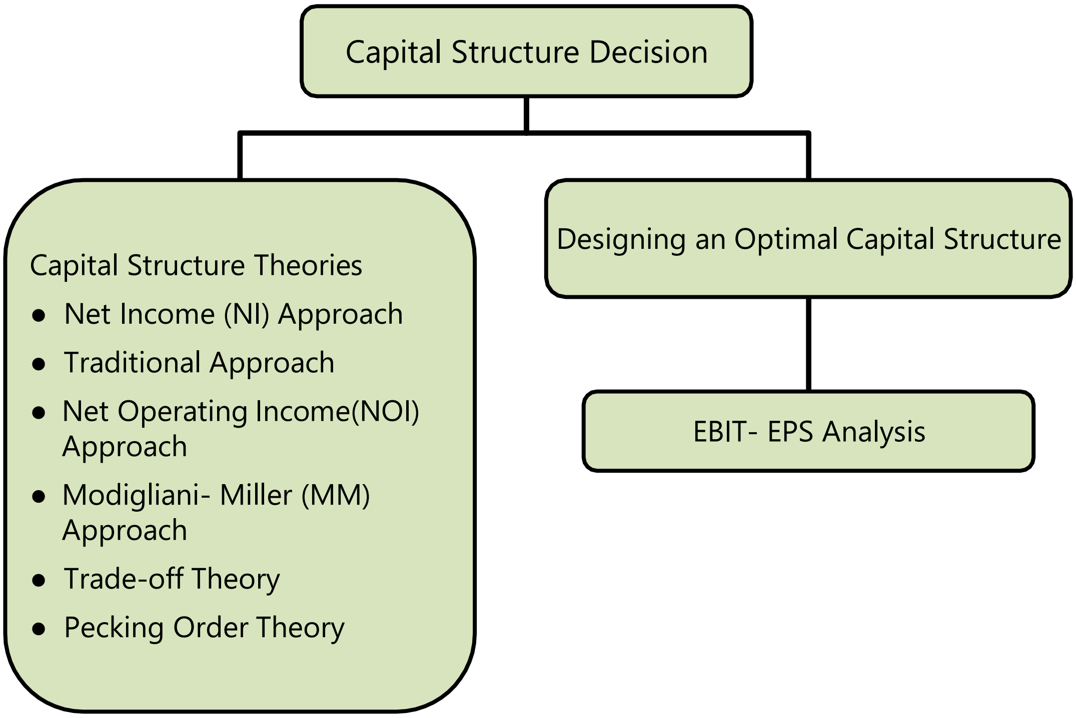
CAPITAL STRUCTURE



5.1 MEANING OF CAPITAL STRUCTURE

Capital structure is the combination of capitals from different sources of finance. The capital of a company consists of equity share holders' fund, preference share capital and long term external debts. The source and quantum of capital is decided keeping in mind following factors:

1. **Control**: capital structure should be designed in such a manner that existing shareholders continue to hold majority stack.
2. **Risk**: capital structure should be designed in such a manner that financial risk of the company does not increases beyond tolerable limit.
3. **Cost**: overall cost of capital remains minimum.

Practically it is difficult to achieve all of the above three goals together hence a finance manager has to make a balance among these three objectives.

However, the objective of a company is to maximise the value of the company and it is prime objective while deciding the optimal capital structure. Capital Structure decision refers to deciding the forms of financing (which sources to be tapped); their actual requirements (amount to be funded) and their relative proportions (mix) in total capitalisation.

$$\text{Value of the firm} = \frac{\text{EBIT}}{\text{Overall cost of capital / Weighted average cost of capital}}$$

K_o = (Cost of debt × weight of debt) + (Cost of equity × weight of equity)

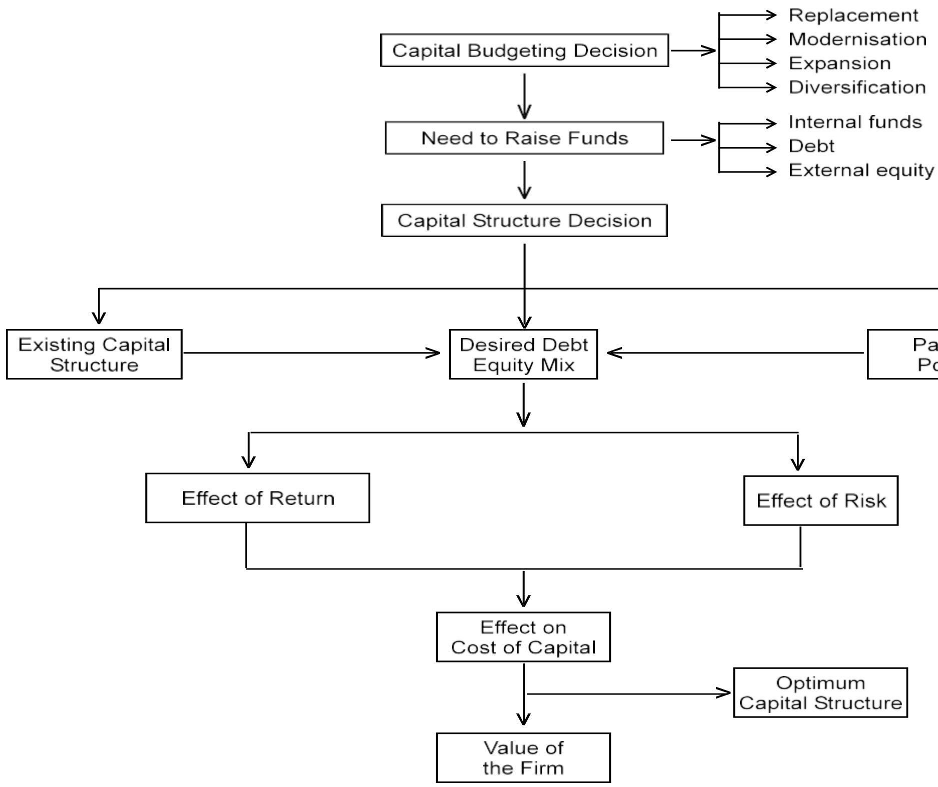
$K_o = [\{K_d \times D/(D+S)\} + \{K_e \times S/(D+S)\}]$

