

10/10/25 Unit-3: Financing Decisions :-

Explain the concept of leverage? write the types of leverages.

A) Introduction :-

A company can finance its investments by variety of sources such as debt capital (debentures), preference capital and equity capital including reserves. The interest rate on debt capital is fixed and it is paid every year. The rate of preference dividend is also fixed but this dividend will be paid when the company earning profits. The rate of dividend on equity capital is not fixed, that it can be differ from year to year depending upon the decision of the board of directors at the time of annual general meeting.

Meaning & Definition :-

"Leverage means, meeting a fixed rate or cost paying for employing the funds." The term leverage is used as the ability of the firm to meet the fixed cost assets for increasing return to the share holders." - J-L. Massie

Classification of leverages :-

There are 2 types of leverages. They are

1. operating leverage

2. financial leverage

1. Operating leverage :-

The leverage associated with investment activity is called as operating leverage. operating leverage resulting from the existence of fixed operating expenses in the income. This leverage is measured to know the relationship between sales & operating profit.

2. Financial Leverage :-

The leverage relating to the financing activities

is known as financial leverage. Both the leverages are essential to analyse the magnitude of changes in sales. and investment.

Financial leverage resulting from the fixed financial charges in the income. The fixed financial charges doesn't change with the earning. It is always concerned with the effect of changes in EBIT on the earnings available to the owners. It may be also known as trading on equity it is divided into 2 types.

1. Trading on Thin equity
2. Trading on Thick equity

1. Trading on Thin Equity :-

It means the amount of borrowings are relatively large in proportion to the equity capital.

2. Trading on Thick Equity :-

It is just reverse position of thin equity. It will arise, when the borrowings are relatively small compared to equity capital.

Calculation of Leverages :-

1. Degree of operating leverage (DOL)

$$DOL = \frac{\text{Contribution}}{\text{EBIT} / \text{Operating profit}} = \frac{C}{EBIT}$$

2. Degree of Financial leverage (DFL)

$$DFL = \frac{\text{EBIT}}{\text{EBIT}}$$

3. Degree of combined leverage (DCL)

$$DCL = DOL \times DFL \quad (\text{Or})$$

$$= \frac{\text{Contribution}}{\text{EBIT}}$$

(contd)

Statement of profit :-

Particulars	Amount
Sales	xxxx
(-) variable cost contribution	xxx
(-) Fixed cost	xxxx
EBIT / operating profit	xxxx
(-) Interest EBIT	xxxx
(-) Taxes @ %	xxxx
Earnings after tax	xxxx
(-) Preference Dividend	xxxx
Net profit	xxxx

Problems:-

1. A firm sales of 90,000 units, variable cost per unit 14 lakhs, fixed cost of 4 lakhs and debt of 10 lakhs at 10% rate of interest. calculate the operating leverage, financial leverage and combined leverage.

Calculation of leverages :-

Particulars.	Amount
Sales	90,00,000
(-) variable cost contribution	14,00,000
(-) fixed cost	4,00,000
EBIT	2,00,000
(-) Interest $(10,00,000 \times \frac{10}{100})$	1,00,000
EBT	1,00,000

$$DOL = \frac{\text{E}.\text{C}}{\text{EBIT}}$$

$$= \frac{60,00,000}{2,00,000} = 3$$

$$DFL = \frac{2,00,000}{100,000} = 2$$

$$DCL = \frac{C}{EBT} = \frac{600,000}{100,000}$$

$$= 6$$

2. The following figures related to 2 companies

Particulars	Anil Ltd	Varun Ltd
Sales	500	1000
Variable cost	200	300
Contribution	300	700
Fixed cost	150	400
Interest	150	300
Profit before tax	100	200

calculate operating leverage, financial leverage and combined leverage for the 2 companies

A) calculating the leverage :-

1. operating leverage :-

$$DOL = \frac{\text{contribution}}{\text{EBIT}}$$

Anil Ltd	$\frac{300}{150} = 2$	Varun Ltd	$\frac{700}{300} = 2.333$
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2. Financial leverage :-

$$DFL = \frac{\text{EBIT}}{\text{EBT}}$$

Anil Ltd	$\frac{150}{100} = 1.5$	Varun Ltd	$\frac{200}{200} = 1.5$
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3. Combined leverage :-

$$DCL = \frac{C}{EBT}$$

Anil Ltd	$\frac{300}{100} = 3$	Varun Ltd	$\frac{700}{200} = 3.5$
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3. A company has sales of 10 lakh variable cost are 40% of sales, while the fixed cost of 3 lakhs. The amount of interest on long term debt is of 1 lakh. If you are required to calculate the leverages

