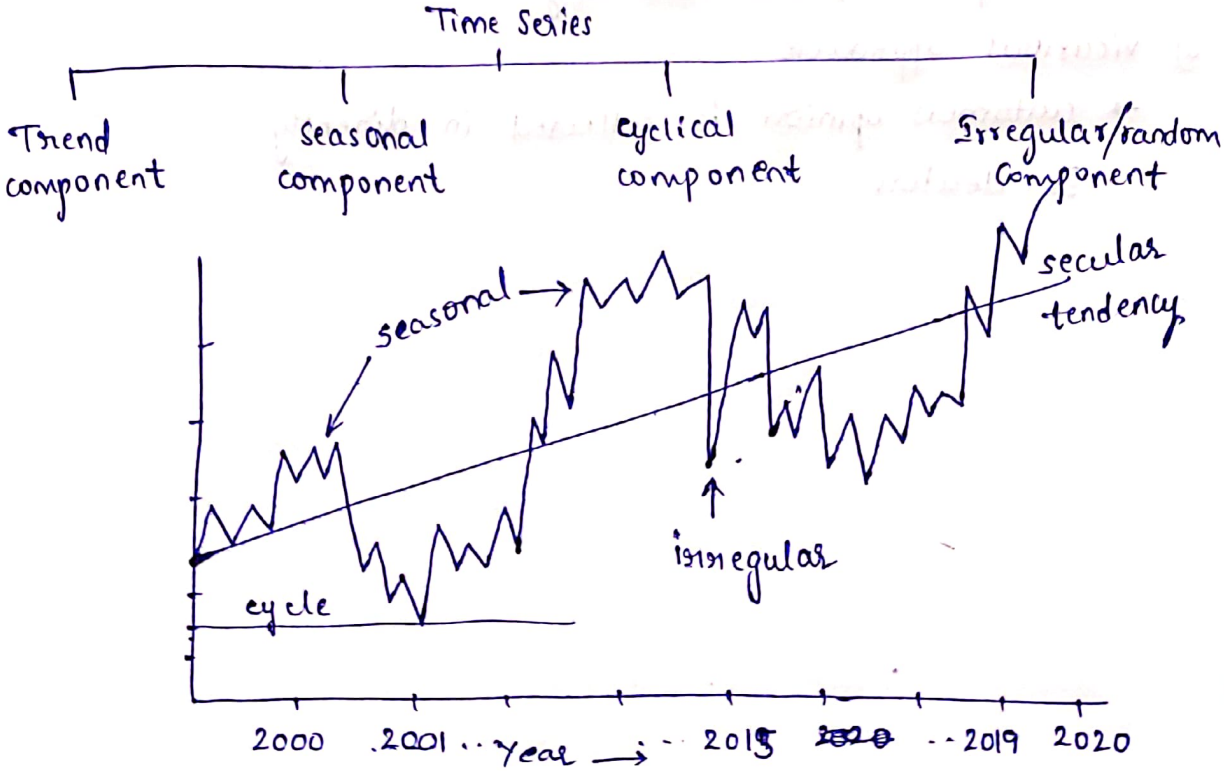
$y = a + bx$

$\Sigma y = na + b\Sigma x$

$\Sigma xy = a\Sigma x + b\Sigma x^2$

$x \rightarrow$ independent var
$y \rightarrow$ dependent var
$a \rightarrow$ intercept
$b \rightarrow$ impact of independent var

(iii) Time Series Analysis



Trend c :- overall, persistent, long-term movement

Seasonal c :- regular periodic fluctuations, usually within a 12-month period

irregular c :- erratic or residual fluctuations

cyclical c :- repeating swings or movements over more than one year

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(iv) Moving average and annual difference.

(b) Barometric method

(c) Regression method

(d) Simultaneous Equation method.

Demand forecasting for new products

Joel Dean suggested various approaches to forecast the demand for new product:

1) Evolutionary approach
→ consider new product as an outgrowth of existing product
Ex: mobile phone is outgrowth of telephone

2) Substitute approach
→ consider new product as a substitute for existing product.

3) Growth curve approach
→ identify trend values, growth.

4) Opinion Poll approaches

5) sales experience / test marketing

6) Vicarious approach
→ customers opinion is collected in directly
Ex: dealers.

26/09/2023 Time period — short period (≤ 1 year)
— long period (more than 1 year)

product^n categories

In Economics :-

we classify acc to product^n factors. (capital, labor, money) → any thing that assess product^n.

fixed factors :- do not change with o/p level. (planted machinery)

variable factors :- o/p level is determined w.r.t factors like labor, raw material. labor, ie., they change with o/p level.

short period — → fixed factors
→ variable factors.

long period requires more product^n and hence, we need more labor, raw materials, machinery acc to qty.

So, in long period, every thing is a variable factor.

→ In Economics, we take 3 product^n factors. They are :-
Land, labor, capital.

Land ⇓ piece of land, raw materials
labor ⇓ physical efforts of employees
capital ⇓ manmade assets.

short period => land is fixed.
labor, capital are variable

Production function refers to the relationship b/w physical ~~grades~~ rates of inputs and the quantity of output.

$$Q = f(\underbrace{a, b, c, d, \ldots n}_{\text{I/P factors}}, T)$$

T → Technology

how I/P factor contributes to the o/p } short time product^n func^n.

Ex:-

1 bag of urea => 5 bags of paddy
2 bags " " => 10 " " "
3 " " " => 15 " " "
4 " " " => 20 " " "

further ↑se in qty of i/p factor (urea) leads to zero benefits. Hence, there is a limited qty for input factors.

Law of variable proportions

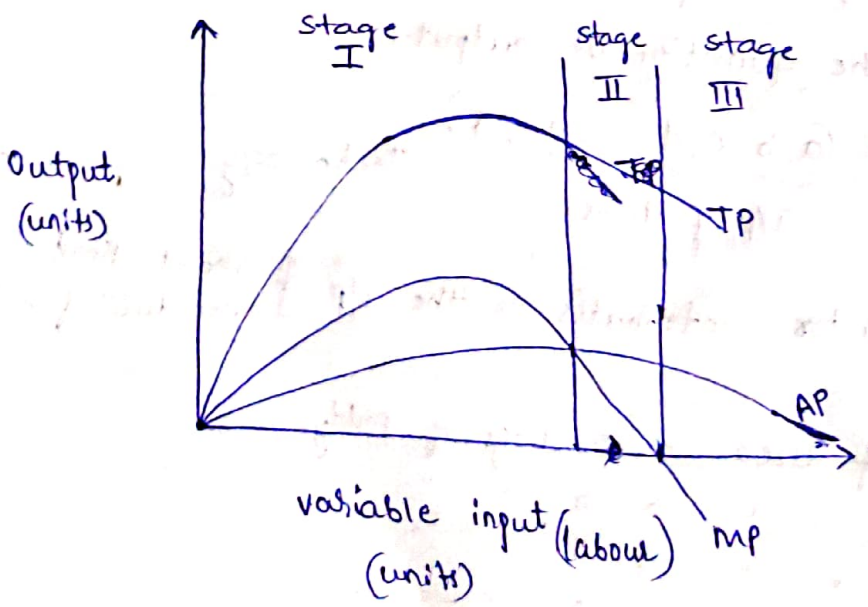
It states that, as the quantity of one factor is increased keeping the other factors fixed, the marginal product of that i/p factors increases and eventually declines.
↳ in the initial stages.

Land (in acres)	Labour (units)	Total Product^n (units) → aggregate	Average Product^n (units) $\frac{TP}{labour}$ → o/p for per labour	Marginal Product (units) → additional o/p obtained by additional I/p
1	1	10	10	10
1	2	25	12.5	15
1	3	37	12.3	12
1	4	47	11.8	10
1	5	55	11	8
1	6	60	10	5
1	7	63	9	3
1	8	63	7.9	0
1	9	60	6.6	-3

→ additional contribution

no use of 8th labour
It is efficient but not compatible

So, stop the production at 7th labourer



Long run production functions

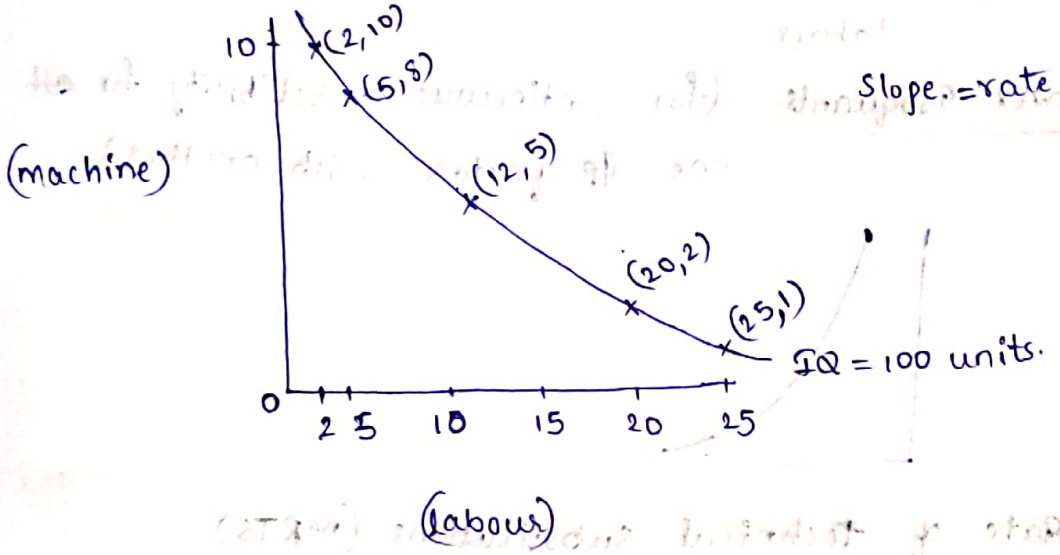
Isoquant

Isoquant is a curve which is the locus of all possible combinations of two input factors to produce the same level of output. (To obtain least cost)

27/09/2023

Combination	machine (units)	labour (units)	output (units)
A	10	2	100
B	8	5	100
C	5	12	100
D	2	20	100
E	1	25	100

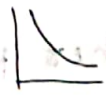
reduced ↓ increased ↑



Slope = rate of replacement

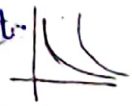
Properties of Isoquant (Equal product curve) (Producⁿ indifference curve) (Constant producⁿ curve)

» An isoquant slopes downwards.

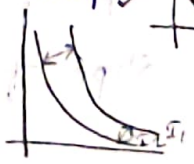


» Two isoquants do not intersect with each other. ✗

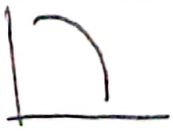
» A higher isoquant implies a higher level of output. ✓



» Isoquants are never parallel to each other.

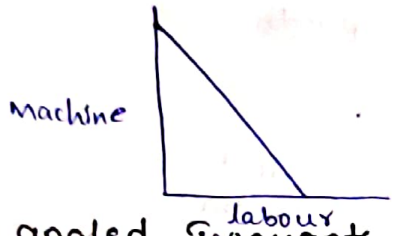


» Isoquants are convex to origin but not concave ✗



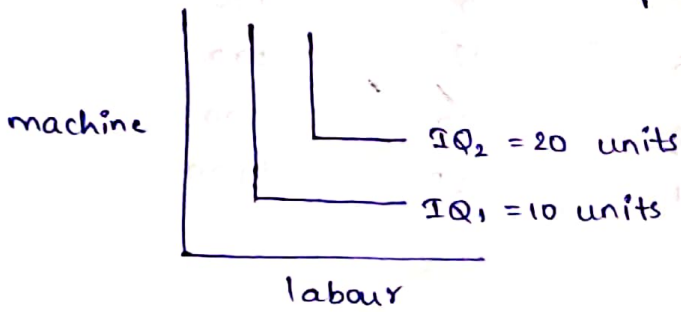
Types of Isoquants

Linear Isoquant curves (for perfect substitutable inputs).



Ex: for machines => we use completely labour.

Right-angled Isoquants (for strict complimentary inputs with fixed proportions)



Ex: without labour, machines can't be used

1 m 2 operators

2 m 4 operators

Smooth Convex Isoquants (for continuous substibility for ~~all~~ one i/p factor with another)

Marginal Rate of Technical Substitutions (MRTS)

(At which rate, we are replacing)

MRTS is defined as the rate at which one factor can be substituted for another factor to obtain the same level of output.

~~Slope of MRTS~~

$$\text{Slope of Isoquants (MRTS)} = \frac{\Delta L}{\Delta K} = \frac{MP\,L}{MP\,K}$$

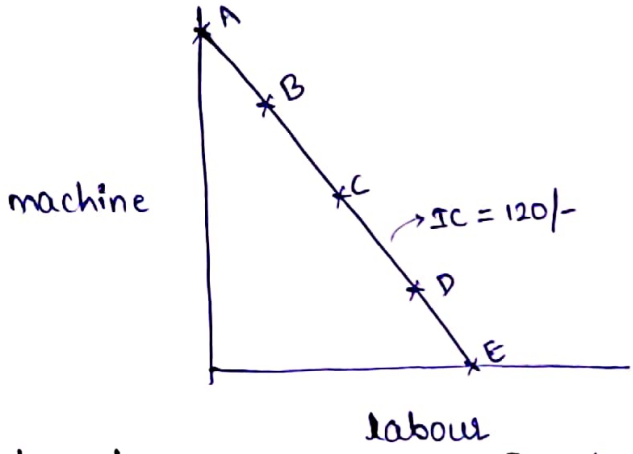
Isocost : Isocost is a curve or a line which represents all possible combinations of two input factors for the same budget or expenditure level.