Where:

- K_o is the weighted average cost of capital (WACC)
- K_d is the cost of debt
- D is the market value of debt
- S is the market value of equity
- K_e is the cost of equity

Capital structure decision will decide weight of debt and equity and ultimately overall cost of capital as well as Value of the firm. So capital structure is relevant in maximizing value of the firm and minimizing overall cost of capital.

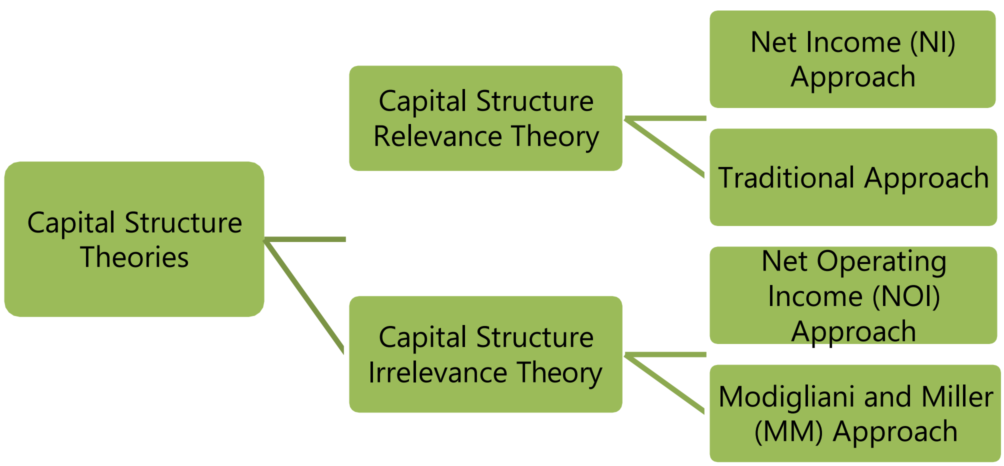
Whenever funds are to be raised to finance investments, capital structure decision is involved. A demand for raising funds generates a new capital structure since a decision has to be made as to the quantity and forms of financing. The process of financing or capital structure decision is depicted in the figure below.



Financing Decision Process

5.2 CAPITAL STRUCTURE THEORIES

The following approaches explain the relationship between cost of capital, capital structure and value of the firm:



(a) Net Income (NI) approach

(b) Traditional approach.

(c) Net Operating Income (NOI) approach

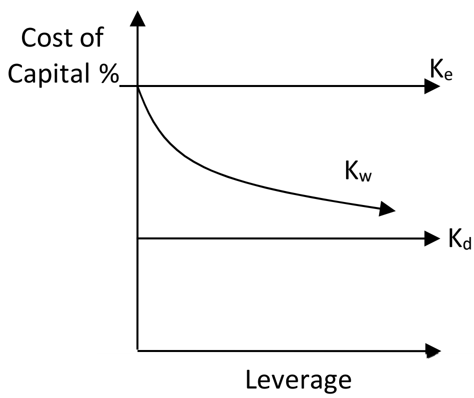
(d) Modigliani-Miller (MM) approach

However, the following assumptions are made to understand this relationship.

- There are only two kinds of funds used by a firm i.e. debt and equity.
- The total assets of the firm are given. The degree of average can be changed by selling debt to purchase shares or selling shares to retire debt.
- Taxes are not considered.
- The payout ratio is 100%.
- The firm's total financing remains constant.
- Business risk is constant over time.
- The firm has perpetual life.

5.2.1 Net Income (NI) Approach

According to this approach, capital structure decision is **relevant** to the value of the firm. An increase in financial leverage will lead to decline in the weighted average cost of capital (WACC), while the value of the firm as well as market price of ordinary share will increase. Conversely, a decrease in the leverage will cause an increase in the overall cost of capital and a consequent decline in the value as well as market price of equity shares.



From the above diagram, K_e and K_d are assumed not to change with leverage. As debt increases, it causes weighted average cost of capital (WACC) to decrease.

