Unit-I

Ratio :- The one variable is divided by the another variable called Ratio. Ratio is expressed in percentage, proportions and quotients also. (a:b)

Types of Ratio :-

1. Liquidity
2. Activity / Turnover
3. Solvency / Leverage
4. profitability

1. Liquidity :- These are present hand cash. These Ratio's are used to determine short-term solvency of the firm.

liquidity is of two types

a. Current Ratio b. Quick Ratio

a. Current Ratio :- It is the ratio between current assests and current liasilites

$$\text{Current Ratio} = \frac{\text{Current assests}}{\text{Current liasilites}}$$

It means an 2:1 Ratio which means every one Rupee liasilites there is an two Rupee assest

b. Quick Ratio :- It is also called as acid test Ratio. It measures the firm's asility to convert its current assests quickly into cash in order to meet its current liasilites.

It is the ratio between liquid assets and liquid liabilities. It supplements the information given by the current Ratio

Quick Ratio = Quick assets / current liabilities

or

Quick assets = Current assets − (stock + prepaid expenses)

Quick assets are the assets that are converted into cash quickly. These are called liquid assets. Since stock can not be sold quickly, it is not included in the list of quick assets. All current stock and prepaid expenses, if any, are called as quick (or) liquid assets. The standard for this ratio is 1:1

Activity Ratios :-

Activity Ratios express how active the firm is in terms of selling its stocks, collecting its receivable and paying its creditor. These are three type

1. Inventory Turnover Ratio
2. Debtors Turnover Ratio
3. Creditors Turnover Ratio

1. Inventory Turnover Ratio :-

The relation between the cost of goods sold during a given period and the average amount of inventory outranding that period

Inventory Turnover Ratio = Cost of the goods / Average stock

Cost of the goods = Sales − Gross profit;

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

Inventory holding period = 365 days / inventory turnover Ratio.

2. Debtors Inventory period :-

Debtors turnover period = Credit sales / Avarage debtors

Credit sales = good sold on credit

Avarage debtors = (opening + closing) / 2

Debtors collection period = 365 / Debtors Inventory period

3. Creditors turnover Ratio :-

Creditors turnover Ratio = $\frac{\text{Credit purchases}}{\text{Avarage creditors}}$

Creditors payment period = 365 days / Credit Turnover Ratio.

Problems for liquidity and Activity Ratios :-

(1)

pblm :-

From the following Balance sheet of x y z Co. Ltd Calculate liquidity ratios.

Liabilities	₹	Assets	₹
Preference share Capital	100	Land & Buildings	225
Equity share Capital	150	Plant & Machinery	250
General reserve	250	Furniture and Fixtures	100
Debentures	400	Stock	250
Creditors	200	Debtors	125
Bills payable	50	Cash at bank	250
Outstanding Expenses	50	Cash in hand	125
Profit & loss account	100	Prepaid expenses	50
Bank loan (long term)	200	Marketable Securities	125
	1850		1500

Sol :- liquidity Ratios are Current Ratio and Quick Ratio.

1. Current Ratio = $\frac{\text{Current assets}}{\text{Current liabilities}}$.

Current liabilities are Creditors (200), bank (50), Outstanding expenses (50). Total = 3

Current assets are Stock (250), Debtors (125), Cash at bank (250), Cash in hand (125), prepaid (150), Marketable Securites (125). Total = 925

∴ Current Ratio = $\frac{925}{300}$ = 3.08 : 1 (or) 308% which is greater than 2:1. So, satisfiable

2. Quick Ratio = Quick assets / Current liabilities

Current liabilities = 300

Quick assets = Current assets − (stock + prepaid expenses)

= 925 − (250 + 50)

= 925 − 300 = 625

∴ Quick Ratio = 625/300 = 2.08 : 1 (or 200%).