calculation of leverages

Particulars	Amount
Sales	10,00,000
Variable cost	4,00,000
Contribution	6,00,000

① operating leverages

$$DOL = \frac{C}{EBIT}$$

$$= \frac{6,00,000}{3,00,000} = 2$$

(i) fixed cost	3,00,000
EBIT	300,000
(ii) Interest	1,00,000
EBT	200,000

(3) financial leverage:-

$$DFL = \frac{EBIT}{EBT} = \frac{3,00,000}{2,00,000} = 1.5$$

(4) combined leverage:-

$$DCL = \frac{C}{EBT} = \frac{6,00,000}{2,00,000} = 3$$

4. A firm has sales of 50,000, variable cost 25,000, fixed cost 15,000 and interest 5000. calculate the leverages.

Particulars	Amount
sales	50,000
variable cost	25,000
contribution	25,000
(i) fixed cost	15,000
EBIT	10,000
(ii) Interest	5000
EBI	5000

(1) operating leverage:-

$$DOL = \frac{C}{EBIT} = \frac{25,000}{10,000} = 2.5$$

(2) financial leverage:-

$$DFL = \frac{EBIT}{EBT} = \frac{10,000}{5,000} = 2$$

(3) combined leverage:-

$$DCL = \frac{C}{EBT} = \frac{25,000}{5,000} = 5$$

5. A company sells 10 lacs, variable cost 7 lacs, fixed cost 2 lacs and debt of 5 lacs at 10% rate of interest. Calculate the leverages.

(1) operating leverage:-

Particulars	Amount
sales	10,00,000
variable cost	7,00,000
contribution	3,00,000
fixed cost	2,00,000
EBIT	1,00,000
Interest	50,000
EBI	50,000

(2) financial leverage:-

$$DFL = \frac{EBIT}{EBT} = \frac{1,00,000}{50,000} = 2$$

(3) combined leverage:-

$$DCL = \frac{C}{EBT} = \frac{3,00,000}{50,000} = 6$$

(2) Define the concept of capital structure? Explain the principles of capital structure.

(a) Meaning:-

Capital structure represents both owned and borrowed funds. Capital structure is used the

Proportionate relationship among the various long term sources such as debt capital, preference capital, equity capital including reserves.

A firm should always try to design its capital structure in such a way, which means maximize the returns to the share holders (profit). It is due to this concept of optimum capital structure has introduced.

Optimum capital structure:-

An optimum capital structure can be defined as "the combination of debt and equity that maximizes the market value and minimizes the cost of capital".

6. Principles Capital structure :- - David. Durand

while designing the capital structure of the firm, a manager is influenced by certain principles. They are as follows.

1. cost principle:-

This principle states that the capital structure of a firm should be the cost of financing.

Ex:- Interest on debentures and long term loans.

2. Risk principle:-

This principle applies more on common stock other than on debt funds for financing its capital requirements.

3. Control principle:-

According to this principle, the raising, controlling position of the owner should remain undistributed. The funds should be raised in a way that of ownership may not occur.

4. Timing principle:-

This principle is based on the fact that demand for different types of securities change

according to the business cycles. (Boom period & depression/ recession period)

Q) write about the importance of capital structure?

A) Capital structure is defined as the combination of equity and debt it uses by a company in order to finance the overall operation of the company and for its growth.

Importance of Capital Structure :-

Capital structuring is an essential function of the management to maintain a sound financial position of the business and fulfil the financial requirements. To know more about its significance for the company.

1. Return maximization :-

A well designed company's capital structure provides a scope of increasing the earnings per share, which ultimately maximizes the return for equity shareholders and recover the cost of borrowings.

2. Solvency :-

A sound capital structure helps to maintain liquidity in the firm because an unplanned debt capital leads to the burden of interest payments, ultimately reducing the cash in hand.

3. Flexibility :-

It also facilitates the expansion of the debt capital to suit the business strategies and conditions.

4. Reduces financial Risk :-

Balancing the proportion of debt and equity in the business through capital structure helps the business firms in managing and minimizing the Risk.

5. Tax planning tool :-

For the Company opting for debt funds,

The Capital structure provides them with a benefit tax deflection on saving, Decreasing the cost of borrowing.

④ Explain the factors determining the capital structure?

→ The proportion of debt and equity should be divided in the capital structure of a company decides the cost of capital and firms value. Such type of Capital Structure is called as optimum Capital structure. The following factors determine the Capital structure.