The value of the firm on the basis of Net Income Approach can be ascertained as follows:

$$\text{Value of Firm (V)} = S + D$$

Where,

V = Value of the firm

S = Market value of equity

D = Market value of debt

$$\text{Market value of equity (S)} = \frac{NI}{K_e}$$

Where,

NI = Earnings available for equity shareholders

K_e = Equity Capitalisation rate

Under, NI approach, the value of the firm will be maximum at a point where weighted average cost of capital (WACC) is minimum. Thus, the theory suggests total or maximum possible debt financing for minimising the cost of capital. The overall cost of capital under this approach is:

$$\text{Overall cost of capital} = \frac{EBIT}{\text{Value of the firm}}$$

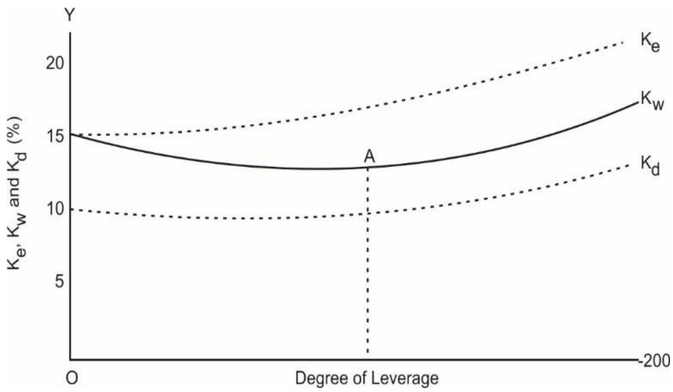
Thus according to this approach, the firm can increase its total value by decreasing its overall cost of capital through increasing the degree of leverage. The significant conclusion of this approach is that it pleads for the firm to employ as much debt as possible to maximise its value.

5.2.2 Traditional Approach

This approach favours that as a result of financial leverage up to some point, cost of capital comes down and value of firm increases. However, beyond that point, reverse trends emerge. The principle implication of this approach is that the cost of capital is dependent on the capital structure and there is an optimal capital structure which minimises cost of capital.

Under this approach:

1. The rate of interest on debt remains constant for a certain period and thereafter with an increase in leverage, it increases.
2. The expected rate by equity shareholders remains constant or increase gradually. After that, the equity shareholders starts perceiving a financial risk and then from the optimal point and the expected rate increases speedily.
3. As a result of the activity of rate of interest and expected rate of return, the WACC first decreases and then increases. The lowest point on the curve is optimal capital structure.



Optimum capital structure occurs at the point where value of the firm is highest and the cost of capital is the lowest.

According to net operating income approach, capital structure decisions are totally irrelevant. Modigliani-Miller supports the net operating income approach but provides behavioural justification. The traditional approach strikes a balance between these extremes.

Main Highlight of Traditional Approach

The firm should strive to reach the optimal capital structure and its total valuation through a judicious use of the both debt and equity in capital structure. At the optimal capital structure, the overall cost of capital will be minimum and the value of the firm will be maximum.

ILLUSTRATION 1

DETERMINE the optimal capital structure of a company from the following information:

Options	*Cost of Debt(Kd) in %*	*Cost of Equity(Ke) in %*	*Percentage of Debt on total value (Debt +Equity)*
1	*11*	*13.0*	*0.0*
2	*11*	*13.0*	*0.1*
3	*11.6*	*14.0*	*0.2*

4	*12.0*	*15.0*	*0.3*
5	*13.0*	*16.0*	*0.4*
6	*15.0*	*18.0*	*0.5*
7	*18.0*	*20.0*	*0.6*

SOLUTION

Note that the ration given in this question is not debt to equity ratio. Rather than it is the debt to value ratio. Therefore, if the ratio is 0.6, it means that capital employed comprises 60% debt and 40% equity.

$$KK_{00} = \frac{KK_{dd} \times DD + KK_{ee} \times SS}{DD + SS}$$

In this question total of weight is equal to 1 in all cases, hence we need not to divide by it.

1) K_0 = 11% x 0 + 13% x 1 = 13%

2) K_0 = 11% x 0.1 + 13% x 0.9 = 12.8%

3) K_0 = 11.6% x 0.2 + 14% x 0.8 = 13.52%

4) K_0 = 12% x 0.3 + 15% x 0.7 = 14.1%

5) K_0 = 13% x 0.4 + 16% x 0.6 = 14.8%

6) K_0 = 15% x 0.5 + 18% x 0.5 = 16.5%

7) K_0 = 18% x 0.6 + 20% x 0.4 = 18.8%

Decision: 2^{nd} option is the best because it has lowest WACC.

Net Operating Income Approach (NOI)

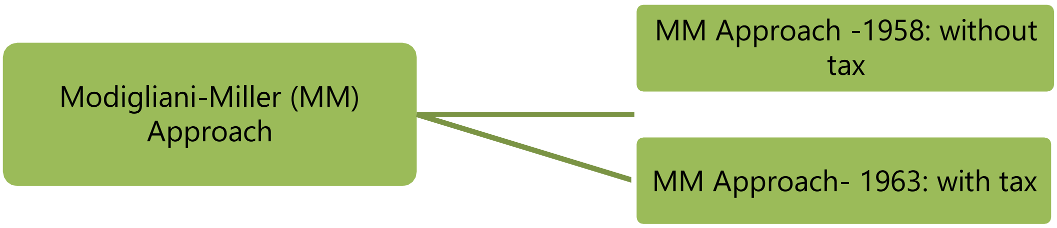
NOI means earnings before interest and tax (EBIT). According to this approach, capital structure decisions of the firm are **irrelevant**.

Any change in the leverage will not lead to any change in the total value of the firm and the market price of shares, as the overall cost of capital is independent of the degree of leverage. As a result, the division between debt and equity is irrelevant.

As per this approach, an increase in the use of debt which is apparently cheaper is offset by an increase in the equity capitalisation rate. This happens because equity investors seek higher compensation as they are opposed to greater risk due to the existence of fixed return securities in the capital structure.

5.2.3 Modigliani-Miller Approach (MM)

The NOI approach is definitional or conceptual and lacks behavioural significance. It does not provide operational justification for irrelevance of capital structure. However, Modigliani-Miller approach provides behavioural justification for constant overall cost of capital and therefore, total value of the firm.