Since this is also standard above 1:1. short-term liquidity of the company is satisfible

2) A firm sold worth Rs 5,00,000 and its gross profit is 20 percent of sales value. The inventory at the beginning of the year was Rs 16,000 and at end of the year was 14,000. Compute Inventory turnover ratio and also the inventory holding period.

Sol :- Inventory turnover period = $\frac{\text{cost of the goods sold}}{\text{Avarage inventory}}$

Cost of the good sold = Sales − Gross profit

Sales = 5,00,000 and

Gross profit = 20% of Sales = 1,00,000

∴ Cost of the good sold = 5,00,000 − 1,00,000

= 4,00,000

Avarage inventory = $\frac{(\text{Opening} + \text{closing})}{2}$

= $\frac{(16000 + 14000)}{2}$

= $\frac{30000}{2}$ = 15000

∴ Inventory turnover = $\frac{400000}{15000}$ = 26.66 times

Inventory holding period = 365 / Inventory turnover ratio

$= \frac{365}{26.66} = 13.69$ days (or 14 days

2) A firm sales during the year was 4,00,000 of which 60 percent were on credit sales. The balance of debtors at the beginning and the ending of the year was 25,000 and 15,000 respectively. Calculate debtors turnover ratio of the firm. Also find out debt collection period.

Sol:- debtors turnover ratio = $\frac{\text{Credit Sales}}{\text{Average Inventory}}$

Credit Sales = 60% of Sales

$= \frac{60}{100} \times 400000$

$= 2,40,000$

Average Inventory = $\frac{(\text{Opening} + \text{closing})}{2}$

$= (25000 + 15000)/2 = \frac{40000}{2}$

$= 20000$

∴ debtors turnover ratio = $\frac{2,40,000}{20,000} = 12$ times

debt collection period = 365 / debtors turnover Ratio

$= 365/12 = 30.41$ days

i.e 31 days approximately

Solvency / leavarage :- (assets > liabilities)

one side	otherside
assets	finance

It is also called as capital structure Ratios (financial Ratio), focuses on the long-term solvency of the firm.

Commonly used capital structure Ratios are :-

a) Debt equality Ratio
b) Intrest coverage Ratio.

a) Debt equality Ratio :- (D/E Ratio)

Ratio between out-siders funds (Debt) and Insider fund (equity). Ratio is 1:1 (every one Rupee debt there is internal fund).

This is an industry / sector speficiRatio. For shipping compines / steel companies, the D/E Ratio is high 20:1

$$\therefore \text{Debt equality Ratio} = \frac{\text{Debt / Equality}}{(\text{or})}$$

$$= \frac{\text{Out-sider Funds}}{\text{Insider fund (or Shareholder fund.}}$$

b) Intrest Coverage Ratio :-

$$\text{Intrest Coverage Ratio} = \frac{\text{Net profit before intrest and Taxes}}{\text{fixed intrest charges.}}$$

Pb/m :- Calculate dest- equality ratio and current

Ratio			
Debentures	1,40,000	Bank Bal	20,000
long term loans	70,000	Debtors	70,000
General Reserve	40,000		
Creditors	66,000		
Bills payable	14000		
Share capital	120000		

A) dest- equality Ratio = $\frac{\text{Out-Si'der's Funds}}{\text{Insiders Funds}}$

Out-Si'ders fund = Debentures + long term loans

= 1,40,000 + 70,000 = 2,10,00

Insiders fund = General Reserve + share capital + profit and loss

= 40,000 + 1,20,000 + 0

= 1,60,000

D/E Ratio = $\frac{2,10,000}{1,60,000} = \frac{21}{16} \approx 1.31$

∴ D/E Ratio = 1 : 1.31

Every 1 Rupee debt 1.31 Rupee fund.