Combination	machine (units) @15/-	labour (units) @10/-	Budget (or) Exp
A	8	0	120/-
B	6	3	120/-
C	4	6	120/-
D	2	9	120/-
E	0	12	120/-

$15 \times 6 = 90$

$120 - 90 = 30$

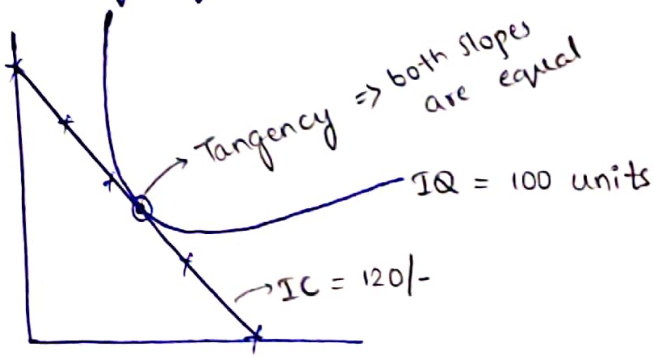
$\frac{30}{10} = 3$



$$\text{slope of Isocost} = \frac{\text{Price of labour}}{\text{Price of machine}} = \frac{P_L}{P_K}$$

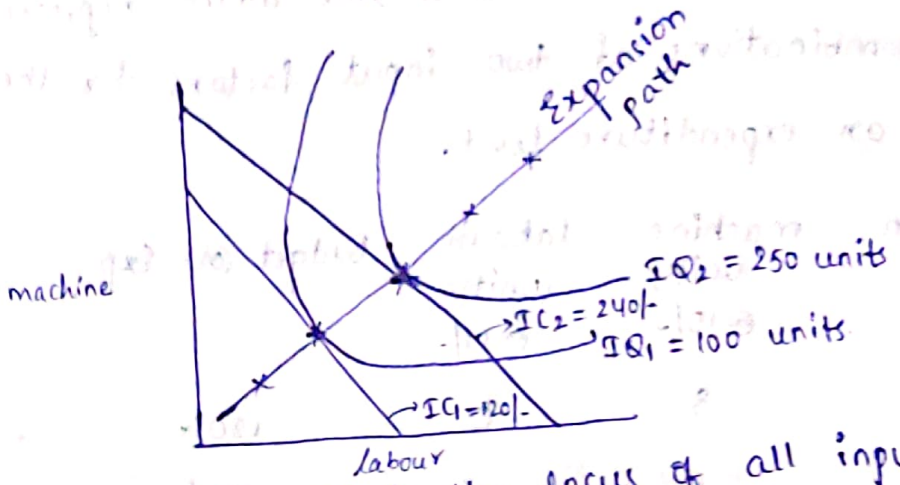
Least cost combinations of Inputs

The optimal combinations or least cost combinations can be identified by taking the ~~con~~ slope of Isoquant and Isocost at tangency point of both curves.



Here, $\frac{MP_L}{MP_K} = \frac{P_L}{P_K}$

$$\Rightarrow \frac{MP_L}{P_L} = \frac{MP_K}{P_K}$$



Expansion path: It is the locus of all input combinations for which MRTS is equal to the factor price ratio.

03/10/2023

Law of returns to Scale

(benefits/savings/economy) (product^n level)

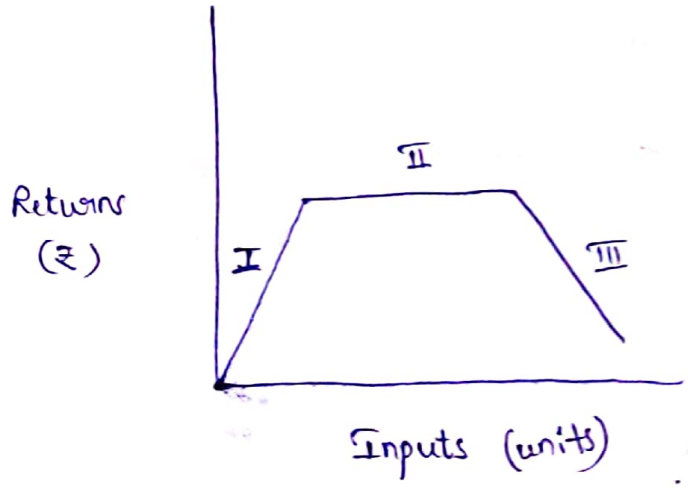
It describes the relationship b/w the changes in o/p or returns and proportionate change in all factors of production

stages

1) If I/p product^n ↑ses from 100 to 200 (200 L, 200 C) => o/p ~~400~~ 500
2) further ↑ses from 200 to 400 (400 L, 400 C) => o/p is 500 → diseconomy
3) 400 to 500 (500 labour, 500 capital) => o/p is 800 → diseconomy dominates.

Stages of Law of returns to Scale

1) Law of increasing returns
2) Law of constant returns
3) Law of negative returns / diminishing returns.



Internal Economy ⇒ benefits are only for firms
External Economy ⇒ " " to industry.

(i) small companies → use byproducts acc to demand.
(ii) large companies get additional benefits.
↳ can use large amount of byproducts.

Technical
labour efficienty is high in large companies.
↳ o/p is high.

large companies can spend high amt for advertisement
~~per unit~~

SCs cannot use high financial economies.

Cost of Production
Cost involved in each elem to produce product.

If raw material is not available :-
LCs find for alternatives
SCs do not find for alternatives.

LCs enjoy all economies — financial, labour, technical

04/10/2023

Break-Even Analysis / CDP Analysis
Level/stage at which no loss and no profit are achieved.

Impact of changes influence business.

→ Break-Even Analysis is a technique of determining the level of production or sales where, a firm get neither profit nor loss

Assumptions of Break-Even Analysis,

1) Total costs are divided into fixed costs and variable costs
↳ remain fixed. ↳ change with o/p

Ex: rent paid ~~for~~ ~~a~~ for factory building ⇒ fixed
labour — wages ⇒ variable
employees — salary ⇒ fixed

raw-material cost ⇒ variable

interest-paid on borrowed capital ⇒ fixed

2) Total fixed cost remain constant with any level of production ~~of~~ or sales.

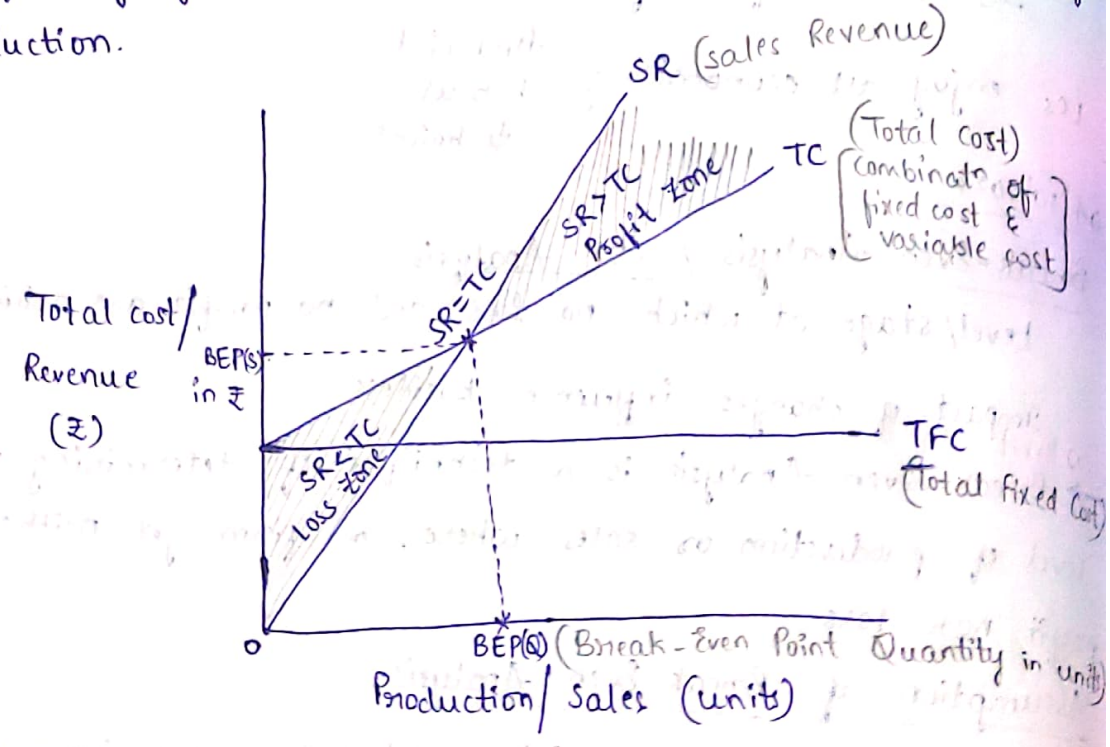
3) Total variable cost change with the production level. But, variable cost per unit remain constant.

4) Selling price (SP) of the product remain constant with every level of sales.

5) Perfect synchronization b/w production quantity and sales quantity ie, there will be no opening stock and closing stock.
↳ arises when unable to sell
↳ this becomes opening stock in the next yr

6) Only one product in the ~~pr~~ entire production. In case of multiple products, the production (of product) mix with the changed level of production.

7) Efficiency of the firm remains same with every level of production.



Sales Revenue (SR) = T.FC + PVC ± Profit/Loss

$\Rightarrow$ $SP \times Q = TFC + VC \times Q \pm P/L$

Q → Quantity

VC → variable cost per unit

at BEP,

$SP \times Q = TFC + VC \times Q + 0$ (∵ neither profit nor Loss)

$\Rightarrow$ $Q(SP - VC) = TFC$

$\Rightarrow$ $Q = \dfrac{TFC}{SP - VC}$

Q → Quantity of production at Break-Even

Given, SP = 100/- per unit

TFC = 10,000/- per year

VC = 60/- per unit

Then, $BEP(Q) = \dfrac{10000}{100 - 60} = \dfrac{10000}{40} = 250$ units

$SR = SP \times Q$

$= 100 \times 250$

BEP (₹) = SR = 25000

To find profit :-

25000 − TFC

= 25000 − 10000

= 15000.

Profit = (SP × Q) − TFC − (VC × Q)

= 25000 − 10000 − 15000

= 0

$VC \times Q = 60 \times 250 = 15,000$

∴ 15000 − 15000 = 0 profit

Here, BEP (Q) = 250

BEP (₹) = BEP (Q) × SP

05/10/2023

Applications of Break-Even Analysis

» It identifies minimum level of production or sales to be undertaken by a firm to avoid the losses.

» It identifies required sales to get a desired profit.

» It identifies impact of changes in variable costs, fixed cost and selling price on the profitability of the business.

» It identifies most profitable products for the business.

» It identifies the feasibility of add or drop product decision.

Formulae

1) Breakeven point (units), $BEP(Q) = \frac{TFC}{SP - VC}$

2) Breakeven point (₹), $BEP(₹) = BEP(Q) \times SP$ = Break Even Sales (₹)

$$\frac{TFC \times \text{actual sales } (₹)}{\text{actual sales } (₹) - TVC} = \text{Break Even Sales } (₹) = \frac{TFC}{P/V \text{ ratio}}$$

3) Sales required to earn ~~desised~~ desired profit

$$= \frac{TFC + \text{desired profit}}{P/V \text{ ratio}}$$

4) Margin of safety (MOS) = actual sales (₹) − Break Even Sales (₹)

$$MOS = \frac{\text{profit}}{P/V \text{ ratio}}$$

After or beyond Break Even there will be no FC we have only VC

P/V ratio formulae

» $P/V \text{ ratio} = \frac{SP - VC}{SP} \times 100$

» $P/V \text{ ratio} = \frac{TFC + \text{profit}}{\text{sales}} \times 100$

» $P/V \text{ ratio} = \frac{\text{sales} - TVC}{\text{sales}} \times 100$

If SR = 100

(TFC + P) = 40%

TVC = 60%

Contribution component

» P/V ratio $= \frac{\Delta \text{profits}}{\Delta \text{sales}} \times 100$

Q) A company produces a single product and the cost structure is as follows.