MM Approach – 1958: without tax:

This approach describes, in a perfect capital market where there is no transaction cost and no taxes, the value and cost of capital of a company remain unchanged irrespective of change in the capital structure. The approach is based on further additional assumptions like:

- Capital markets are perfect. All information is freely available and there are no transaction costs.
- All investors are rational.
- Firms can be grouped into 'Equivalent risk classes' on the basis of their business risk.
- Non-existence of corporate taxes.

Based on the above assumptions, Modigliani-Miller derived the following three propositions:

(i) Total market value of a firm is equal to its expected net operating income divided by the discount rate appropriate to its risk class decided by the market.

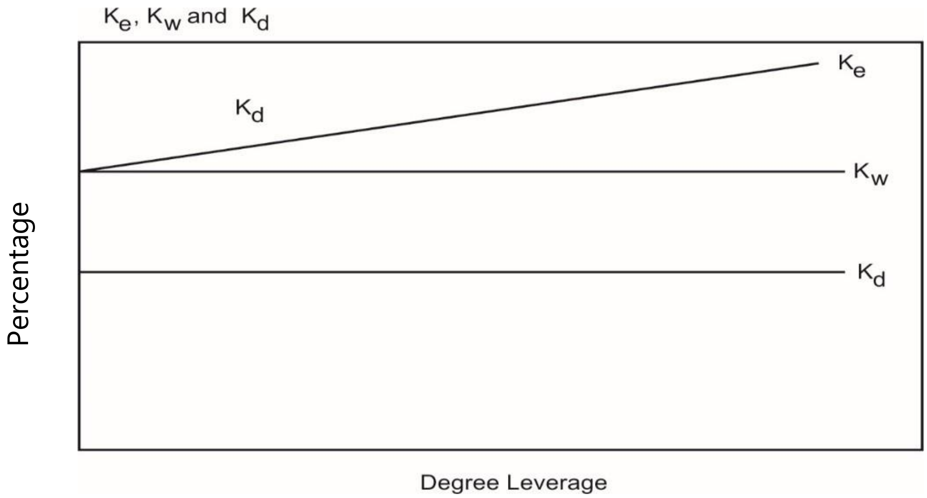
Value of levered firm (V_g) = Value of unlevered firm (V_u)

$$\text{Value of a firm} = \frac{\text{Net Operating Income(NOI)}}{K_0}$$

(ii) A firm having debt in capital structure has higher cost of equity than an unlevered firm. The cost of equity will include risk premium for the financial risk. The cost of equity in a levered firm is determined as under:

$$K_e = K_o + (K_o - K_d)\frac{\text{Debt}}{\text{Equity}}$$

(iii) The structure of the capital (financial leverage) does not affect the overall cost of capital. The cost of capital is only affected by the business risk.



It is evident from the above diagram that the average cost of the capital (K_o) is a constant and not affected by leverage.

The operational justification of Modigliani-Miller hypothesis is explained through the functioning of the arbitrage process and substitution of corporate leverage by personal leverage. Arbitrage refers to buying asset or security at lower price in one market and selling it at a higher price in another market. As a result, equilibrium is attained in different markets. This is illustrated by taking two identical firms of which one has debt in the capital structure while the other does not. Investors of the firm whose value is higher will sell their shares and instead buy the shares of the firm whose value is lower. They will be able to earn the same return at lower outlay with the same perceived risk or lower risk. They would, therefore, be better off.

The value of the levered firm can neither be greater nor lower than that of an unlevered firm according this approach. The two must be equal. There is neither advantage nor disadvantage in using debt in the firm's capital structure.

The approach considers capital structure of a firm as a whole pie divided into equity, debt and other securities. No matter how the capital structure of a firm is divided (among debt, equity etc.), there is a conservation of investment value. Since the total investment value of a corporation depends upon its underlying profitability and risk, it is invariant with respect to relative changes in the firm's financial capitalisation.

According to MM, since the sum of the parts must equal the whole, therefore, regardless of the financing mix, the total value of the firm stays the same.

The shortcoming of this approach is that the arbitrage process as suggested by Modigliani-Miller will fail to work because of imperfections in capital market, existence of transaction cost and presence of corporate income taxes.

MM Approach- 1963: with tax

In 1963, MM model was amended by incorporating tax, they recognised that the value of the firm will increase, or cost of capital will decrease where corporate taxes exist. As a result, there will be some difference in the earnings of equity and debt-holders in levered and unlevered firm and value of levered firm will be greater than the value of unlevered firm by an amount equal to amount of debt multiplied by corporate tax rate.

MM has developed the formulae for computation of cost of capital (K_o), cost of equity (K_e) for the levered firm.

(i) Value of a levered company = Value of an unlevered company + Tax benefit

Or, $V_g = V_u + TB$

(ii) Cost of equity in a levered company (K_{eg}) = $K_{eu} + (K_{eu} - K_d)\frac{\text{Debt}}{\text{Debit + Equity}}$

Where,

K_{eg} = Cost of equity in a levered company

K_{eu} = Cost of equity in an unlevered company

K_d = Cost of debt

t = Tax rate

(iii) WACC in a levered company (K_{og}) = $K_{eu}(1\text{-}tL)$

Where,

K_{og} = WACC of a levered company

K_{eu} = Cost of equity in an unlevered company

t = Tax rate

$L = \frac{\text{Debt}}{\text{Debt+Equity}}$

5.2.1 The Trade-off Theory

The trade-off theory of capital structure refers to the idea that a company chooses how much debt finance and how much equity finance to use by balancing the costs and benefits. Trade-off theory of capital structure basically entails offsetting the costs of debt against the benefits of debt.