Current- Ratio :- $\frac{\text{Current- assets}}{\text{Current- liabilities}} = \frac{1,00,000}{80,000} = 1.$

C.a = Bank Bal + Debtors = 30,000 + 70,00

= 1,00,000

liabilities = Creditors + Bill payable

= 66,000 + 14000 = 80000

Interest Coverage Ratio :-

Prob :- The earnings before interest and taxes (EBIT) of a company is Rs 5,60,000. Its fixed commitments include payment of 10 percent on 4000 debentures of Rs 100 each. It is subject to tax of 30 percent per annum.

Sol :- Net profit before interest and tax = Rs 5,60,000

Fixed interest charges on debentures = (No. of debentures × Rupees each) × interest

$= (4000 \times 100) \times 10\%$

$= 400000 \times \frac{10}{100}$

$= 40000$

Interest Coverage Ratio = $5,60,000 / 40,000$

$= 8$ times.

Profitability Ratios :- To know the profit an particular organization.

There are 8 types of profitability Ratios

1. **Gross profit :-** $\frac{\text{Gross profit}}{\text{Net sales}} \times 100$

Gross profit = Sales - cost of goods sold

2. **Net profit :-** $\frac{\text{Net profit}}{\text{Net sales}} \times 100$

3. **Operating Ratio :-** $\frac{\text{Operating Expenses}}{\text{Net sales}} \times 100$

4. Return on Investment :—

$$\frac{\text{profit before interest and tax}}{\text{Capital Employed}} \times 100$$

Capital Employed = share capital + Reserves + long term debt

5. Return on Shareholder Funds :— (Net worth)

$$\frac{\text{Net profit after tax}}{\text{Net worth}} \times 100$$

Net worth = Equality share + Preference shares + Reserves shares

6. Return on Assets :— $\frac{\text{Net profit after time}}{\text{total assets}} \times 10$

7. Earn per share (eps) :— $\frac{\text{Net profit} - \text{preference Dividend}}{\text{No. of Equality shares}}$

8. price Earn Ratio (P/E) :—

$$\frac{\text{Market price per Equality share}}{\text{Earning per share}}$$

= 66,000 + 14000 = 80000

Q1m :-

Calculate ① Gp Ratio ② Np Ratio ③ Return on Network ④ Return on Total assets.

Sales – 25,00,000 Cost of sales – 19,00,000 Net profit – 3,00,000	Inventory – 8,00,000 Current assets – 7,60,000 Fixed assets = 14,100,000	Net Worth = 15,00,000 Debt = 19,00,000 Current liasilits = 6,00,000

$$\text{Gp Ratio} = \frac{\text{Gross profit}}{\text{Net Sales}} \times 100$$

Gross profit = Sales – cost of sales

= 25,00,000 – 19,00,000

= 6,00,000

$$\therefore \text{Gp Ratio} = \frac{6,00,000}{25,00,000} \times 100 = \frac{24}{100} = 24\%.$$

$$\text{Net profit} = \frac{\text{Net profit}}{\text{Net Sales}} \times 100$$

$$= \frac{3,00,000}{25,00,000} \times 100 = 12\%.$$

$$\text{Return on Network} = \frac{\text{Net profit}}{\text{Net worth}} \times 100$$

$$= \frac{3,00,000}{5 \times 5,00,000} \times 100 = 20\%$$

Return of total assets

$$= \frac{\text{Net profit}}{\text{Total assets}} \times 100$$

Total assets = Inventory + C.a + F.a

= 8,00,000 + 7,60,000 + 14,100,000

= 29,60,000

$$\therefore \frac{3,00,000}{29,60,000} \times 100 = \frac{3000}{296}$$

MEFA - 4th unit

Sk. Sandhani

Problems

1. Paysack period :-

Annual cash flow Constant;

$$\text{paysack period} = \frac{\text{cost of the period}}{\text{Annual cash inflows.}}$$

Annual cash flow is not constant

$$\text{paysack period} = \text{lower year} + \frac{\text{Cost of the project} - \text{AACI lower year}}{\text{AACI after low year} - \text{AACI lower year}}$$

2. ARR (Accounting rate of return(or) Avarage) :-

For avarage,

$$ARR = \frac{\text{Avarage annual profit after tax}}{\text{Avg investment}}$$

For total,

$$ARR = \frac{\text{Avarage annual project after tax}}{\text{total investment.}}$$

3) Net present value :-

Net present value = present value cash inflows - project value.