SP per unit = ₹ 40

VC per unit = ₹ 24

FC per annum = ₹ 16000

Calculate (i) BEP (units) (ii) BEP (sales) in ₹

(iii) P/V ratio (iv) Required sales to get a profit of ₹2000

(V) profit or loss at sales of ₹ 60,000

Sol:

(i) $BEPQ(\text{units}) = \frac{TFC}{SP - VC}$

$\Rightarrow BEPQ(\text{units}) = \frac{16000}{40-24} = \frac{\overset{1000}{16000}}{16} = 1000$

(ii) BEP Sales (₹) = BEP (Q) × SP

$= 1000 \times 40 = 40000$

(iii) $P/V \text{ ratio} = \frac{SP - VC}{SP} \times 100$

$\Rightarrow P/V \text{ ratio} = \frac{40-24}{40} \times 100 = \frac{\overset{4}{16}}{\cancel{40}} \times 10\cancel{0} = 40\%$

(iv) Sales required to earn profit of ₹2000

$= \frac{TFC + \text{desired profit}}{P/V \text{ ratio}}$

$= \frac{16000 + 2000}{0.4} = \frac{18000}{0.4} = ₹45000$

TFC + P = sales × P/V ratio

$TFC + P = 45000 \times \frac{40}{100} = 18000$

$\Rightarrow P = 18000 - TFC = 2000$

(V) profit or loss at sales of ₹ 60000

= (Sales × P/V ratio) − TFC

~~= (60000 × 0.4) − 16000 =~~

$= \left(6000\cancel{0} \times \frac{4\cancel{0}}{10\cancel{0}}\right) - 16000 = 24000 - 16000 = ₹8000$

(or)

$SR = TVC + TFC + P$

$60000 = 24 \times 1500 + 16000 + P$

$\Rightarrow P = ₹8000$

$\frac{16000}{40} = 400$

$\frac{60000}{40} = 1500$

10/10/2023

Q) From the following data of the product, find out

(i) Break even (₹), Break Even (units)

(ii) P/V ratio

(iii) sales required to earn a desired profit of ₹6 lakh

Selling price = ₹500 per unit

Variable cost = ₹300 per unit

Total fixed cost = ₹4,00,000 per year

Soln (i) $BEP\ (units) = \frac{TFC}{SP - VC} = \frac{400000}{500 - 300} = \frac{400000}{200} = 2000$

ie, By selling 2000 units, there would be neither profit nor loss

$BEP\ (₹) = BEP\ (units) \times SP = 2000 \times 500 = 10,00,000$

(ii) $P/V\ ratio = \frac{SP - VC}{SP} \times 100$

$= \frac{500 - 300}{500} \times 100 = \frac{200}{5} = 40\%$

(iii) $Required\ sales = \frac{TFC + desired\ profit}{P/V\ ratio}$

$= \frac{400000 + 600000}{0.4} = \frac{10,00000}{4} \times 10 = ₹25,00,000$

$no.\ of\ units = \frac{required\ sales}{SP}$

$= \frac{2500000}{500} = 5000\ units.$

Proof

WKT,

$TFC + P = sales \times P/V\ ratio$

$\Rightarrow 400000 + P = 2500000 \times \frac{40}{100}$

$\Rightarrow P = 1000000 - 400000$

$P = ₹600000$

TFC + P

⇓

Contribution

Beyond Break Even => no FC

=> contribution ≡ profit.

Q) From the following data, find out (i) BER (₹) and BEP (units) (ii) margin of safety (iii) sales required to get a desired profit of ₹90000 (iv) profit or loss at existing sales.

Actual sales (₹) = 600000 = Sales Revenue

Total variable cost = ₹ 375000

Total fixed cost = ₹ 180000 per year

Number of units produced & sold during the year = 15000

Sol^n (i) $BEP(units) = \frac{TFC}{SP - VC}$

$SP = \frac{\text{actual sales}}{\text{no. of units sold}} = \frac{600000}{15000} = ₹40$ per unit

lly, $VC = \frac{375000}{15000} = ₹25$ per unit

$BEP\ (units) = \frac{180000}{40-25} = \frac{180000}{15} = 12{,}000$ units

BEP (₹) = BEP (units) × SP

= 12000 × 40 = ₹4,80,000

(ii) Margin of safety = actual sales − BEP (₹)

= 600000 − 480000

= ₹1,20,000

(iii) required sales $= \frac{180000 + 90000}{P/V \text{ ratio}}$

$P/V \text{ ratio} = \frac{SP - VC}{SP} \times 100 = \frac{(40-25)}{40} \times 100 = \frac{15}{40} \times 100$

$= \frac{75}{2}$

$= 37.5\%$

=> required sales $= \frac{270000}{\left(\frac{37.5}{100}\right)}$

= ₹7,20,000

(iv) SR = TVC + TFC + Profit

$\Rightarrow$ ~~40 x 15000~~

$\Rightarrow$ 600000 = 375000 + 180000 + P

$\Rightarrow$ 600000 - 555000 = P

$\Rightarrow$ Profit = ₹ 45000

P = (Sales x P/V ratio) - TFC
= (600000 x 0.375) - 180000
= 225000 - 180000
= 45,000

~~(iii) Required sales =~~

Q) From the following data, find out

(i) P/V ratio

(ii) Total fixed cost

(iii) BEP (₹)

(iv) margin of safety in the yr 2017

Year	2016	2017
sales (₹)	2,00,000	3,00,000
profit (₹)	30,000	50,000

Solⁿ (i) P/V ratio $= \frac{\Delta \text{profits}}{\Delta \text{sales}} \times 100$

$\Rightarrow$ P/V ratio $= \frac{50,000 - 30,000}{3,00,000 - 2,00,000} \times 100$

$= \frac{20\cancel{000}}{1\cancel{00000}} \times 1\cancel{00} = 20\%$

(ii) P/V ratio $= \frac{\text{TFC} + \text{profit}}{\text{sales}} \times 100$

$20 = \frac{\text{TFC} + 30,000}{2,00,0\cancel{00}} \times 1\cancel{00}$

$\Rightarrow \left(\frac{20}{\cancel{10}} \times 200\cancel{0}\right) - 30000 = \text{TFC}$

$\Rightarrow$ TFC = 40000 - 30000

$\Rightarrow$ TFC = ₹ 10,000

(iii) BEP (₹) $= \frac{\text{TFC}}{\text{P/V ratio}}$

$= \frac{10,00\cancel{0}}{\left(\frac{20}{10\cancel{0}}\right)} = 50000$

(iv) margin of safety $= \frac{\text{Profit}}{\text{P/v ratio}} = \frac{50,000}{\left(\frac{20}{100}\right)} = 250000$

Q) From the following info find out

(i) P/v ratio (ii) sales (iii) margin of safety

Total fixed cost = ₹ 40,000 per year

Total profit during the year = ₹ 20,000

BEP (₹) = 80,000

Solⁿ (i) $\text{BEP (₹)} = \frac{\text{TFC}}{\text{P/v ratio}} = \frac{40000}{\text{P/v ratio}}$

$\Rightarrow$ P/v ratio $= \frac{40000}{80000} = 50\%$

(ii) $\text{sales} = \frac{\text{TFC + profit}}{\text{P/v ratio}}$

$\Rightarrow \text{sales} = \frac{40000 + 20000}{\left(\frac{50}{100}\right)} = \frac{60,000}{50} \times 100$

$= 1,20,000.$

(iii) Margin of safety $= \frac{\text{Profit}}{\text{P/v ratio}}$

$= \frac{20,000}{50} \times 100 = 40,000.$

11/10/2023

UNIT - 3

Market : place where goods are sold

It is a virtual place where buying and selling of products take place.

Buyers and sellers interact with each other to exchange the goods.

* Market is a set of conditions in which buyers and sellers interact with each other to exchange the goods & services.

* Market structure refers to the characteristics of the market either organisational or competitive that describes the nature of competition and the pricing policy followed in the market.

Major Classification of Markets

According to place :-

local → Ex: vegetable market

national market → Ex: food grains, textiles, electricity

international market → Ex: Tata motors, crude oil

According to timeperiod :- they influence only some factors.

very short → 1-day, 1-week → supply demand factors influence

Ex : no. of conventional halls acc to the no. of marriages.

∵ demand is more

supply is restricted

⇒ prices ↑ses

short → 3 ↓ → additional supply is possible even

long → have plenty of time to supply acc to the demand

According to competition :- imperfect, perfect

• Imperfect competitive markets Competition

monopoly → no competition, sole producer, imperfect market, Ex: Indian railways, single seller

duopoly → two sellers

oligopoly → few sellers, Ex: telecom markets, petrol stations

monopolistic competition, Ex: iPhone, despite of competitions, they create monopoly. Here, monopoly is being restricted.

• perfect competetive markets. large no. of sellers & buyers.

Major determinants of the market structure

1) No. of sellers operating in the market (1 seller is forced to buy)
2) No. of buyers in the market. (1 buyer ⇒ Govt)
3) Nature of goods and services. (differentiated / identical products)
4) Price fixation power. In monopoly; seller cannot fix the price
5) Entry and Exit Barriers. (It should be more.) → restrictions → Ex: Govt. permissions → Telecom Space.

» For a market to gain max profits, it should understand the impact of all factors.

» Buyer should also understand the market.

» Regulatory body needs to understand the market.

Perfect Competition

It refers to a market structure in which the no. of buyers & sellers are very large, all are engaged in buying & selling a homogeneous product without any entry restrictions and all sellers are price takers. (Ex: rice & other commodities)

Sellers cannot fix the price.

Features of perfect Competition

Market/Industry fixes the price

» large no. of sellers.

» No single seller can influence the supply

» Large no. of buyers.

No single buyer can influence the demand.

Individual buyer's purchasing qty is negligible when compared to the total qty

» Homogeneous Commodity.

The products offered in the market are identical from one seller to another seller.

» Every firm/seller is a price taker

(demand & supply are the factors that influence price)

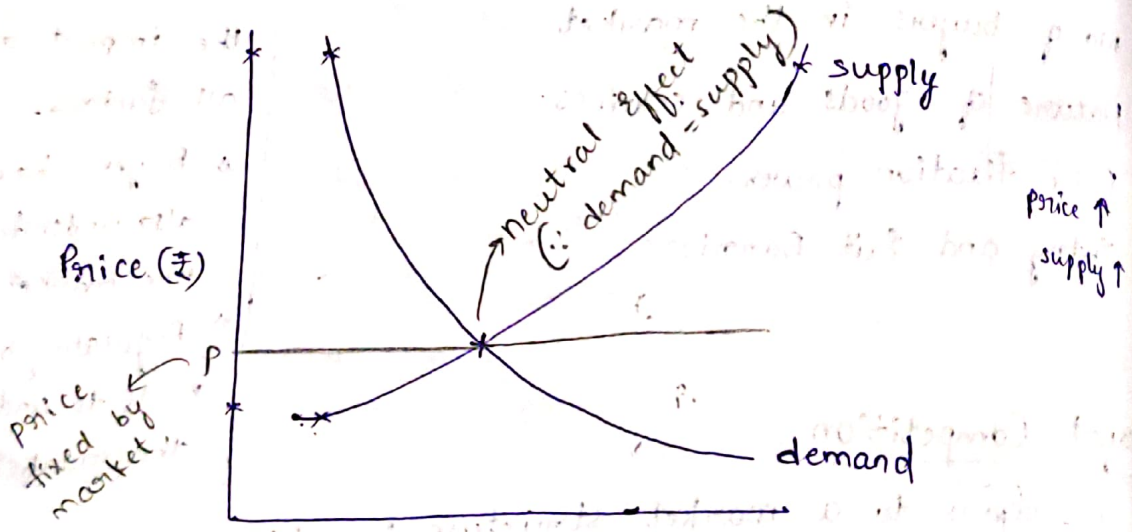
As long as demand equals supply ⇒ price do not change

» Free Entry and Exit of Sellers.

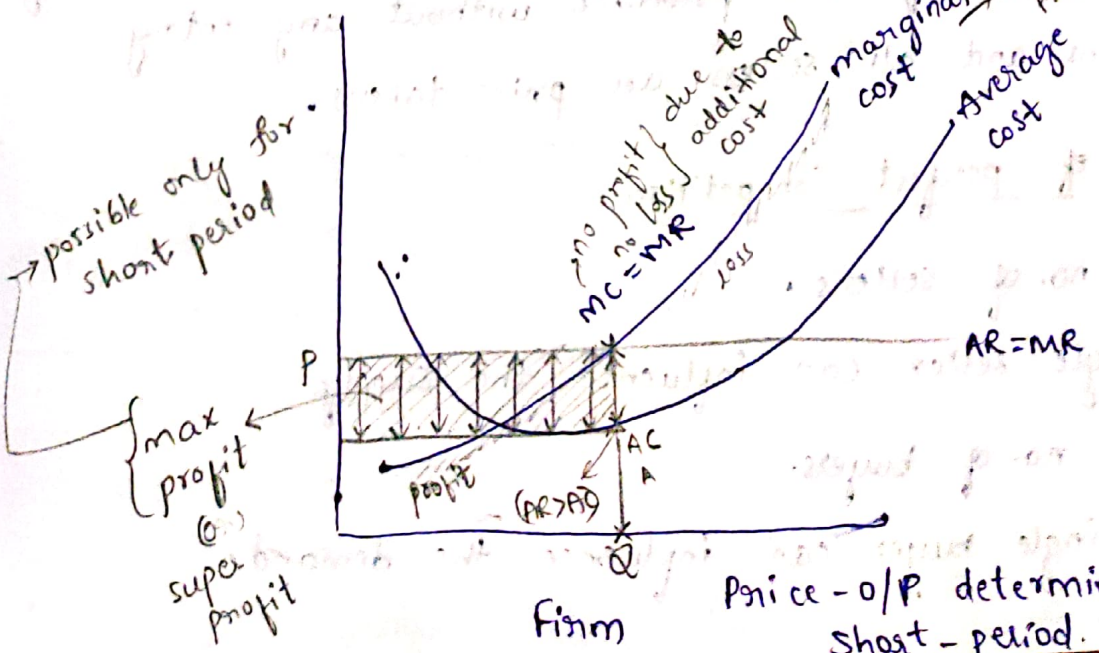
» Complete market information to every participant of the market

» Absence of transportation cost.

» No taxes and government intervention.



Price ↑
supply ↑



To find profit, deduct the cost from avg rev

Price - o/P determination.
Short - period.

Equilibrium level of o/p :- where a firm gets max profit. (MC = MR)

18/10/2021 at this point, there will be no intention to ↑se/↓ the (o/p level) production.