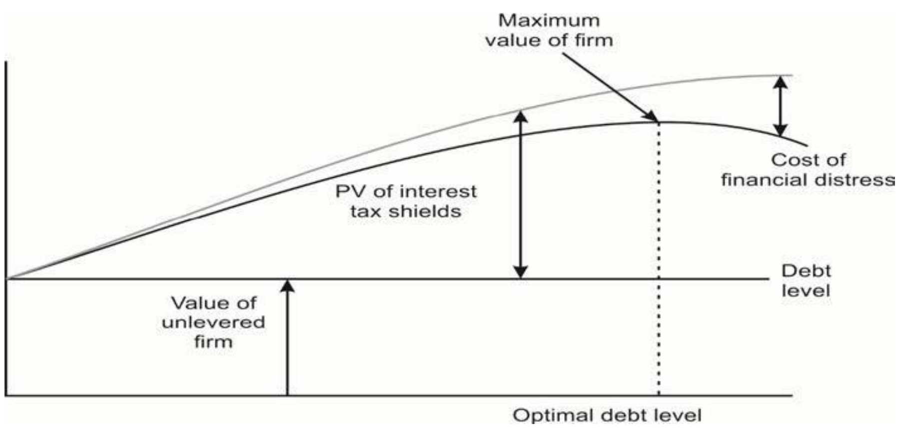
Trade-off theory of capital structure primarily deals with the two concepts - cost of financial distress and agency costs. An important purpose of the trade-off theory of capital structure is to explain the fact that corporations usually are financed partly with debt and partly with equity.

It states that there is an **advantage** to financing with debt, the **tax benefits** of debt and there is a **cost** of financing with debt, the costs of **financial distress** including bankruptcy costs of debt and non-bankruptcy costs (e.g. staff leaving, suppliers demanding disadvantageous payment terms, bondholder/ stockholder infighting, etc).

The marginal benefit of further increases in debt declines as debt increases, while the marginal cost increases, so that a firm that is optimizing its overall value will focus on this trade-off when choosing how much debt and equity to use for financing. Modigliani and Miller in 1963 introduced the tax benefit of debt. Later work led to an optimal capital structure which is given by the trade-off theory. According to Modigliani and Miller, the attractiveness of debt decreases with the personal tax on the interest income. A firm experiences financial distress when the firm is unable to cope with the debt holders' obligations. If the firm continues to fail in making payments to the debt holders, the firm can even be insolvent.

The first element of Trade-off theory of capital structure, considered as the cost of debt is usually the financial distress costs or bankruptcy costs of debt. The **direct cost of financial distress** refers to the cost of insolvency of a company. Once the proceedings of insolvency start, the assets of the firm may be needed to be sold at **distress price**, which is generally much lower than the current values of the assets. A huge amount of administrative and **legal costs** is also associated with the insolvency. Even if the company is not insolvent, the financial distress of the company may include a number of **indirect costs** like - cost of employees, cost of customers, cost of suppliers, cost of investors, cost of managers and cost of shareholders.

The firms may often experience a dispute of interests among the management of the firm, debt holders and shareholders. These disputes generally give birth to agency problems that in turn give rise to the agency costs. The agency costs may affect the capital structure of a firm. There may be two types of conflicts - shareholders-managers conflict and shareholders-debt holders conflict. The introduction of a dynamic Trade-off theory of capital structure makes the predictions of this theory a lot more accurate and reflective of that in practice.



As the Debt-equity ratio (i.e. leverage) increases, there is a trade-off between the interest tax shield and bankruptcy, causing an optimum capital structure, D/E*

5.2.2 Pecking order theory

This theory is based on Asymmetric information, which refers to a situation in which different parties have different information. In a firm, managers will have better information than investors. This theory states that firms prefer to issue debt when they are positive about future earnings. Equity is issued when they are doubtful and internal finance is insufficient.

The pecking order theory argues that the capital structure decision is affected by manager's choice of a source of capital that gives higher priority to sources that reveal the least amount of information.

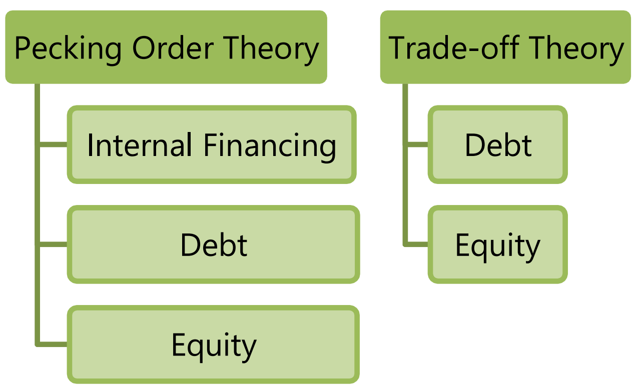
Myres has given the name 'PECKING ORDER' theory as here is no well-defined debt-equity target and there are two kind of equity internal and external. Now Debt is cheaper than both internal and external equity because of interest. Further internal equity is less than external equity particularly because of no transaction/issue cost, no tax etc.

Pecking order theory suggests that managers may use various sources for raising of fund in the **following order**.