4) Internal rate of return :-

$$IRR = Lf + \frac{P_1 - C}{P_1 - P_2} \times D$$

1. Estimated cash inflows

year	project - 1	project - 2
1	12500	11750
2	12500	11250
3	12500	12500
4	12500	13500

Starting investment for both project Rs 20000

1. paysack method. 2. average rate of return

Sol:- project - 1 :→

paysack period annual flow is constant-

$$\text{paysack period} = \frac{\text{cost of the product}}{\text{annual flow}}$$

$$= \frac{20000}{12500} = 1.6 \text{ years}.$$

project 2 :-

packsack period annual flow is not constant.

year	project 2	Cummulative
1	11750	11750 (lower)
2	11250	23000 (After lower)
3	12500	35500
4	13500	49000

Pay back period = lower year + $\frac{\text{Cost of project} - \text{annual cash inflow lower year}}{\text{Annual cash inflow after lower year} - \text{lower year}}$

$= 1 + \frac{20000 - 11750}{23000 - 11750}$

$= 1 + \frac{8250}{11250} = 1.733$ years.

Avarage rate of return :—

project — 1 :— if investment is given then we use Avarage annual rate of return formulae.

i.e ARR = $\frac{\text{Avarage annual profit after taxes}}{\text{Avarage investment}} \times 100$

Avarage annual profit = $\frac{\text{Total annual cash flow}}{\text{Total no. of year}}$

$= \frac{12500 + 12500 + 12500 + 12500}{4} = 12500$

Avarage investment = $\frac{\text{Total investment}}{2}$

$= \frac{20000}{2} = 10000$

Avarage rate of return = $\frac{12500}{10000} \times 100 = 1.25 \times 100$

$= 125\%$.

Project -B :-

$$ARR = \frac{\text{Average rate of return after tax}}{\text{Average investment}} \times 100$$

$$= \frac{11750 + 11250 + 12500 + 13500 / 4}{100000} \times 100$$

$$= \frac{49000}{100} \text{ Rs/-}$$

$$= \frac{12500 \times 100}{100000} = 12.5\%$$

Net present value Method :-

Present value of Cash inflows − project value.

Consider the following two investments alternatives each costing Rs 9,00,000 the details of cash inflows as follows

Year	Project -1	Project -2
1	1,00,000	6,00,000
2	5,00,000	4,00,000
3	6,00,000	3,00,000

The cost of the capital is 10%.

Sol :-

NPV. Year	project - 1	PV Ratio 10%	Present (2×3)
1	3,00,000	0.909	2,72,000
2	5,00,000	0.826	4,13,000
3	6,00,000	0.751	4,50,000
		Total present value =	11,36,300

PV Ratio for 3,00,000 :- $\frac{1}{(1+(0.1))^1} = \frac{1}{1.1} = 0.909$

PV Ratio for 5,00,000 :- $\frac{1}{(1+(0.1))^2} = 0.826$

PV Ratio for 6,00,000 :- $\frac{1}{(1+(0.1))^3} = 0.751$

Net present value = total present value − project cost

= 11,36,300 − 9,00,000

= 2,36,300

4. Internal Rate of return :-

Internal Rate of return :-

steps for calculating Internal Rate of Return

1. Have to calculate two times. net present value
2. one time have to come positive of net present value.
3. Another time have to come negative of net present value.
4. Discount rate has to take approximate rates each time

$$IRR = L + \frac{P_1 - C}{P_1 - P_2} \times D$$

L = lower rate of discount

P_1 = PV at lower rate

P_2 = PV at higher rate.