Profit depends on AC, AR

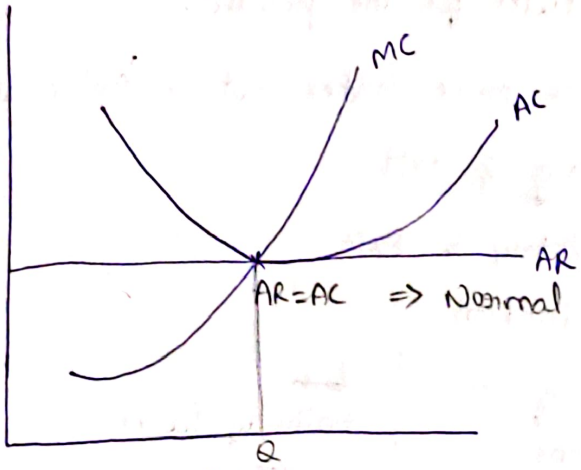
AR > AC → super profit

AR = AC → Normal profit
40 = 40

AR < AC → Loss

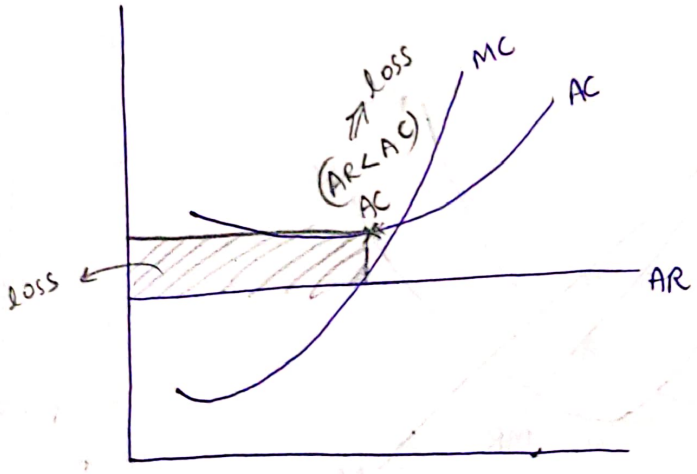
[here, basic remuneration is included that brings profit]

cost of produc^n → 40 = avg cost
raw material 20
labour cost 10
remuneration paid to mgmt 10
avg revenue = 50/-



⇒ Normal profit.

firm long-run



In perfect competition

Equilibrium Condition/level :-

MC = MR

Imperfect Competition

1) Monopoly

Monopoly is a market structure where a single firm produce and sell a commodity without any substitute for it, and there are Entry and Exit Barriers.

Ex: Indian Railways (Controlled by Govt.)

Features of Monopoly :-

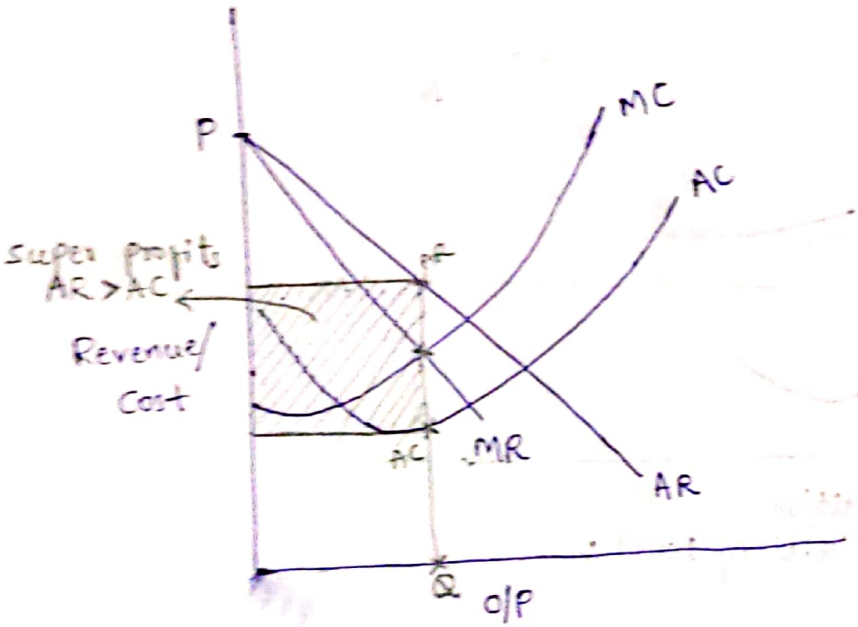
1) Single seller of the product
2) No close substitutes for the product
3) Monopolist is a price maker, not a Price taker.

~~Barriers to Entry & Exit~~

4) Barriers to Entry & Exit
5) Price Discrimination

acc to qty of service
acc to seasons
} railway fares vary.

- Legal
- Economical
- technical
- Barrier of reputation

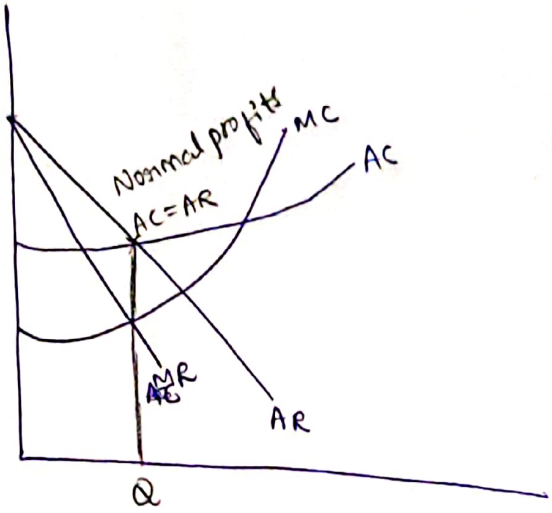


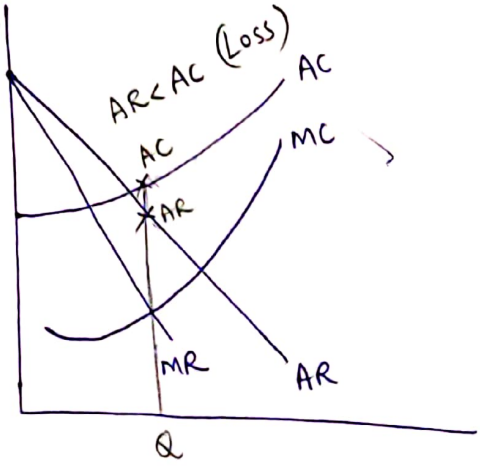
As the qty of producn ↑ses, monopoly offers discount & thus AR ↓ses

Additionally :- If further produc is to be ↑sed, further discount have to be given.

Initially, AC is high

As producn ↑ses ; AC ↓ses


Normal profit
MC
AC
AC=AR
MR
AR
Q


AR<AC (Loss)
AC
AC
MC
AR
MR
AR
Q

Break-Even Analysis Problems

Roll Number: 21B81A1207

1) From the following data calculate Break-Even Units

Selling price per unit = Rs.50
Variable cost per unit= 30
Fixed Cost = Rs.400000

2) A company produced and sold 1000 units of a product. The following data is related to the product
Actual Sales = Rs.600000
Variable cost = Rs.360000
Total Fixed cost = Rs.180000

calculate i) BEP units and BEP amount (Rs) ii) P/V Ratio iii) Margin of safety iv) Sales required to earn a desired profit of 12000 Rs.

3) From the following information find out the i) Amount of profit earned during the year and ii) BEP Units

Fixed cost = Rs300000
Selling price per unit = Rs.25
Variable cost per unit = Rs.15
Output level = 25000 units

4)From the following data, calculate i) P/v Ratio ii) Break-even point Units and Rs iii) Margin of safety iv) Sales Required to earn a Profit of Rs 400000

Sales = Rs.800000
Number of Units produced and Sold = 4000
Fixed Expenses Rs.200000
Variable expenses:
Direct material = Rs 180000
Direct Labor = Rs 120000
Other variable Expenses = Rs 100000

Total VC = Rs.400000

5) The operating results of a company for the last two years are as follows:

YEAR	SALES(Rs)	PROFIT(Rs)
2017	270000	6000
2018	300000	9000

Calculate 1) P/v ratio 2) Fixed Cost 3) BEP (Rs) 4) Margin of Safety

6) the following data are obtained from the records of a manufacturing company:

YEAR	SALES(Rs)	Total Cost (Rs)
2015	80000	70000
2016	90000	76000

Calculate 1) P/v ratio 2) BEP

7) The operating result of a company for the last Two periods are as follows:

PERIOD	SALES(Rs)	PROFIT(Rs)	Loss(Rs)
I	270000	--	10000
II	300000	5000	--

Calculate:

1) BEP
2) Sales required to earn a profit of Rs.10000

① $BEP\ (Q) = \frac{TFC}{SP - VC}$

$= \frac{400000}{50-30} = \frac{4000000}{20} = 20000$ units.

② (i) $BEP\ units = \frac{TFC}{SP - VC}$

$Q = 1000$, $SR = 600000$, $VC = 360000$

$TFC = 180000$ actual sales. VC per unit $= \frac{360000}{1000} = 360$

$SR = SP \times Q$

$\Rightarrow 600000 = SP \times 1000$

$\Rightarrow SP = 600$

$600 - 360 = 240$

$BEP\ units = \frac{180000}{600-360} = \frac{180000}{240} = 750$ unit.

$BEP\ amount = BEP\ units \times SP$

$= 750 \times 600$

$= ₹\ 4,50,000.$

$600000 - 450000 = 150000$

(ii) $P/V\ ratio = \frac{SP - VC}{SP} \times 100$

$= \frac{600-360}{600} \times 100 = \frac{240}{6} = 40\%$

(iii) $MOS = Actual\ sales - BEP\ sales$

$= 600000 - 450000$

$= ₹1,50,000$

(iv) sales required to earn a desired profit of ₹12000 $= \frac{TFC + desired\ profit}{P/V\ ratio}$

$$= \frac{180000 + 12000}{\left(\frac{4}{10}\right)} = \frac{192000 \times 10}{4}$$

$$= 2,80,000$$

③ $SP \times Q = TFC + (VC \times Q) + Profit$

$$25 \times 25000 = 300000 + (15 + P \times 25000) + P$$

$$625000 - 300015 = P$$

$$\Rightarrow 625000 = 300000 + 375000 + P$$

$$\Rightarrow P = -50,000$$

$$P/V \text{ ratio} = \frac{SP - VC}{SP} \times 100$$

$$= \frac{(25-15)}{25} \times 100 = 40$$

③ (i) $SP \times Q = TFC + TVC + P$

$$\Rightarrow 25 \times 25000 = 300000 + (15 \times 25000) + P$$

$$\Rightarrow P = -50,000$$

(ii) $$BEP \text{ units} = \frac{TFC}{SP - VC}$$

$$= \frac{300000}{25-15} = \frac{300000}{10} = 30000$$

④ (i) $$P/V \text{ ratio} = \frac{\text{sales} - TVC}{\text{sales}} \times 100$$

$$= \frac{800000 - 400000}{800000} \times 100$$

$$= \frac{400000}{8000} = 50\%$$

(ii) $$BEP \text{ (units)} = \frac{TFC}{SP - VC}$$

$$SP = \frac{\text{sales}}{Q} = \frac{800000}{4000} = ₹200$$

$$VC = \frac{400000}{4000} = ₹100$$

BEP units $= \frac{200000}{200-100} = \frac{200000}{100} = 2000$.

(iii) MOS = Actual sales − BEP sales

$= 800000 - (\text{BEP units} \times SP)$

$= 800000 - (2000 \times 200)$

$= 800000 - 400000$

$= ₹\,400000$.

(iv) sales req $= \frac{\text{TFC + desired profit}}{\text{P/V ratio}}$.

~~P/V rat~~ $= \frac{200000 + 400000}{\left(\frac{5}{10}\right)}$

$= \frac{600000 \times 10}{5}$

$= ₹\,1200000$.