1. Managers first choice is to use **internal finance**

2. In absence of internal finance they can use secured **debt**, unsecured debt, hybrid debt etc.

3. Managers may issue new **equity** shares as a last option.



Financial Hierarchy

5.3 FACTORS DETERMINING CAPITAL STRUCTURE

5.3.1 Choice of source of funds

A firm has the choice to raise funds for financing its investment proposals from different sources in different proportions. It can:

(a) Exclusively use debt (in case of existing company), or

(b) Exclusively use equity capital, or

(c) Exclusively use preference share capital (in case of existing company), or

(d) Use a combination of debt and equity in different proportions, or

(e) Use a combination of debt, equity and preference capital in different proportions, or

(f) Use a combination of debt and preference capital in different proportion (in case of existing company).

The choice of the combination of these sources is called capital structure mix. But the question is which of the pattern should the firm choose?

5.3.2 Factors affecting capital structure

While choosing a suitable financing pattern, certain fundamental principles should be kept in minds, to design capital structure, which are discussed below:

(1) ***Financial leverage of Trading on Equity***: The use of long-term fixed interest bearing debt and preference share capital along with equity share capital is called financial leverage or trading on equity. The use of long-term debt increases the earnings per share if the firm yields a return higher than the cost of debt. The earnings per share also increase with the use of preference share capital but due to the fact that interest is allowed to be deducted while computing tax, the leverage impact of debt is much more. However, leverage can operate adversely also if the rate of interest on long-term loan is more than the expected rate of earnings of the firm. Therefore, it needs caution to plan the capital structure of a firm.

(2) ***Growth and stability of sales:*** The capital structure of a firm is highly influenced by the growth and stability of its sale. If the sales of a firm are expected to remain fairly stable, it can raise a higher level of debt. Stability of sales ensures that the firm will not face any difficulty in meeting its fixed commitments of interest repayments of debt. Similarly, the rate of the growth in sales also affects the capital structure decision. Usually, greater the rate of growth of sales, greater can be the use of debt in the financing of firm. On the other hand, if the sales of a firm are highly fluctuating or declining, it should not employ, as far as possible, debt financing in its capital structure.

(3) ***Cost Principle:*** According to this principle, an ideal pattern or capital structure is one that minimises cost of capital structure and maximises earnings per share (EPS). For e.g. Debt capital is cheaper than equity capital from the point of its cost and interest being deductible for income tax purpose, whereas no such deduction is allowed for dividends.

(4) ***Risk Principle:*** According to this principle, reliance is placed more on common equity for financing capital requirements than excessive use of debt. Use of more and more debt means higher commitment in form of interest payout. This would lead to erosion of shareholders' value in unfavorable business situation. With increase in amount of Debt, financial risk increase and vice versa.

(5) ***Control Principle***: While designing a capital structure, the finance manager may also keep in mind that existing management control and ownership remains undisturbed. Issue of new equity will dilute existing control pattern and also it involves higher cost. Issue of more debt causes no dilution in control, but causes a higher degree of financial risk.

(6) ***Flexibility Principle***: By flexibility it means that the management chooses such a combination of sources of financing which it finds easier to adjust according to changes in need of funds in future too. While debt could be interchanged (If the company is loaded with a debt of 18% and funds are available at 15%, it can return old debt with new debt, at a lesser interest rate), but the same option may not be available in case of equity investment.

(7) ***Other Considerations***: Besides above principles, other factors such as nature of industry, timing of issue and competition in the industry should also be considered. Industries facing severe competition also resort to more equity than debt.

Thus, a finance manager in designing a suitable pattern of capital structure must bring about satisfactory compromise between the above principles. The compromise can be reached by assigning weights to these principles in terms of various characteristics of the company.

5.4 OPTIMAL CAPITAL STRUCTURE

Objective of financial management is to maximize wealth. Therefore one should chose a capital structure which maximizes wealth. For this purpose following analysis should be done:

1) EBIT-EPS-MPS Analysis: chose a capital structure which maximizes market price per share. For that start with same EBIT for all capital structures and calculate EPS. Thereafter either multiply EPS by price earning ration or divide it by cost of equity to arrive at MPS.

2) Indifference Point Analysis: In above analysis we have considered value at a given EBIT only. What will happen if EBIT changes? Will it change your decision also? To answer this question you can do indifference point analysis.

3) Financial Break Even point Analysis: With change in capital structure, financial risk also changes. Though this risk has already been considered in PE ratio or in cost of equity in point one above, but one may calculate and consider it separately also by calculating financial BEP.

5.5 EBIT-EPS-MPS ANALYSIS

5.5.1 Relationship between EBIT - EPS-MPS

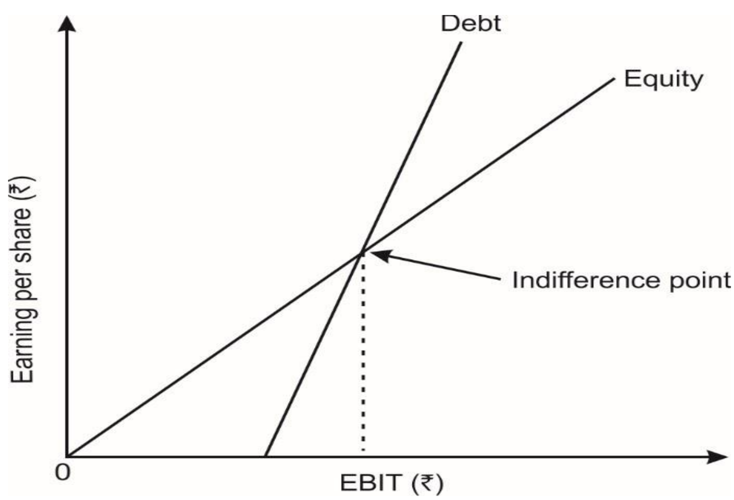
The basic objective of financial management is to design an appropriate capital structure which can provide the highest wealth, i.e., highest MPS, which in turn depends on EPS.