C = Cash out lay (or) investment

D = Difference in rate of intrest

Pb/m :- The following data you calculate internal rate of return (IRR)

Cost of the project Rs 11000

Cash inflows year	Rs
1	6000
2	2000
3	1000
4	5000

Sol :- Calculation of the net present value

Year	Cash inflows	present value Rs 1 at 10%	present value of cash
1	6000	0.909	5454
2	2000	0.826	1652
3	1000	0.751	751
4	5000	0.683	3415

Net present value = Total present value = 11272

Net present value = total present val
— cost of the
= 11272 - 11000 =
(positive Net pr
value)

Calculate Net present value.

Year	Cash Inflows	present value of Rs 1 to 15%	present value in cash inflows
1	6000	0.870	5220
2	2000	0.756	1512
3	1000	0.658	658
4	5000	0.572	2860
		Total present value =	10250

Net present value = Total present value − Cost of the project

= 10250 − 11000 = −750

(Negative Net present)

Internal rate of return = $L + \frac{P_1 - C}{P_1 - P_2} \times D$

$L = 10$, $P_1 = 11272$, $C = 11000$, $P_2 = 10250$, $D = 5$

$= 10 + \frac{11272 - 11000}{11272 - 10250} \times 5$

$= 10 + \frac{272}{1022} \times 5$

$= 10 + 1.33 = 11.33$

ce?
duct?
pes of price
of demand

Capital & Capital Budgeting

* Capital mean the enterpreneur (business starter) is taking some money, land, labour, invocations for start business called capital.

=) Creativity, innovaction, new ideas are considered as special form of capital.

=) Some people has idea but don't have money. Some people has money but no idea.

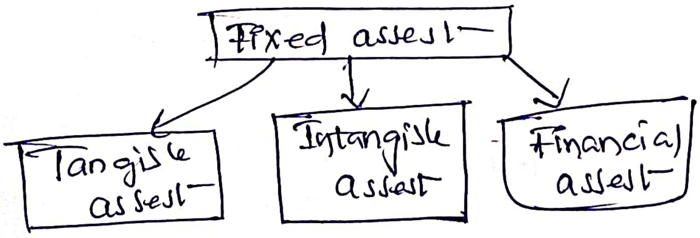
=) ~~Com~~ The ideal combination of business is both idea and money.

There are two types of capital

1. Fixed capital
2. working capital

1. **Fixed capital** :- The amount of money which is used to earn / buy a good / product like land, building etc., which can't be consumed but reusable called Fixed capital

Ex :- large michenaries in factory, class room benches in colleges



=) Fixed capital is long term

tangible assets :- The property which are physical items which can be reuse and the property is in entrepreneur name

Eg :- land, Machinary, Building.

In tangible fixed assets :- These donot have physical form which are can't be seen (or touched.

Eg :- Reputation, brand, copyrights, Goodwill.

Financial Fixed assets :- these are in our name but we donot use it we gives rent to the others

Eg :- shares, deposits etc.,

2 working capital :- The amount available in company, business, industry ~~can~~ for day to day Operations (or activities

Eg :- In a supermarket, if wages are giving day wise then Money has to distributed by day,