1. Financial Leverage/ Trading on equity :-

Capital structure consisting of long term fixed interest debt, preference capital and equity capital is called as financial leverage. This leverage can operates its impact on shareholders return (Earning per share). So the financial leverage also the rate of return on long term loans is more than the expected rate of return of the firm.

2. Growth and stability of Sales :-

Sales is the major and main source of income for any company. Capital structure of a Company is highly influenced by its growth and stability of sales. Thus Capital structure is decided by its volume of sales.

3. Cost of capital :-

Interest rate on debt is the cost of debt. Rate of returns expected by shareholders is the cost of equity. The company must be able to earn more than the above two rates. Generally the return excepted by the suppliers of Capital depends on the risk, all the above factors decide the optimum Capital structure.

A. Control :-

Equity share holders have voting rights. debenture holders and preference share holders don't have voting rights. If the equity shares are issued to raise additional funds, debentures and preference share may be issued to raise additional funds. thus controlling effect also decides the capital structure.

5. Requirements of Investors :-

Investors generally require safety and profit. Investors require profit may invest in equity. Thus requirement of investors also decide the capital structure.

6. Period of Financing :-

If the finance is required for a long period of 5 years, debentures may be issued. For the finance of permanent nature equity may be issued, preference shares may also be issued. thus the period for which the finance is needed and decides the capital structure.

F. Corporate taxes :-

High rate of Corporate taxes on profits of the companies to prefer debt financing, because interest is allowed to be deducted from taxable profits.

8. Legal Requirements :-

Government has also issued certain guidelines for the issue of shares and debentures within that framework capital should be decided.

⑤ Explain the different approaches to the Capital structure. and also Explain the basic assumptions to the Capital structure.

A) Different theories on Capital structure :-

The Concept of the optimum Capital

structure is not accepted by several authors. There are two extreme points, net income and net operating income approach between the middle period introduced by traditional writers. Is called as traditional theory. The another theory which is defined by modigliani and miller therefore (MM). Therefore Capital structure theories is broadly divided into 4 theories. They are

1. Net Income Theory.
2. Net operating Income Theory.
3. Traditional Theory.
4. Modigliani and Miller Theory.

Basic Assumptions of Capital structure :-

In order to understand the capital structure theories are following the assumptions.

1. There are only two sources of funds raised by the firm. that is debt and equity.
2. The total capital structure amount will remain constant.
3. operating profit is not expected to increase.
4. The Dividend payout ratio is 100%.
5. There are no taxes.

Equations or Definitions:-

$$V = \text{total value of the firm} (S+D)$$

$$S = \text{Market value of equity}$$

$$D = \text{Market value of debt}$$

1. Value of debt (D)

$$K_d = \frac{I}{D}$$

$$D = \frac{I}{K_d}$$

2. Value of Equity (S) :-

$$K_e = \frac{NI}{S}$$

$$S = \frac{NI}{K_e}$$

③ Total value of the firm (V)

$$V = S + D$$

$$V = \frac{EBIT}{k_0}$$

④ WACC (k_0) :-

$$k_0 = \frac{\cancel{EBIT}}{\cancel{k_0}}$$

$$k_0 = \frac{EBIT}{V}$$

⑥ Explain the net income approach?

a) Introduction:-

This theory is suggested by David Dobard.

According to net income theory the capital structure decision is relevant to the capital structure changes. The main imports of this theory, The firm can change its value or lower the cost of capital by increasing the debt in the capital structure. This approach followed the assumptions.

1. k_d and k_e are constant.

2. k_d is less than the k_e .

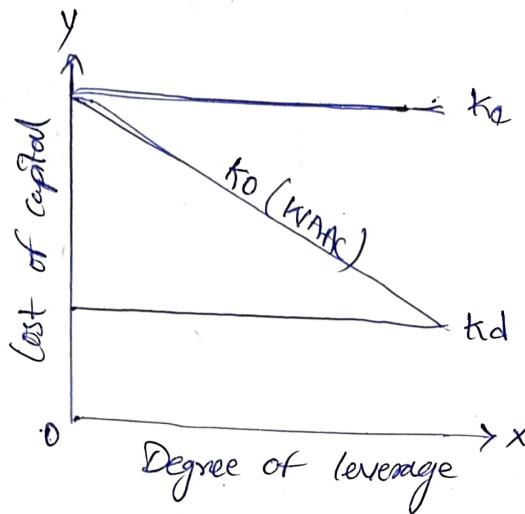
3. No taxes.