Given a level of EBIT, EPS will be different under different financing mix depending upon the extent of debt financing. The effect of leverage on the EPS emerges because of the existence of fixed financial charge i.e., interest on debt financial fixed dividend on preference share capital. The effect of fixed financial charge on the EPS depends upon the relationship between the rate of return on assets and the rate of fixed charge. If the rate of return on assets is higher than the cost of financing, then the increasing use of fixed charge financing (i.e., debt and preference share capital) will result in increase in the EPS. This situation is also known as favourable financial leverage or Trading on Equity. On the other hand, if the rate of return on assets is less than the cost of financing, then the effect may be negative and, therefore, the increasing use of debt and preference share capital may reduce the EPS of the firm.

The fixed financial charge financing may further be analyzed with reference to the choice between the debt financing and the issue of preference shares. Theoretically, the choice is tilted in favour of debt financing for two reasons: (i) the explicit cost of debt financing i.e., the rate of interest payable on debt instruments or loans is generally lower than the rate of fixed dividend payable on preference shares, and (ii) interest on debt financing is tax-deductible and therefore the real cost (after-tax) is lower than the cost of preference share capital.

Thus, the analysis of the different types of capital structure and the effect of leverage on the expected EPS and eventually MPS will provide a useful guide to selection of a particular level of debt financing. The EBIT-EPS analysis is of significant importance and if undertaken properly, can be an effective tool in the hands of a financial manager to get an insight into the planning and designing of the capital structure of the firm.

5.5.2 Financial Break-even and Indifference Analysis



Financial break-even point is the minimum level of EBIT needed to satisfy all the fixed financial charges i.e. interest and preference dividends. It denotes the level of EBIT for which the company's EPS equals zero.

If the EBIT is less than the financial breakeven point, then the EPS will be negative but if the expected level of EBIT is more than the breakeven point, then more fixed costs financing instruments can be taken in the capital structure, otherwise, equity would be preferred.

EBIT-EPS breakeven analysis is used for determining the appropriate amount of debt a company might carry.

Another method of considering the impact of various financing alternatives on earnings per share is to prepare the EBIT chart or the range of Earnings Chart. This chart shows the likely EPS at various probable EBIT levels. Thus, under one particular alternative, EPS may be ` 2 at a given EBIT level. However, the EPS may go down if another alternative of financing is chosen even though the EBIT remains at the same level. At a given EBIT, earnings per share under various alternatives of financing may be plotted. A straight line representing the EPS at various levels of EBIT under the alternative may be drawn. Wherever this line intersects, it is known as break-even point. This point is a useful guide in formulating the capital structure. This is known as EPS equivalency point or indifference point since this shows that, between the two given alternatives of financing (i.e., regardless of leverage in the financial plans), EPS would be the same at the given level of EBIT.

The equivalency or indifference point can also be calculated algebraically in the following manner:

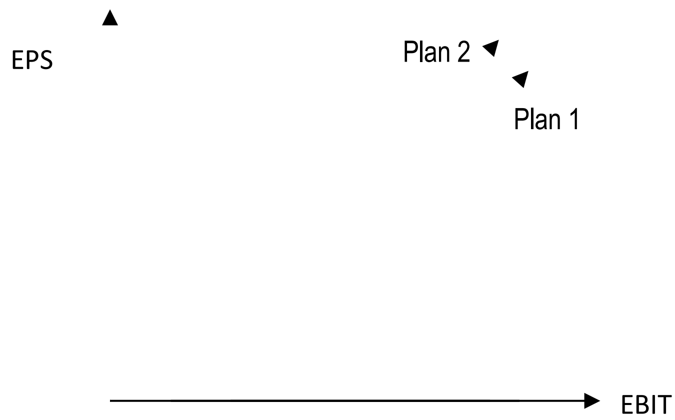
$$\frac{(EBIT - I_1)(1-t)}{E_1} = \frac{(EBIT - I_2)(1-t)}{E_2}$$

Where,

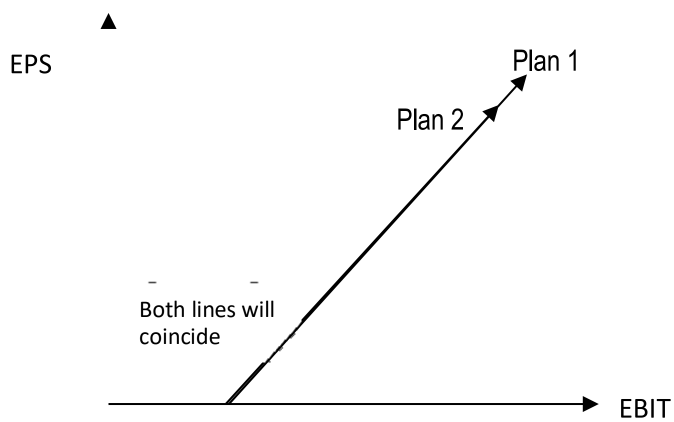
EBIT	=	Indifference point
E_1	=	Number of equity shares in Alternative 1
E_2	=	Number of equity shares in Alternative 2
I_1	=	Interest charges in Alternative 1
I_2	=	Interest charges in Alternative 2
T	=	Tax-rate

Just keep in mind that if amount of equity share capital is same under two financial plans then one of the following two situations will arise:

1. **No indifference point**: if after tax cost of the source other than equity shares is **not same** under both plans then there will be no indifference point between the two. Because one plan will be better than other at all levels of EBIT. For example if two plans have equity shares of ` 1,00,000 each. Plan 1 has 10% debentures of ` 50,000 while plan 2 has 8% Term loan of ` 50,000. Then plan 2 will be better than plan 1 at any level of EBIT and there will be no indifference point



2. **Many indifference points**: if after tax cost of the source other than equity shares is **same** under both plans then each EBIT will be an indifference point.