(5) (1) P/V ratio $= \frac{\Delta \text{profit}}{\Delta \text{sales}} \times 100$

$= \frac{9000 - 6000}{300000 - 270000} \times 100$

$= \frac{3000}{30000} \times 100$

$= 10\%$

(2) P/V ratio $= \frac{\text{TFC + Profit}}{\text{sales}}$

$\Rightarrow \frac{1}{10} = \frac{\text{TFC} + 6000}{270000}$

$\Rightarrow 27000 = \text{TFC} + 6000$

$\Rightarrow \text{TFC} = 27000 - 6000 = ₹\,21000$

(3) ~~BEP (Rs) = BEP units × SP~~

~~BEP units =~~

(3) $BEP\ (Rs) = \frac{TFC}{P/V\ ratio} = \frac{21000}{1} \times 10 = 210{,}000$

(4) $MOS = \frac{Profit}{P/V\ ratio} = \frac{6000}{\left(\frac{1}{10}\right)} = ₹60000 \Rightarrow$ Year 2017

$MOS = \frac{9000}{\left(\frac{1}{10}\right)} = ₹90000 \Rightarrow$ 2018 Year

(6) ~~(1) P/V ratio = sales − TVC~~

(1) Profit = sales − Total cost

2015 :- Profit = 10000 (∵ 80000 − 70000)

2016 :- Profit = 14000.

$$\begin{array}{r} 90000 \\ 76000 \\ \hline 14000 \end{array}$$

$P/V\ ratio = \frac{\Delta profit}{\Delta sales} \times 100$

$= \frac{4000}{10000} \times 100 = 40\%$

(2) $P/V\ ratio = \frac{TFC + profit}{sales}$ ~~×100~~

$\frac{40}{100} = \frac{TFC + 10000}{80000}$

$\Rightarrow 32000 - 10000 = TFC$

$\Rightarrow TFC = ₹22000.$

$BEP\ (₹)$ ~~units~~ $= \frac{TFC}{P/V\ ratio} = \frac{22000 \times 10}{4} = ₹55000$ ~~units~~

(7) (1) $BEP (₹) = \frac{TFC}{P/V \text{ ratio}}$

$P/V \text{ ratio} = \frac{\Delta \text{profit}}{\Delta \text{sales}}$

$= \frac{5000 - (-10000)}{300000 - 270000} = \frac{\cancel{15000}^{1}}{\cancel{30000}_{2}} = 50\%$

~~(2) sales req =~~ ~~BEP (₹) =~~

$P/V \text{ ratio} = \frac{TFC + P}{SR}$

$\Rightarrow \frac{50}{\cancel{100}} = \frac{TFC + (-10000)}{270000}$

$135000 + 10000$

$\Rightarrow 135000 + 10000 = TFC$

$\Rightarrow TFC = ₹145000$

$\therefore BEP (₹) = \frac{145000 \times \cancel{100}^{2}}{\cancel{50}} = ₹ 290,000$

(2) $\text{sales req} = \frac{TFC + \text{desired profit}}{P/V \text{ ratio}}$ ~~×100~~

$= \frac{(145000 + 10000) \times \cancel{100}^{2}}{\cancel{50}}$ ~~×100~~

$= 155000 \times 2 = ₹3,10,000$

~~3,100,000~~

~~(2)~~

08/11/2023

Monopolistic Competition

Comparison of various market structures

Feature	Perfect competition	Monopoly	Monopolistic	Oligopoly.
1) No. of sellers	Large. Various no. of firms constitute industry.	One/Single No difference b/w firm and industry Ex: Indian railways	Many sellers with small share in the market. Many firms in the industry. Ex. Pharmaceutical	Few Big sellers Industry consists only few players. Ex: Telecom services. Oil refineries.
2) Product.	Homogeneous products which are perfect substitutes. no diff if product is bought from x or y	Unique product without close substitutes.	Differentiated products which are close substitutes but not perfect substitutes. To identify product, consider basic needs	Differentiated or Homogeneous products or Both sometimes unique features make differentiation.
3) Entry & Exit restrictions	Free Entry & Exit. (No restrictions)	Strong Barriers for Entry.	Free Entry & Exit (No restrictions)	Barriers to Entry. (legal, govt., technology..)
4) Control over price	All sellers are price takers.	Price maker but, supply cannot be controlled simultaneously	Some control over the price. freedom to fix the price & can enjoy profits	Price rigidity & Pricing decisions are interdependent. 1 seller's price influence other seller's price
5) Profits	Super profits are in short period. Normal profits in the long period.	Scope for super profits (everytime) in both periods.	No super profits in the long run.	Scope for larger profits

Price ↑ over long period

MACRO ECONOMICS

Macro Economics :- deals with aggregate / country problems.

Top 5 countries acc to GDP :-

US - 25 $
China - 18 $
Japan - 4.8 $
Germany - 4.3 $
India - 3.18 $ (3.3)

GNP - Gross National Products.
(value of services provided by citizens outside the country)

GDP - Gross Domestic Product
value of goods & services provided within the country.

How to measure GDP ?

per-capita Income/GDP : 2000 $ (India)

Higher GDP, Higher per-capita Income
more demand

(1) Expenditure approach.

Gross Domestic Product (GDP) :- Irrespective of citizenship

It is the market value of all officially recognized final goods & services produced within a country in a given period of time.

Highest Growth Rate in GDP :- 1) India 7%
2) China 4%
3) US 2%

Rule of 72 :-

growth rate $\frac{72}{9}$ = 8 years to double the investment

Inflation rate :- 4.78

High advertisement cost or specialized/ seasonal advertisements.
high selling cost due to heavy competition.
low selling cost (More advertisment is required)
No selling cost
6) Selling Cost

Expenditure Approach

It attempts to calculate GDP by evaluating the sum of all final goods & services purchased in an economy.

$Y = C + I + G + (X - M)$:- a standard equational representn of GDP.

C : Consumption (personal, in aggregate) ⇒ largest GDP component in the economy, consisting of private expenditures in economy.
↳ household final consumption expenditure
Personal expenditures : durable, non-durable goods & services

I : Investment (by corporates) ⇒ includes for instance, business investment in equipment, but doesn't include exchanges of existing assets.
Spending by households on new houses.
→ doesn't ~~include~~ mean purchase of financial products.

G : Government → welfare schemes, defence expenditure, infrastructure expenditure, purchase of weapons.
Direct transfers are not included

X-M : not only personal consumption, but also net exports.

X : gross exports

M : gross imports.

Income Approach

Total expenditure = Total income.

SR = exp + prof

» This approach looks at the final income in country.
these include :- wages, salaries and supplementary labor income ; corporate profits interest and miscellaneous investment income ; farmer's income ; management (by procuring all factors), remuneration ; income from non-farm unincorporated business.

Non-income taxes &
Indirect taxes minus subsidies are added to get from factor cost

Depreciation (or Capital Consumption Allowance)

Y = National Income + GST + Depreciation - subsidies
taxes (VAT).

Govt provide subsidies to help firms

Inflation

prices rising over time.

becomes difficult for common man
poverty ↑ses.

Causes :- strong economy
energy prices
govt policy - If taxes ↑ses inflation ↑ses

Positives :- economy grows
helps borrowers
higher paychecks ↓ salary ↑ses

Negatives :- higher expenses
too much ⇒ bad for growth
bad for lenders

DA : Dearness Allowance.
↳ calculated based on inflation.

⇒ Inflation is desirable upto a limit

14/11/2023
High inflation ⇒ cost of production ↑ses.
Effects every element of economy.
Growth rate is not possible.

More liquidity ⇒ More demand
↳ money flow

Monetary Policy

change the rate of liquidity

Inflation is kept under control by the Govt.

⇒ demand ↑ses. Product ↓ses ⇒ reasons for Inflation

Demand Pull

Reasons for Inflation

i) Demand pull
ii) Cost factor / cost-push :- increase in the cost of every I/P product
iii) Built-in : Org. internally manages salaries, wages (wage influence)
Ex) Wage Spiral Inc. in wages/salaries ⇒ SP ↑ses.

How is Inflation measured?

2 indices :-

(1) Consumer Price Index

(2) Wholesale Price Index

Controlling Inflation

1) Monetary Measures

(a) Credit control

(b) Demonetization of Currency.

money circulation ↓ses

economic activity ↓ses

2) Fiscal measures : highly effective for controlling govt expenditure personal consumption expend, private & public investment

(a) Reduction in unnecessary expenditure

(b) Increase in taxes

(c) Increase in savings

(d) Public debt : govt should borrow more for schemes to reduce money supply with the public.

3) Other measures :

(a) To increase production

(b) Rational wage Policy :

(c) Price control (restrictions on SP by govt. to control prices)

(d) Rationing

Money Supply (Total stock of money circulating in an economy)

Money = medium of exchange.

Money Supply is Currency in Circulation plus Deposits in Commercial Banks. → influence economy.

~~If GDP is doubled ⇒~~

Valuation and analysis of money supply is important.

helps economists to frame the policy or alter the existing policy.

Reserve Money (M0)

- central bank money, monetary base, base money, high-powered money.

- It is the base level for the money supply.

M_0 =

M1 (Narrow Money)

M1 = Currency with public + Deposit money of the public
(demand deposits with Banking sys + Other deposits with RBI)

M2:

M2 = M1 + Saving deposits with Post-Office savings banks.

M3: (Broad Money)

M3 = M1 + Time deposits with banking system + M2

M4: (total money supply)

M4 = M3 + All deposits with post office savings bank.
(excluding National Savings Certificate).

15/11/2023

Business Cycles / Trade cycles

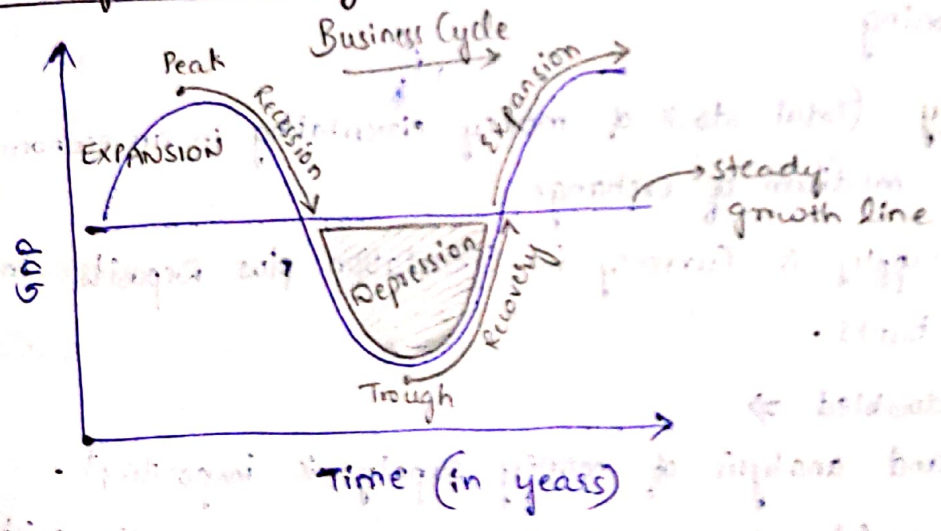
Cyclical fluctuations in the economic activity especially in employment, o/p & income, prices, profits etc. → ↑ses or ↓ses.

It is not related to individual.

There are both good phases and bad phases.
(boon/prosperous conditions) (slowdown/negative growth).

These phase occur periodically in every economy.

**** Phases of Business Cycles**



EXPANSION :- more beneficial.

1) Expansion :- (1st stage)

There is an ↑se in +ve economic indicators like—

» employment, income, o/p, wages, profit, demand & supply of goods & services

» debtors are generally paying their debt on time.

» velocity of money supply is high

» investment is high.

This process continues as long as economic conditions are favorable for expansion.

2) Peak :- (2nd stage)

The economy then reaches a saturation point, or peak. Maximum limit of growth is attained.

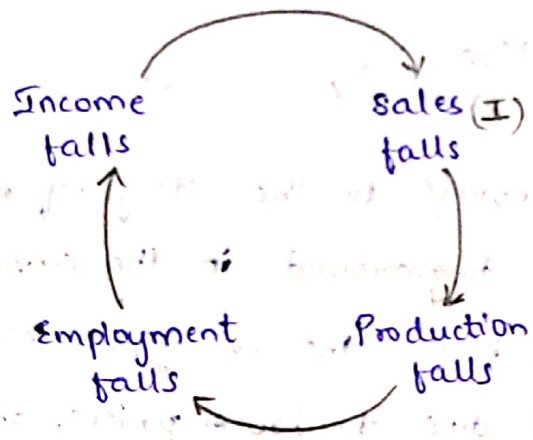
» Economic indicators do not grow further and are at their highest

» Prices are at their peak.

» This stage marks the reversal point in the trend of economic growth.

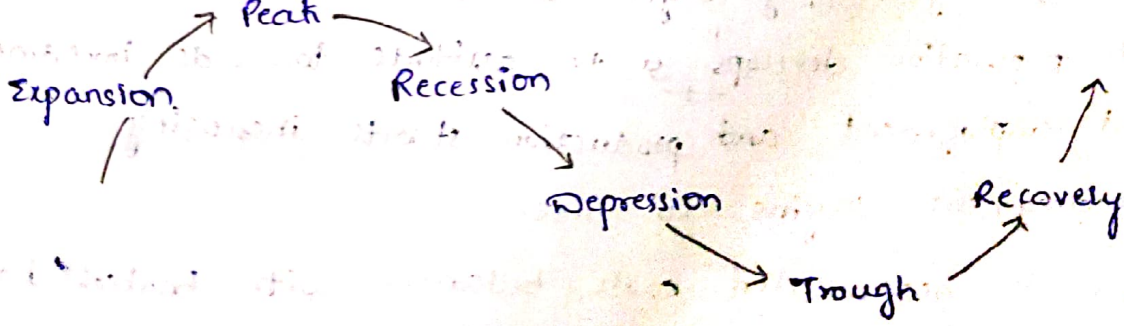
» Consumers tend to restructure their budgets at this point. (They try to allocate to others)

3) Recession :-



This cycle need to be broken. To Product^n is ↑sed and subsidies are provided to encourage industries. Otherwise, Recession period prolongs.

A virtual cycle



4) Depression :-

» It is characterised by rise in unemployment.

» The growth in economy continues to decline, and this falls below the steady growth line, the stage is called a Depression.

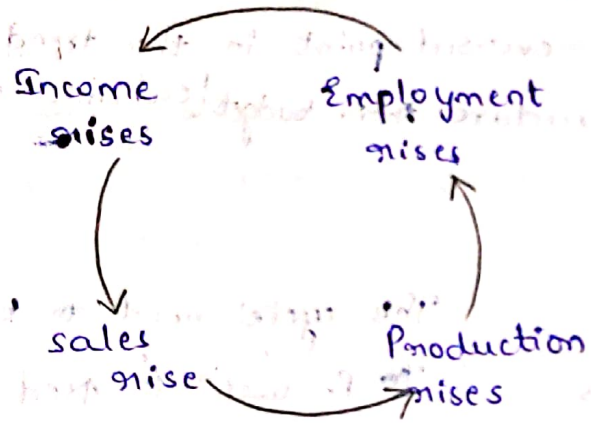
5) Trough :-

» In depression stage, economy's growth rate becomes -ve.