The three assumptions applied under net income theory is that, if k_e and k_d are constant the increased use of debt to the share holders earnings result in higher value of the firm. Consequently, The overall cost of Capital will decrease. The k_0 is measured by the following formula.

1. $V = S + D$

2. $k_0 = \frac{EBIT}{V}$

The net income theory further shown graphically in the following.



It can be observed from the above graph, when the proportion of debt is increased in the capital structure the weighted average cost of capital will decrease. and proportionately the firm will have to maximize the value. lower the cost of capital.

⑦ Explain the net operating income approach.

A) Introduction:-

This approach is introduced by David Durand. It is just opposite to the net income approach. According to net operating income theory, the market value of the firm is not affected by capital structure changes. In this approach the cost of equity is increased with the leverage. as a result, the overall cost of capital and the total value of the firm will remain constant. The basic assumptions under this theory are follows

1. The debt capitalization rate (k_d) is constant.
 2. The weighted average cost of capital (k_w) and total value of the firm doesn't change.
 3. There are no taxes.
- Based on the above assumptions under net operating income theory the value of the firm is calculated by the following formulas.

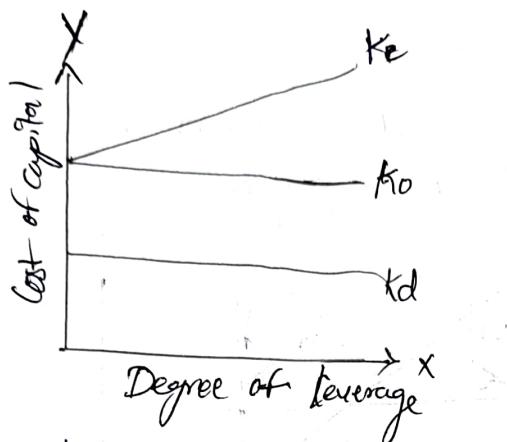
$$\textcircled{1} \quad V = S + D$$

$$\textcircled{3} \quad D = \frac{I}{K_d}$$

$$\textcircled{2} \quad S = \frac{NI}{K_e}$$

$$\textcircled{4} \quad V = \frac{EBIT}{K_o}$$

The net income theory further shown in graphically as follows.



The above graph shows that, when K_d and K_o are constant and the increase continuously with the leverage. When the weighted average cost of capital is constant under this approach there is no specific optimum capital structure.

⑧ Explain the modigliani and miller approach?

a) Introduction :-

M-M theory is identical with net operating income theory. Under this approach the firms market value and cost of capital will remain constant. The M-M theory can be explained with the help of proportion one and proportion two. These proportions are based on certain assumptions.

Assumptions:-

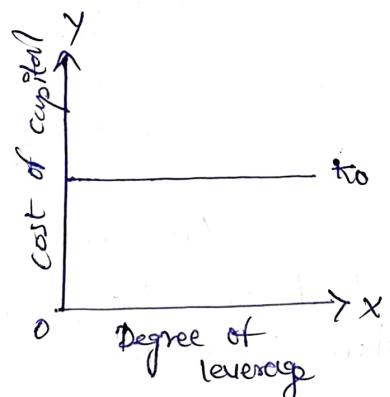
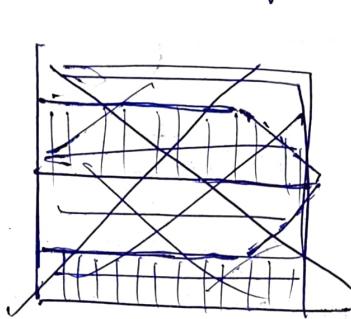
1. There is a perfect Market.
2. Investors act rationally(freely).
3. There are no corporate taxes.
4. All earnings are distributed to the share holders.

Proposition - I :-

Based on the above assumptions Modigliani-Miller argues that, the total market value is independent. Proposition I defines the total value & calculated on the following formula.

$$V = S + D$$

The cost of capital behaviour under M-M theory is shown with the help of a graph.

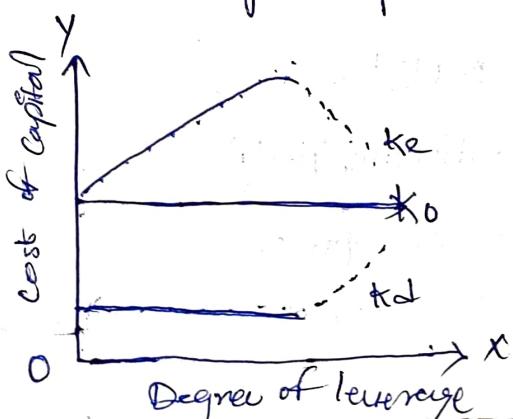


Proposition - II :-

Proposition-II defines the cost of equity. It is calculated on the following formula.

$$k_e = \frac{NI}{S}$$

The M-M theory under proposition II is that when k_o will not raise, the use of leverage in the capital structure is constant. According to M-M theory if k_d is increasing, k_e is also increasing at a decreasing rate and turn down sequentially. This will be shown with the help of following graph.