* Raw Material day by day buying

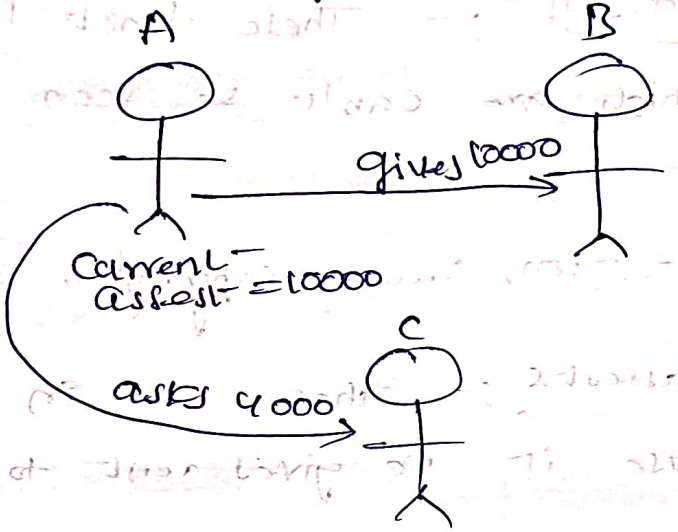
Eg :- vegetable, tiffin

Working Capital = Current assets − Current liab

Eg :- if A person gives 10000 money to B pers

then A person asks 4000 from C person

then working capital is 10000 − 4000 = 60



⇒ short-term is an working capital

Working capital classified on based on concept, based on time divided into 2 types

1. Based on concept

Gross working Capital

Net working Capital

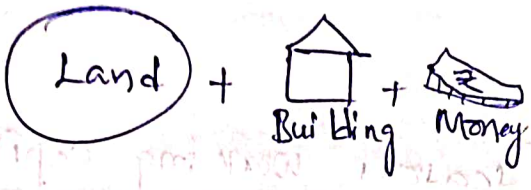
Based on time

Fixed, Variable

Gross working capital :- Sum of all current assets.

Eg :- Person consists of land, building, Money

∴ Gross working capital = land + building + Money



Net working capital :-

The difference in current assets and current liabilities

Significance :-

Factors determing / effecting working Capital :-

1. Nature of business :- The working capital chooses its capital based on Quantity of business

Eg :- supermarket requires more working Capital compared to tiffin.

2. size of business :- The business & expansion is high then we need more capital.

3. production policies :-

- Own build → papads with rice powder
- Buying and selling → Cloth Market

4. Manufacturing process :-

The more quantity, high Quality, Sut- Reasonable Capital is the process of manufacturing

Eg :- Rare Rabbit shirt

5. Seasonal variations :-

Based on seasons working capital changes.

Eg :- Mangoes.

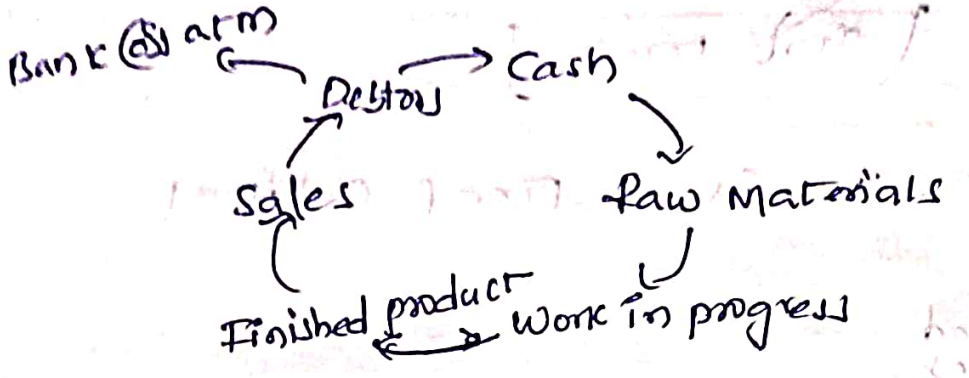
6. Credit policy :- so many branches are there they we use credit policy More working Capital less profit

Factors (or) Features effecting / determining fixed capital :-

1. permenant in nature :- Land, building
2. profit generation :- Renting a house
3. No liquidity :- not easy to sell. There are some formulaties.
4. Irreversible :- If we say we can't give it back with the same capital to the same person

Eg :- pular 125 = 1,51,000 if you use today and returns they give = 1,00,000.