» There is further decline until the prices of factors, as well as the demand and supply of goods & services, contract to reach their lowest point.

» Economy eventually reaches the trough.

6) Recovery :-



This phase continues until the economy returns to steady growth levels.

After the trough, economy moves to the stage of recovery.

» In this phase, there is a turnaround in the economy, and it begins to recover from the -ve growth rate.

- Demand starts to pick up due to lower prices, and consequently supply begins to ↑se.
- The population develops a +ve attitude towards investment and employment and production starts increasing.
- Employment begins to rise.
- Due to accumulated cash balances with bankers, lending also show +ve signals.
- In this phase, depreciated capital is replaced, lending to new investments in the production process.

16/11/2023

UNIT – IV

Stakeholder :- the person who contributes in the development
owners, customers, suppliers, bankers, govt, local community, university, students

Management Accounting : records all the mgmt decisions.

Cost Accounting : assess all the cost related data & record the data.

Financial Accounting
Language of business, with which we communicate with stakeholders

By using Accounting principle, we records the details of debit & credit transactions.

→ Accounting is the process of recording, classifying (similar transactions are classified into groups) and summarizing the financial transactions and communicating the results to the interested parties (stakeholders) of a Business Concern.
Frauds can be identified by a company with this process.
Debit/ credit transaction errors can be identified.

Balance Sheet Format

Balance Sheet of — As at —

Liabilities	Rs.	Assets	Rs
Ex: Bank loan, pending expenses which are cleared in future		Ex: Furniture, land, valuable thing that is capable of generating income	

→ Expenditure includes all payments (Ex: salary, advertise, transportation)

→ Income is the benefit received in the form of money value for offering services. (Ex: Sale Income, Interest Income, Royalty Income)

Key Objectives of Accounting :-

1) Systematic Recording of Transactions.
2) Planning.
   Acctg helps to manage the use of resources
3) Decision making
4) Performance

Importance
Helps org. in achieving their objectives by providing a reliable framework.

21/11/2023 Journal is a DB used to record transaction.

Accounting Cycle :

Objectives/Importance of Financial Accounting (contin)

5) To identify the position of the business.

6) liquidity ⇒ tells the business ability to meet expenses.
good liquidity ⇒ can ~~pay~~ meet any expense easily.

7) Controlling the business in 4 steps.
step(1) : take targets/standards
(2) : monitoring the actuals
(3) : identifying the deviation ~~fro~~ of standards from actuals
(4) : making corrective actions.

8) Legal requirement to ensure to disclose the account periodically

9) Provides information for various stakeholders.

** Accounting Concepts (8) & ~~Conditions~~ Conventions (4) :

Concepts ⇒ assumptions & methods followed.
conventions ⇒ practices/traditions/customs

Accounting concepts (4)

1) Separate Entity Concept :-
Owners are diff
business is diff.
Once business is started; it enjoys the status (separate identity)

Individual Business
org. business of business from business with business with

2) Money Measurable Concept :-
transactions with no monetary value are removed from the book. with measurable value are recorded

3) Cost Concept :-
Actual cost of transaction
purchase cost

4) Going Concern Concept :-
Assumes that business contin
Ex:- Founders may not be pr
liquidator is appointed to chec
Owners enjoy assets but are

5) Dual Aspect Concept :-
Every transaction must have min

6) Realization concept :-
→ when value is realized, only
→ when ownership is transferred
the value is realized.

7) Accounting Period Concept :-
Business results are identi
⇓
sales, profits, assets,

June 30
Sept 30
Dec 31
March 31
} Quarterly results
close accounts e
↳ to reduce

8) Periodical Matching Concept :-
match the expenses ~~and~~ with i

Accounting Conventions

1) Full disclosure convention :-
disclose every info.
never hide info in records.

2) Consistency :-
accounting must follow rule
Same principles must be f

3) Conservatism :- Accountant ca
this, he should provide all

4) Materialism :- only material
This is against the

3) Cost Concept :-

Actual cost of transaction is recorded; but not market cost.
purchase cost

4) Going Concern Concept :-

Assumes that business continues forever.

Ex:- Founders may not be present but, the business continues liquidator is appointed to check assets & liabilities.

Owners enjoy assets but are not responsible for liabilities.

5) Dual Aspect Concept :-

Every transaction must have min of two accounts — debit / credit.

6) Realization concept :-

→ when value is realized, only then record that value.

→ when ownership is transferred or when payments are made; the value is realized.

7) Accounting Period Concept :-

Business results are identified with a periodic time. accordingly;
sales, profits, assets, liabilities

June 30
Sept 30
Dec 31
March 31

close accounts every month
Quartely results are identified & recorded.
↳ to reduce malpractices

8) Periodical Matching Concept :-

match the expenses ~~and~~ with incomes concerned. (within a period of time)

Accounting Conventions

1) Full disclosure convention :-

disclose every info.
never hide info in records.

But in reality :-
secrets are maintained.

2) Consistency :-

accounting must follow rules to be in consistency.

Same principles must be followed ~~(every year)~~ for every year (throughout)

3) Conservatism :- Accountant can anticipate the income. Prior to this, he should provide all possible laws.

4) Materialism :- only material issues should be disclosed.

This is against the Full disclosure Convention.

22/11/2023 Transactions take place in the [illegible] not owner.

account ⇒ summary of transactions.

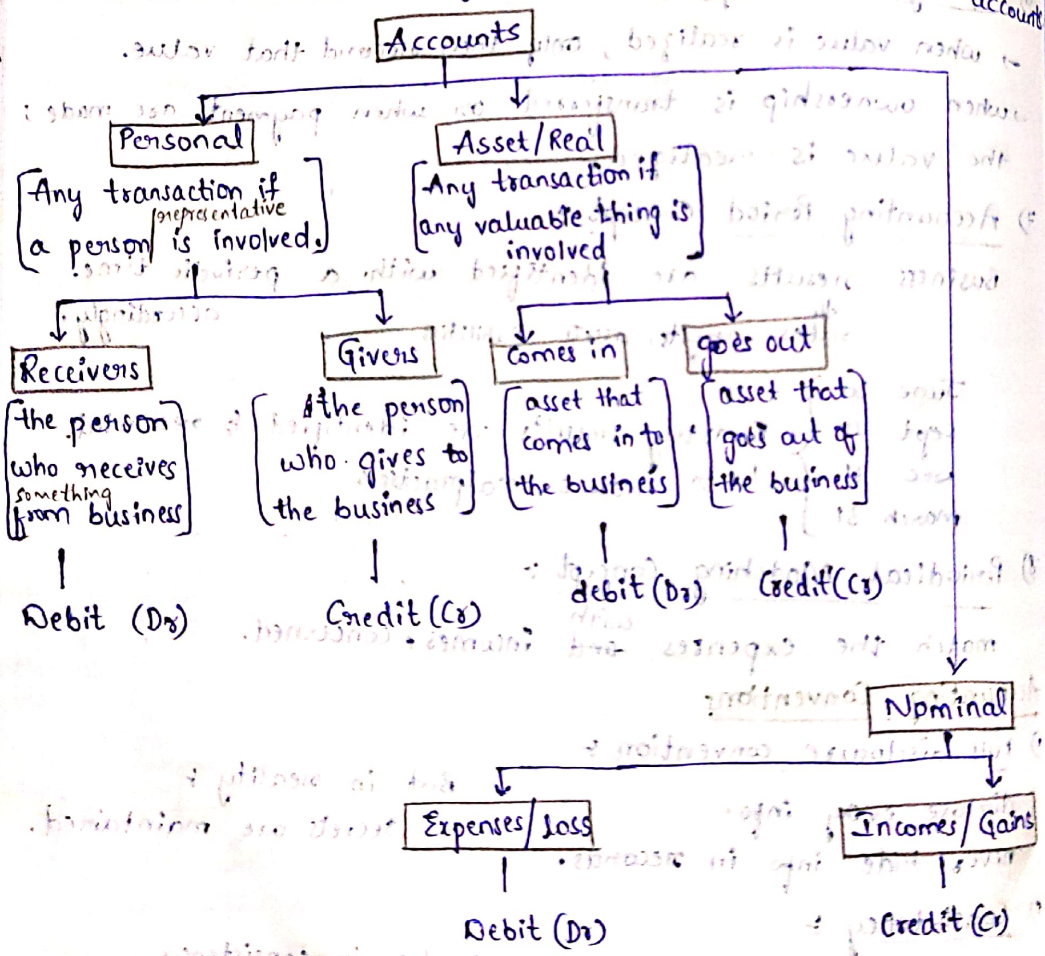
ledgers ⇒ group of accounts

Stages of Accounting Cycle

1) Journalizing
2) Ledgers Format
3) Trial Balance
4) Financial Statement.

Accounting Rules

Transactions are classified into group of categories of accounts



Ex:- → 1st Apr 2023 [cash] received

→ 2nd Apr 2023 sold [goods]

→ 3rd Apr purchase mac

cash Rs: 2

→ 4th Apr cash deposi

→ asset

4th Apr 2023 Bank A/C

To ca

salaries

salaries A

To c

Rent po

→ exp

Rent

To

Journal :-

Journal is a book to in

Q) from the following. t

prepare the Journal

(cash comes

1st Apr 2019 started b

2nd Apr 2019 purchased

3rd Apr 2019 purchased

5th Apr 2019 Rent pai

5th Apr 2019 wages p

6th Apr 2019 purchase

vino

7th Apr 2019 sold goo

8th Apr 2019 paid to

in full

10th Apr 2019 cash sal

Ex:- → 1st Apr 2023 — cash received from Shyam → person ⇒ Giver (Cr)

→ 2nd Apr 2023 — sold goods to Shyam → person ⇒ Receives (Dr)
goods → asset ⇒ goes out (Cr)

→ 3rd Apr — purchase machinery by paying cash Rs: 1 lakh
machinery → comes in
cash → goes out

→ 4th Apr — cash deposited into bank → person ⇒ Receiver (Dr)
cash → asset ⇒ goes out from usa (Cr)

4th Apr 2023	Bank A/C Dr	1,00,000
	To cash A/C Cr	

salaries paid ₹50,000
salaries → expense for business
cash ⇒ goes out (Cr)

salaries A/C Dr	₹50,000	
To cash A/C Cr		

Rent paid ₹ 10,000
Rent → expense ⇒ (Dr)
cash ⇒ goes out (Cr)

Rent A/C Dr	₹10,000	
To cash A/C Cr		

Journal :-

Journal is a book in which we record transactions.

Q) from the following transactions of Harish & co. prepare the Journal

1st Apr 2019	started business with (cash comes into the business) ₹1,50,000	⇒ cash A/C (Dr), capital A/C
2nd Apr 2019	purchased machinery	₹ 25,000
3rd Apr 2019	purchased materials	₹ 20,000
5th Apr 2019	Rent paid	₹ 5000
5th Apr 2019	wages paid	₹ 10,000
6th Apr 2019	purchased materials from vinod & co on credit	₹10,000
7th Apr 2019	sold goods to Raj & co	₹40,000 on credit
8th Apr 2019	paid to vinod & co through cheque in full settlement	₹9,500 (500 is discount received (Cr))
10th Apr 2019	cash sales	₹ 5000

10th Apr 2019 cheque received from Raj & Co in full settlement ₹5000. 2000 discount given (Expense)

12th Apr 2019 cash deposited to bank

Journal of Harish & Co

23/11/2023

Date	Particulars	L.F (Ledger folio) No	Debit (₹)	Credit (₹)
1st Apr 2019	Cash A/c Dr To Capital A/c (Cr) (started Business)	- -	150000	150000
2nd Apr 2019	Machinery A/c Dr To Cash A/c Cr (machinery is being purchased)	- -	25000	2500
3rd Apr 2019	Purchases A/c Dr To Cash A/c Cr	- -	20000	20000
5th Apr 2019	Rent A/c Dr To Cash A/c Cr	- -	5000	5000
5th Apr 2019	Wages A/c Dr To Cash A/c Cr	- -	10000	10000
6th Apr 2019	Purchases A/c Dr To Vinod & Co A/c Cr	- -	10000	10,000
7th Apr 2019	Raj & Co A/c Dr To Sales A/c Cr	- -	40000	40,000
8th Apr 2019	Vinod & Co A/c Dr To Bank A/c Cr To Discount A/c Cr	- - -	10,000	9500 500
10th Apr 2019	Cash A/c Dr To Sales A/c Cr	- -	5000	5000
10th Apr 2019	Bank A/c Dr Deposit A/c Dr To Raj & Co Cr	- - -	38000 2000	40,000
12th Apr 2019	Bank A/c Dr To Cash A/c Cr	- -	5000	5000

Ignore insignificant

1st Apr : cash comes into the business ; person gives.

cash A/c - Dr - 150000

Capital A/c - Cr - 150000

→ represents a person

2nd Apr : machinery comes in ; cash goes out

Machinery A/c - Dr

cash A/c - Cr

3rd Apr : purchase is expenditure (that comes in); cash goes out from business.