Debt-Equity Indifference Point

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5.6 OVER-CAPITALISATION AND UNDER - CAPITALISATION

5.6.1 Over- Capitalisation

It is a situation where a firm has more capital than it needs or in other words assets are worth less than its issued share capital, and earnings are insufficient to pay dividend and interest. This situation mainly arises when the existing capital is not effectively utilized on account of fall in earning capacity of the company while company has raised funds more than its requirements. The chief sign of over-capitalisation is the fall in payment of dividend and interest leading to fall in value of the shares of the company.

Causes of Over-Capitalisation: Over-capitalisation arises due to following reasons:

(i) Raising more money through issue of shares or debentures than company can employ profitably.

(ii) Borrowing huge amount at higher rate than rate at which company can earn.

(iii) Excessive payment for the acquisition of fictitious assets such as goodwill etc.

(iv) Improper provision for depreciation, replacement of assets and distribution of dividends at a higher rate.

(v) Wrong estimation of earnings and capitalisation.

Consequences of Over-Capitalisation: Over-capitalisation results in the following consequences:

(i) Considerable reduction in the rate of dividend and interest payments.

(ii) Reduction in the market price of shares.

(iii) Resorting to "window dressing".

(iv) Some companies may opt for reorganization. However, sometimes the matter gets worse and the company may go into liquidation.

Remedies for Over-Capitalisation: Following steps may be adopted to avoid the negative consequences of over-capitalisation:

(i) Company should go for thorough reorganization.

(ii) Buyback of shares.

(iii) Reduction in claims of debenture-holders and creditors.

(iv) Value of shares may also be reduced. This will result in sufficient funds for the company to carry out replacement of assets.

5.6.2 Under Capitalisation

It is just reverse of over-capitalisation. It is a state, when its actual capitalisation is lower than its proper capitalisation as warranted by its earning capacity. This situation normally happens with companies which have insufficient capital but large secret reserves in the form of considerable appreciation in the values of the fixed assets not brought into the books.

Consequences of Under-Capitalisation: Under-capitalisation results in the following consequences:

(i) The dividend rate will be higher in comparison to similarly situated companies.

(ii) Market value of shares will be higher than value of shares of other similar companies because their earning rate being considerably more than the prevailing rate on such securities.

(iii) Real value of shares will be higher than their book value.

Effects of Under-Capitalisation: Under-capitalisation has the following effects:

(i) It encourages acute competition. High profitability encourages new entrepreneurs to come into same type of business.

(ii) High rate of dividend encourages the workers' union to demand high wages.

(iii) Normally common people (consumers) start feeling that they are being exploited.

(iv) Management may resort to manipulation of share values.

(v) Invite more government control and regulation on the company and higher taxation also.

Remedies: Following steps may be adopted to avoid the negative consequences of under capitalization:

(i) The shares of the company should be split up. This will reduce dividend per share, though EPS shall remain unchanged.

(ii) Issue of Bonus Shares is the most appropriate measure as this will reduce both dividend per share and the average rate of earning.

(iii) By revising upward the par value of shares in exchange of the existing shares held by them.

5.6.3 Over-Capitalisation vis-à-vis Under-Capitalisation

From the above discussion it can be said that both over capitalisation and under capitalisation are not good. However, over capitalisation is more dangerous to the company, shareholders and the society than under capitalisation. The situation of under capitalisation can be handled more easily than the situation of over-capitalisation. Moreover, under capitalisation is not an economic problem but a problem of adjusting capital structure. Thus, under capitalisation should be considered less dangerous but both situations are bad and every company should strive to have a proper capitalisation.

SUMMARY

- **Capital Structure**: Capital structure refers to the mix of a firm's capitalisation (i.e. mix of long term sources of funds such as debentures, preference share capital, equity share capital and retained earnings for meeting total capital requirement). While choosing a suitable financing pattern, certain factors like cost, risk, control, flexibility and other considerations like nature of industry, competition in the industry etc. should be considered

- **Capital Structure Theories:-** The following approaches explain the relationship between cost of capital, capital structure and value of the firm:

  Net income approach

  Net operating income approach

  Modigliani-Miller approach

  Traditional approach

  Trade-off Theory

Pecking Order Theory

- **Optimal Capital Structure (EBIT-EPS Analysis):** The basic objective of financial management is to design an appropriate capital structure which can provide the highest earnings per share (EPS) over the firm's expected range of earnings before interest and taxes (EBIT). PS measures a firm's performance for the investors. The level of EBIT varies from year to year and represents the success of a firm's operations. EBIT-EPS analysis is a vital tool for designing the optimal capital structure of a firm. The objective of this analysis is to find the EBIT level that will equate EPS regardless of the financing plan chosen.
- **Over Capitalisation** : It is a situation where a firm has more capital than it needs or in other words assets are worth less than its issued share capital, and earnings are insufficient to pay dividend and interest.
- **Under Capitalisation** : It is just reverse of over-capitalisation. It is a state, when its actual capitalization is lower than its proper capitalization as warranted by its earning capacity