Working Capital cycle :-

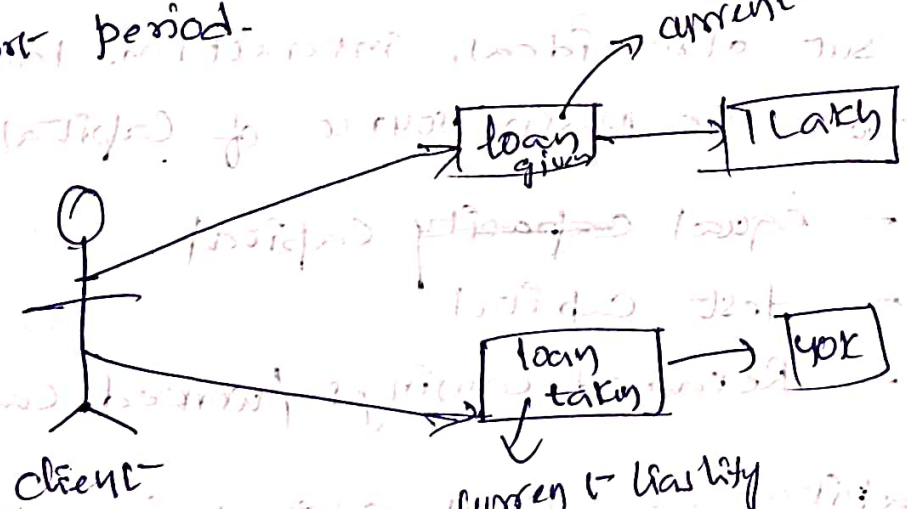


Components of working Capital :-

1. Current assest
2. Current liasilites.

1. Current assest :- The assest which are converted into cash within 1 year called current assest.
Ex :- working process in company.

2. Current liasilites :- The assest usally complet in short period.



Hence, Net working Capital = 1 Lakh - 40k
= 60000

⇒ Gross working capital can't be negative

→ Net working capital can be negative.

Source of capital :-

long term | short term

long term :- It is a Fixed Capital

owned sources | Borrowed sources.

Eg :- Car travelleys.

Short term :- It is a Neat Capital. It is not owned it is rented.

Eg :- ~~Machinery~~ seasonal change sites.

Rental for 60s.

Source of Capital :- The capital is not only money but also ideas, interaction, land and labour too. The main source of capital are

- equal ~~capacity~~ capital
- dest capital
- Retained earnings / worked capital

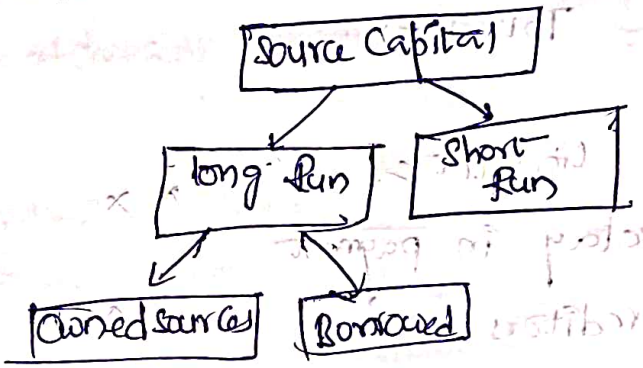
equal capital :- Equal capital is where a company rasies money by selling off a percentage of the business in the forms of shares which are purchased and owned by shareholders.

2. debt- capital :- Debt capital is

Money

retained earnings :- It is the money needed to meet the day-to-day operation of the business and pay its obligations promptly

Savings :- It is the most important source of the capital formation. When people save a portion of money these money is invested in productive assets., which leads to capital formation.



long Run :- An invested capital comes after a long period (>1 years) called long Run. It is an fixed capital

owned source :- The business started by the own money, transportations called owned sources

Borrowed :- The Rental resources are called as Borrowed.