(coz; materials are purchased very often) material / Purchases

cash A/c

[Machinery is not purchased often. It is considered as Investment]

5th Apr : rent is expenditure ; cash goes out

wages is expenditure ; cash goes out (for business)

6th Apr : purchases are expenditure

vinod is giver

7th Apr : sales is Income/Gain ; Raj is receiver

(Cr) good / sales (Dr)

8th Apr :

Bank is always person

vinod A/c (receiver) Dr

cheque → Bank A/c (giver) Cr

~~Incom~~ Discount A/c (Income/Gain) Cr

10th Apr : sales ⇒ Income ; cash goes out.

sales A/c - Cr

cash A/c - Dr

10th Apr :

Raj (giver) Cr

(cheque) Bank (receiver) Dr

deposit (loss) Dr

12th Apr :

Bank A/c (receiver) Dr

Cash A/c (goes out) Cr

Ledger

contains multiple accounts

brought down

Dr | Cr

Date	particulars	J.F No	Amount (₹)	Date	particulars	J.F No	Amount ₹

We identify balance by using ledgers.

Source is Journal.

5/12/2023

Cash Account

Dr | Cr

Date	Particulars	J.F No	Amount (₹)	Date	Particulars	J.F No	Amount (₹)
1st Apr	To capital A/c	-	150000	2nd Apr	By Machinery A/c	-	25000
10th Apr	To Sales A/c	-	5000	3rd Apr	By Purchases A/c	-	20000
				5th Apr	By Rent A/c	-	5000
				5th Apr	By wages A/c	-	30000
				12th Apr	By Bank A/c	-	5000
				30th Apr	By Balance c/d		70,000
			155000				155000

Capital Account

Dr | Cr

Date	Particulars	J.F No	Amount (₹)	Date	Particulars	J.F No	Amount (₹)
				1st Apr	By cash A/c	-	150,000
30th Apr	To Balance c/d		1,50,000				
			1,50,000				1,50,000

Machinery Account

Dr | Cr

Date	Particulars	J.F No	Amount (₹)	Date	Particulars	J.F No	Amount (₹)
2nd Apr	To Cash A/c		25,000				
				30th Apr	By Balance c/d		25,000
			25,000				25,000

Trial Balance

Trial Balance is a sta
statements that records fin
business on the last day o

Features of Trial Balance.

» It consists a list of diff
balances both debit & cred
» Preparation of a trial b
mathematical accuracy of
» It ensures that proper
» It provides data for pr
or final accounts with sim

Trial B

S.No	Account Name	De
1.	Cash A/c	
2.	Machinery A/c	
3.	Capital A/c	
4.	Wages A/c	
5.	Sales A/c	

6/12/2023

Account : summary of tr

Total 6 types of account
But,
Expen. & assets
Incomes & liabilities

Ex:

→ Purchased raw material f
So, it is Liability

→ Sold material to A
Here, it is Asset

Trial Balance

Trial Balance is a statement which is a part of financial statements that records final balances of ledger accounts of a business on the last day of the financial year.

Purpose :
→ To rectify the errors

Features of Trial Balance.

» It consists a list of different accounts of general ledger balances both debit & credit amounts.

» Preparation of a trial balance allows a business to check the mathematical accuracy of ledger balances.

» It ensures that proper posting of ~~ledg~~ general entries into the ledger.

» It provides data for preparation of financial statements or final accounts with single source.

Trial Balance

S.No	Account Name	Debit (₹)	Credit (₹)
1.	Cash A/c	xx	
2.	Machinery A/c	xx	
3.	Capital A/c		xxx
4.	Wages A/c	x	
5.	Sales A/c		xx
		xxx	xxx

Debit has all expenses & assets.
Credit has all liabilities & incomes

6/12/2023

Account : summary of transactions related to particular transaction.

Total 6 types of accounts.

But,

Expen. & assets } only these 4 are included in Trial Balance
Incomes & liabilities

Ex:

→ purchased raw material from A, but money is not paid by us.
So, it is Liability to them

→ Sold material to A, but money is not given by A
Here, it is Asset to us.

Q) Prepare a trial balance as on 31-12-2022 from the following data.

Sundry debtors (all types of debtors who take credit from us they pay in future to us. (business gives credit facility) Hence, it is Asset)	₹ 32,000	
stock 1-1-2022	₹ 22,000	opening stock => Asset
sales	₹ 2,34,500	sales => Income to us =>
cash in hand	₹ 35	Asset
cash at bank	₹ 1,545	Asset
Plant & machinery	₹ 17,500	Asset for business.
purchases	₹ 2,18,870	Expenditure
Sundry creditors (who given credit to us. we pay in future to them. We are Liable to them. Hence, it is Liability)	₹ 10,650	
Trade expenses	₹ 1,075	Expenditure
salaries	₹ 2,225	Expenditure (for us)
carriage outward (→ transportation cost to send goods)	₹ 400	Expenditure
rent	₹ 900	Expenditure
bills payables (→ we need to clear bills in future)	₹ 7,500	Liability
capital (→ representative to a person.)	₹ 79,500	Liability (owner contributes money to business)
discount (Dr) (→ is given)	₹ 1,100	Expenditure
furniture	₹ 34,500	Asset for business

carriage hum

bills receivable → Asset.

Bank overdraft Liability

Ans:- Trial Balance of ____ as on 31-12-2022

S.NO	Account Name	Debit (₹) (Expenses + assets)	Credit (₹) (incomes + liability)
1.	Sundry debtors	32,000	
2.	stock 1-1-2022	22,000	
3.	sales		2,34,500
4.	cash in hand	35	
5.	cash at bank	1545	
6.	plant & machinery	17,500	
7.	purchases	2,18,870	
8.	Sundry creditors		10,650
9.	Trade expenses	1075	
10.	salaries	2225	
11.	carriage outward	400	
12.	rent	900	
13.	bills payable		7500
14.	capital		79500

15.	discount (Dr)	1100	
16.	furniture	34500	
		3, 32, 150	3, 32, 150

Financial Statements

~~Credit~~ Trading Account → Gross ~~product~~ profit $\boxed{\text{sales-purchases}}$

Profit & Loss Account → Net profit (Net income)

Balance Sheet → Liabilities and Assets.

buying & selling ← Trading Account of XYZ ltd.

for the year ending 31.03 xxxx

Source is Trial Balance.

Dr | Cr

Particulars	Amount (₹)	Particulars	Amount (₹)
To opening stock	xx	By sales xxx	xxx
To purchases xx		(-) sales returns x	
(-) purchase returns	xx	By closing stock	xx

7/12/2023

Q) From the following trial Balance of AB ltd, prepare financial statements ie, trading account, profit & loss account and Balance sheet for the year ending 31-03-2021.

Account Name	Debit (₹)	Credit (₹)
Salaries	1,60,000	
Sales		12, 80,000
carriage outwards	15,000	
direct expense ← wages	80,000	
advertisements	30,000	
carriage inwards	20,000	
purchases	6, 80,000	
opening stock — stock (1-4-2020) start of year	2, 20,000	
asset plant & machinery	5,00,000	
liability capital amt contributed by owners		12,00,000
land & buildings	12, 00,000	
sales returns	80,000	

	purchase returns		30,000
Income	Interest received		85,000
expenditure	rent	60,000 (paid)	
expen.	commissions	40,000 (paid)	
	general expenses	10,000	
asset	cash balance	1,10,000	
liability	bank overdraft (excess money drawn) → temp loan		10,000
	bank loan		5,00,000
expen.	interest paid	50,000	
Income	royalty received		1,50,000
		32,55,000	32,55,000

Additional Information/adjustments.

1. closing stock (asset) as on 31-03-2021 ₹ 3,00,000
2. provide depreciation on plant & machinery @ 10% per annum (decrease in the amount due to continuous usage)

Sol:-

Trading account of AB Ltd

for the year ending 31-03-2021

Dr Cr

Particulars	Amount (₹)	Particulars	Amount (₹)
(all direct expenses of raw materials transportation)		(all incomes)	
To opening stock	2,20,000	By sales 12,80,000	12,00,000
To purchases 6,80,000		(-) sales returns 80,000	
(-) purchase returns 30,000	6,50,000		
		By closing stock	3,00,000
To wages	80,000		
~~carrio~~ To carriage inwards	20,000		
			~~15,00,000~~
To Gross profit (diff b/w sales & purchases. not the actual profit)	5,30,000		
	15,00,000		15,00,000

Profit & Loss Account of AB Ltd

for the year ending 31-3-2021

Dr | Cr

Particulars	Amount	Particulars	Amount
all expenses that are not covered under trading account		(all incomes) By Gross profit	5,30,000
To salaries	1,60,000	By Interest received	85,000
To carriage outwards	15,000		
To advertisements	30,000		
To rent	60,000		
To commissions	40,000		
To general expenses	10,000		
To interest paid	50,000		
To Depreciation on plant & machinery $500000 \times \frac{10}{100}$	50,000		
To Net profit	3,50,000		
	7,65,000		7,65,000

13/12/2023

Balance sheet of AB Ltd

As on 31-03-2021

Or

Liabilities	Amount	Assets	Amount
capital after capital take net profit	12,00,000	Plant & Machinery 5,00,000	4,50,000
Net profit belongs to owner payment is not paid still. so, it is taken as liability	3,50,000	(-) depreciat^n 50,000	
		Land & buildings	12,00,000
bank overdraft	10,000	cash balance	1,10,000
bank loan	5,00,000	closing stock	3,00,000
	20,60,000		20,60,000

prepare gross profit & selling and distribution ratio

good will, bank balance ⇒ invisible assets.

opening stock no longer exists at the year end. So, it is only taken in Trading account.

→ Items in Trial Balance are taken only once

→ Additional info are taken twice

closing stock ⇒ unsold stock that is left over. This can be used in future so, it becomes asset in Balance sheet

Q) Following is a Trial Balance of PQR Ltd on 31-12-2009. Prepare Trading, Profit & loss accounts and Balance sheet in the prescribed form.

S.No	Account Name	Debit (₹)	Credit (₹)
liability	share capital		1,58,000
	stock on (1-1-2009)	51,000	
	Purchases (in debit) & sales (in credit)	2,20,000 (purchases)	3,30,000 (sales)
	returns (given in debit so, sales returns)	3,800	
exper	general expenses	1,800	
	wages	12,000	
	Salaries exp	18,700	
after manufacturing	Travelling expences	3,200	
	Advertisements	1,550	
	Rent & taxes	4,900	
Income	Discount received		2,200
exp.	Bank interest	850	
	(less) Bad debts	2,500	
asset	Land & buildings	95,000	
asset	Plant & machinery	98,000	
	Sundry debtors & creditors	45,000	55,500
	Loan		14,000
asset	cash	1,400	
		5,59,700	5,59,700

Adjust the following :-

1. closing stock as on 31-12-2009 ₹ 12,000
2. provide depreciation on buildings @ 5%.
3. Depreciate plant & machinery @ 10%.

If Payable salaries are given here, add it to existing salaries

Sol:

Trading account of PQR, Ltd

for the year ending ~~31-03~~ 31-12-2009

Dr | Cr

Particulars	Amount (₹)	Particulars	Amount (₹)
expend related to manufacturing			
To opening stock	51,000	By sales 3,30,000	3,26,200
To purchases	2,20,000	(-) returns 3,800	
To wages	12,000	By closing stock	12,000
To Gross profit	55,200		
	3,38,200		3,38,200

Profit & Loss account of PQR Ltd

for the year ending 31-12-2009

Dr | Cr

Particulars	Amount (₹)	Particulars	Amount (₹)
To General expenses	1,800	By Gross profit	55,200
To Salaries	18,700	By Discount received	2,200
To Travelling expenses	3,200		
To Advertisements	1550		
To Rent & Taxes	4,900		
To Bank Interest	850		
To Bad debts	2,500		
To Depriciation on Building	~~4750~~ 5% of 95000		
To Depriciation on Plant & Machinery	9800 10% of 98000		
	~~57,400~~		~~57,400~~
To Net profit	9,350		
	57,400		57,400

Balance sheet of PQR Ltd

As on 31-12-2009

Liabilities	Amount(₹)	Assets	Amount(₹)
Share capital	1,58,000	Land & buildings 95,000	90250
Net profit	9,350	(-) Depreciatn 4750	
Sundry creditors	55,500	Plant & machinery 98000	88200
loan	14000	(-) Depreciatn 9800	
		Sundry debtors	45,000
		cash Balance	1400
		closing stock	12000
	236850		236850

Q) From the following Trial Balance of Blue lines Ltd, Prepare final accounts for the year ending 31-12-2021.