Q) Explain the traditional approach?

A) Traditional approach is also known as intermediate theory and it is a compromise between net income & net operating income theories. According to this theory the value of the firm is increased and the cost of capital will be decreased by the proportionate mix of debt and equity.

Under this theory the behaviour of cost of capital can be divided into 3 stages. All the 3 stages the value of the firm will be calculated by the following formula.

$$V = S + D.$$

Q) Explain the cost of capital & write the measurements of cost of capital?

A) Meaning:-

Cost of capital is very important in the financial management. It is the minimum rate of return which will be maintained by the business firm at the current level. If the business firm earns more than the cost of capital, the market value of the firm is expected to increase. The measurement of the cost of capital is significant in the capital budgeting decisions.

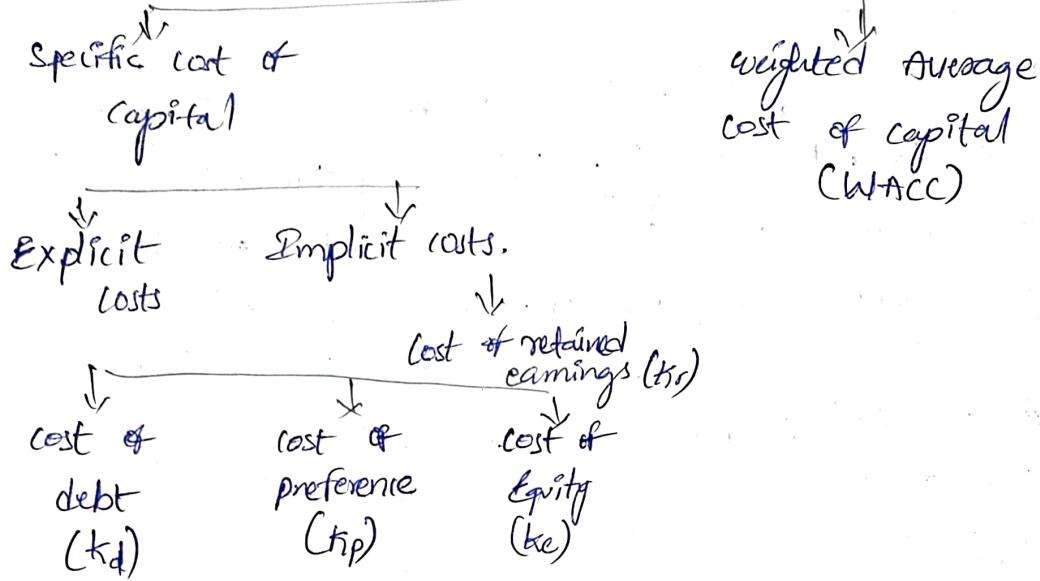
Definitions:-

"cost of capital is the minimum required rate of return in the capital expenditure" — Solomon Ezra.

Measurement of cost of capital:-

For the purpose of measuring the cost of capital, the business firm will calculate the two heads as follows—

Cost of capital



Specific cost of capital :-

The cost which is incurred specifically on each source of finance is called specific cost. It will be classified in the following.

i) cost of debt (k_d):-

Cost of debt means rate of interest payable on debt capital. It includes debentures, bonds, and long term loans.

ii) cost of preference capital (k_p):-

Like debt, preference capital is also major source of specific cost. It is divided in redeemable & irredeemable.

iii) cost of equity (k_e):-

Cost of equity is rate of dividend payable on common share holders. There are 2 models for calculating the cost of equity. They are:-

(i) Dividend model

(ii) Earnings model

iv) cost of retained earnings (k_r):-

The cost which is incurred for utilization of

resources, when the business firm required expansion of the business (or) introducing the new project.

Weighted Average Cost of Capital (WACC):-

It is also called as over all cost of capital (or) average cost of capital. In order to calculate (WACC) the following steps should be consider.

1. calculation of specific cost of capital
2. Determination of weight (or) the proportion of each source of finance.
3. multiplying the specific cost with respective proportion of to find our weighted costs.
4. Adding the weighted cost of different sources to determine (WACC).