Short- Run :- It is not a fixed capital. It is Net Capital. It is varied

Estimation of working capital requirements

Particular	Inner amount (Rs)	Outer amount (Rs)
(A) current assets		
→ Raw Material	x x	
→ work in progress	x x	
→ finished goods	x x	
→ Debtors	x x	
→ Land, Resources	x x	
→ prepaid expenses	x x	
→ Punishment	x x	
Total (A)		x x
(B) Current liabilities	x x	
→ Delay in payment		
→ Creditors	x x	
Total (B)		x x
(C) Net working capital (A) − (B)		x x
(D) contingency expense (sudden)		x x
Total working capital required		x x x x

Capital Budgeting :-

The capital is used to consume on any goods / service at correct place where we get more profit called capital budgeting.

⇒ It is taking decision based on the previous data about that particular location where we think we get an profit.

⇒ There are more than 2 alternatives in the capital budgeting

Ex:- if we see, a factory which consists of set of clothes are purchased and want to deploy into market we see where the best place to start-up selling and making a best model to advertisement.

⇒ Capital budgeting is the process of long run time waiting to get investment for profit.

⇒ It is applicable for long-term process which has more than 3 years.

⇒ we require huge amount of capital in long run. & we need to think about cash inflow and out-flow once a twice.

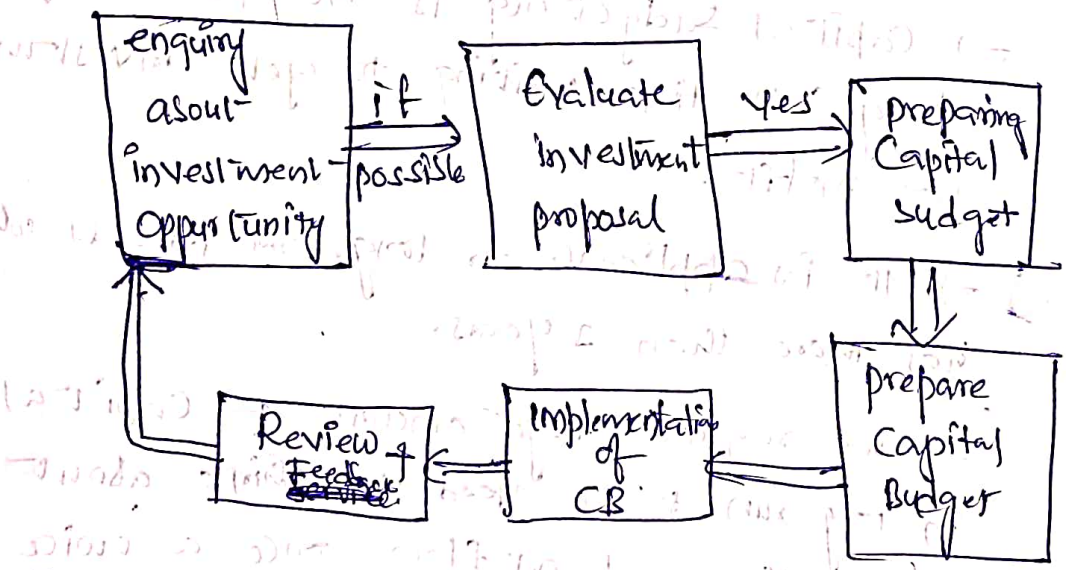
⇒ while evaluating capital budgeting we need to following these steps

- Generating investment proposal.
- Estimate cash flow for proposal
- evaluating cashflow.
- selecting the product based on the proposal by the localites.

Needs / objectives of Capital sudgeting :-

1. long term decision
2. To progress.
3. Responsible for large amount of fund
4. Responsible for legal and illegal activites
5. Careful decision
6. Identify effective profect.
7. process of Capital sudgeting

Steps / process of Capital sudgeting :-



~~Capital sudget~~

Feactres of Capital sudget :-

1. Growth - Need to Growth the business
2. Risk - Need to care about not making Ri
3. complexity - take suggestions to avoid proble
4. IRReversability - Not get a full Capital if Reversable
5. High fund. - It is a long Run need to

Capital Budgeting Methods / Techniques

→ Payback
→ ARR
→ IRR
→ NPV