Account Name	Debit (₹)	Credit (₹)
sales		13,00,000
Frieght inwards (carriage inwards)	15000	
wages	23,000	
advertisements	45,000	
fuel & power	20,000	
purchases	8,00,000	
stock 1-1-2021	1,50,000	
plant & machinery	10,00,000	
debtors & creditors	50,000	1,00,000
capital		16,00,000
Land & buildings	10,00,000	
Bank debts	10,000	
purchase returns		50,000
discount received		70,000

salaries	1,20,000	
commissions	40,000	
donations for charity	20,000	
Bank balance	3,00,000	
Bills payables		10,000
Bank loan		6,00,000
Interest paid	80,000	
	37,30,000	37,30,000

Additional I

1. closing stock – ₹2,00,000
2. provide depreciation 10% on plant & machinery
   5% on land & buildings.
3. outstanding wages – ₹20,000

Sol:- Trading account of Blue lines Ltd for the year ending 31-12-2021

Dr | Cr

Particulars	Amount (₹)	Particulars	Amount (₹)
To opening stock	1,50,000	By sales	13,00,000
To purchases ~~8,00,000~~ (-) 8,00,000		By closing stock	2,00,000
~~To wages~~			
(-) purchase returns 50,000	7,50,000		
~~To wages~~	~~15,000~~		
To frieght inwards	15000		
To wages 80000			
(+)	1,00,000		
To outstanding 20,000			
To fuel & power	20,000		
	10,35,000		
To Gross profit	4,65,000		
	15,00,000		15,00,000

Profit & Loss Account of Blue lines Ltd

for the year ending 31-12-2021

Particulars	Amount (₹)	Particulars	Amount (₹)
To advertisements	45000	By Gross profit	4,65,000
To depreciation on plant & machinery	10,0000	By discount received	70,000
To depreciation on land & building ($\frac{5}{100} \times 10,00,000$)	50,000		
To Bank debts	10,000		
To salaries	1,20,000		
To commission	40,000		
To donations	20,000		
To interest paid	80,000		
	4,65,000		
To Net profit	70,000		
	5,35,000		5,35,000

Balance sheet of Blue lines Ltd

As on 31-12-2021

Liabilities	Amount (₹)	Asset		Amount (₹)
capital	1600000	plant & machinery	1000000	900000
Net profit	70000	(-) depr	100000	
creditors	100000	land & buildings	1000000	950000
Bank loan	600000	(-) depr	50000	
Bills payables	10000	Debtors		50000
outstanding wages	20,000	Bank Balance		300000
		closing stock		200000
	24,00,000			24,00,000

16/12/2022

UNIT - 5

compare net profit with that of another company or investment or previous year's profit

Financial Analysis :- It is the process of determining the strengths and weaknesses of a business by setting the strategic relationship b/w the items of financial stmts like Trading A/c, profit & loss A/c and Balance sheet.

$\frac{\text{gross profit}}{\text{sales}}$ ⇒ profit %

₹ 16,00,000 invested
But, net profit is ₹ 70,000 } ⇒ indicates weakness of the company

Tools / Types of Financial Analysis

1) **Comparative Statements**

compare various stmts over a period of time.
(identify how the sales, profit are changing)
ie, identify the trends to know the performance change over a period

2) **Common size statements**

compare performance of one company with that of another company, only if the both have same numbers of investment & gross profit
But
calculate the profit % to compare performance, by standardizing

3) **Cash flow Analysis**

analyze cash inflow (from) into (cash outflow) the business

more cash outflow ⇒ indicates that the company earns profits in future

Sales − purchases = profit

4) **Ratio Analysis**

Ratio Analysis :- (expression of relationship b/w two numbers in several ways)

» Ratio Analysis is the tool of financial analysis to analyze the business performance and position for the given period by comparing the items of financial stmts within the year, b/w the years and with other similar companies.

Uses of Ratio Analysis :-

» Ratios help in analysis of performance trends over a long period of time.

» They also help a business to compare the financial results with the competitors.

» Ratios assist the management in decision making.

» They also point out problem or weak areas along with the strength areas.

» Ratios ~~to~~ helps, to develop the relationship b/w the different financial stmts' items.

» They have advantage of controlling for differences is size i.e, different size financial statements can be easily compared.

Users of Ratio Analysis :-

Drawbacks
- i.e. highly depend on financial stmts
- We cannot take other insights

1) **Bankers and Lenders**

→ They provide loans to the company.

→ They use various ~~loans~~ ratios to sanction loan

→ They analyze all the factors & performance of company & come to a conclusion whether the company could be able to pay it with interest.

2) **Investors**

→ use ratios to invest into the company.

3) **Government**

→ govt gets tax revenue from the company.

→ they analyze performance of company by using ratios.

4) **Employees**

→ use ratios to know the performance & future of company. Based on this, they decide whether or not to join or leave the company.

5) **Customers / Clients**

→ use company's products

→ they need to know performance to continue their service to company. Hence, they use ratios.

6) **Suppliers**

→ use ratios and they decide to supply raw materials on credit basis

→ They identify whether a company has sufficient liquidity. Based on this, they supply materials.

7) Management
→ use ratios for making decisions.

Types of Ratios (4 categories)

1) Profitability ratios
2) Liquidity ratios
3) Turn over / activity ratios
4) Solvency ratios

Dividend
Distribution of profit

19/12/2023

① Profitability ratios

(1) Gross profit ratio = $\frac{\text{gross profit}}{\text{sales}} \times 100$ → from trading A/c

(2) Net profit ratio = $\frac{\text{net profit}}{\text{sales}} \times 100$ → from trading A/c; net profit → from profit & loss A/c

(3) Operating profit ratio = $\frac{\text{operating profit}}{\text{sales}} \times 100$

operating profit = Net profit + non-operating expenses − non-operating incomes
↳ profit earned from business operations
(income from lottery)

(4) Earning per share (EPS) = $\frac{\text{Net profit after tax}}{\text{no. of shares}}$
(every shareholder earns equal amt of share every year)

no. of shares = $\frac{\text{total share capital}}{\text{face value of share}}$ ⇒ at which price shares are

(5) P/E ratio (price/Earning) = $\frac{\text{market value of share}}{\text{EPS}}$ $\frac{1500}{100}$

✓ Dividend Income
✓ Appreciation of share value

(15 times premium is paid)

P/E ratio should be less
↳ tells business whether or not to invest.

② Liquidity ratios (Excess liquidity is not good)

(6) current ratio = $\frac{\text{total current assets}}{\text{total current liabilities}}$ = 2:1

useful to creditors &

current assets are those assets which can be convertable into cash immediately or within one year.

Plant/machinery, land/buildings cannot be easily converted (Fixed Assets)

closing stock, bank balance, debtors can be easily converted. (Current Assets)

Assets which cannot be converted into cash immediately or within one year are called Fixed Assets

current liabilities are those liabilities which are need to be repaid immediately or within one year (or) short term liabilities (Bank overdraft)

Otherwise, they are called Long term liabilities (Bank loan)

Total current Assets:

- closing stock
- debtors
- bills receivables
- short term investments
- cash balance
- bank balance
- pre-paid expenses.

Ex: If 15 months rent is paid
12 months' rent is exp. | 3 months' rent is pre-paid

Total current liabilities:

- creditors
- bills payables
- short terms loans
- Bank overdraft
- outstanding expenses (wages).

Current assets must be double of the current liabilities.

Hence, ratio is 2:1.

Current ratio Tells liquidity capacity of the business

(7) Quick ratio (or) Acid test ratio $= \frac{\text{Total quick assets}}{\text{Total current liabilities}} = 1:1$.

Quick assets are the current assets which can be easily converted into cash.

Quick assets = total current assets − (closing stock + pre-paid expenses)

(takes more time to convert) | cannot be converted into cash.

cash balance
bank balance
Absolute liquid ratio

③ Turn over / Activity ratios

(8) Stock turn over ratio (or) Inventory turn over ratio $= \frac{\text{cost of goods sold}}{\text{average stock}}$

cost of goods sold = sales − Gross profit

average stock $= \frac{(\text{opening stock} + \text{closing stock})}{2}$ from trading A/c

(9) Debtors turnover ratio $= \frac{\text{credit sales (or) sales}}{\text{average debtors}}$

average debtors $= \frac{\text{opening debtors} + \text{closing debtors}}{2}$

Items in balance sheet are closing values

closing debtors of previous year become opening debtors of current year.

In ques. if prev. balance sheet is not given, then

average debtors $= \frac{\text{debtors}}{2}$

Solvency ratios

(10) debt-equity ratio $= \frac{\text{total debt}}{\text{total equity}}$ (or) $\frac{\text{outsider funds}}{\text{owner's funds}}$ → long term → should be more

preferable ratio < 1
⇒ less risky business | 1 indicates both are same

10/12/2023

Q) The Trading and profit & loss A/c and Balance sheet of ABC Ltd for the year 31-03-2019 is given below, market price of share is ₹105.

Particulars	Amount (₹)	Particulars	Amount (₹)
To opening stock	76,250	By sales	5,00,000
To purchase	3,15,250	By closing stock	98,500
To carriage inwards	2,000		
To wages	5,000		
To Gross profit	2,00,000		
	5,98,500		5,98,500
To Admin expenses	~~1,00,1~~ ~~1,00~~ 1,01,000	By Gross profit	2,00,000
To selling and distribution expenses	12,000	By non-operating incomes	
To non-operating expenses	2000	(i) Interest on securities	1,500
To financial expenses	7000	(ii) Dividend on shares	3,750
To net profit	84,000	(iii) Profit on sale of shares	750
	2,06,000		2,06,000

Balance sheet of ABC Ltd
as on 31-03-2019

Liabilities	Amount (₹)	Assets	Amount (₹)
Equity share capital (face values of ₹10)	2,00,000	Plant & machinery	1,25,000
Net profit (belongs to owners)	84,000	Land & building	1,75,000
Bank loan	1,24,000	Debtors	1,60,000
Creditors	16,000	Cash in hand	19,000
		closing stock	98,500

Bank overdraft	1,00,000	pre-paid expenses	1500
Bills payables	50,000		
	5,70,000		5,70,000

Calculate :-

(1) Gross Profit ratio
(2) Net profit ratio
(3) Operating profit ratio
(4) EPS
(5) P/E ratio
(6) Stock turn-over ratio
(7) debtors turn-over & debt. collection period
(8) Current ratio
(9) Quick ratio
(10) Debt Equity ratio

① Gross profit ratio $= \frac{\text{Gross profit}}{\text{sales}} \times 100$

$\Rightarrow \frac{2,00,000}{5,00,000} \times 100 = 40\%$

② Net profit ratio $= \frac{\text{Net profit}}{\text{sales}} \times 100$

$\Rightarrow \frac{84,000}{5,00,000} \times 100 = \frac{84}{5} = 16.8\%$

③ Operating profit ratio $= \frac{\text{operating profit}}{\text{sales}} \times 100$

operating profit = Net profit + non-operating expenses - non-operating incomes

$\Rightarrow$ operating profit $= (84000) + (2000) - (1500 + 3750 + 750)$
$= 80,000$

Now,

operating profit ratio $= \frac{80000}{5,00,000} \times 100 = 16\%$

$\boxed{\text{Operating ratio} = 100 - \text{operating profit ratio}}$

④ EPS $= \frac{\text{net-profit after tax}}{\text{no. of shares}}$

no. of shares $= \frac{\text{total share capital}}{\text{face value of share}}$

$\Rightarrow$ no. of shares $= \frac{2,00,000}{10} = 20,000$

Now, EPS $= \frac{84,000}{20,000} = ₹4.2$

⑤ P/E ratio $= \frac{\text{market value of share}}{\text{EPS}}$

$\Rightarrow \frac{105}{4.2} = \frac{105}{4.2} \times 10 = 25$ times

⑥ Stock turn-over ratio $= \frac{\text{cost of goods sold}}{\text{average stock}}$

cost of goods sold = sales - gross profit

$= 5,00,000 - 2,00,000 = 3,00,000$

average stock $= \frac{\text{opening stock + closing stock}}{2}$

$= \frac{76250 + 98500}{2}$

$= \frac{174750}{2} = 87375$

Now,

stock turn-over ratio $= \frac{3,00,000}{87375} = 3.4$ times

⑦ Debtors turn-over ratio $= \frac{\text{credit sales (or) sales}}{\text{average debtors}}$

average debtors $= \frac{\text{opening debtors + closing debtors}}{2}$

$= \frac{1,60,000}{2} = 80,000$

Now, debtors turn-over ratio $= \frac{5,00,000}{80,000} = 6.25$ times

$\boxed{\text{Debt Collection period} = \frac{365 \text{ days}}{\text{debtors turn-over}}}$

on avg., it takes 59 days to collect debts

$= \frac{365}{6.25} = 58.4$ days $\simeq 59$ days.

⑧ current ratio $= \frac{\text{total current assets}}{\text{total current liabilities}}$

current assets		current liabilities	
• debtors	= ₹1,60,000	• creditors	= ₹16,000
• cash in hand	= ₹10,000	• ~~bills~~ Bank overdraft	= ₹1,00,000
• closing stock	= ₹98,500	• Bills payables	= ₹50,000
• prepaid expenses	= ₹1500	Total current liabilities	= ₹1,66,000
Total current assets	₹2,70,000		

Now, current ratio $= \frac{2,70,000}{1,66,000} = 1.62 : 1$ → not satisfactory

→ To improve the liquidity ratio, increase current assets & decrease current liabilities

(9)

(9) Quick ratio $= \frac{\text{Total quick assets}}{\text{Total current liabilities}}$

Quick assets = Total current assets − (closing stock + pre-paid expenses)

$= 2,70,000 - (78,500 + 1500)$

$= 1,70,000$

Now, Quick ratio $= \frac{1,70,000}{1,66,000} = 1.02 : 1$

→ Indicates that the company has satisfactory liquidity ratio

(10) Debt equity ratio $= \frac{\text{total debt}}{\text{total equity}}$

debts :-
- Bank loan = ₹1,24,000

equity funds :-
- equity share capital + net profit $= 2,00,000 + 84,000$
$= 2,84,000$

Now, Debt equity ratio $= \frac{1,24,000}{2,84,000} = 0.43 < 1$ satisfactory

→ Business is less risky.

Significance of ratios

Current ratio

useful to creditors, lenders, bankers

Quick ratio

useful to creditors, lenders, bankers

Debt equity ratio

tells abt how much funds are available with owners & how much funds are taken from bankers.

useful for investors.

depending upon debt equity ratio, they decide whether or not to invest.

Stock turn over ratio.

useful for management to assess its performance.

If high performance :- debt collection period is low

Background prev invoice sales trend

Gross profit ratio (should be high).

every stakeholder concerns for the high profits.

Earning per share (should be more)

compare net profit

useful for investors.