



SNS COLLEGE OF ENGINEERING

Kurumbapalayam (Po), Coimbatore - 641 107

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Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai**

DEPARTMENT OF MANAGEMENT STUDIES

COURSE NAME : 19BA201 FINANCIAL MANAGEMENT

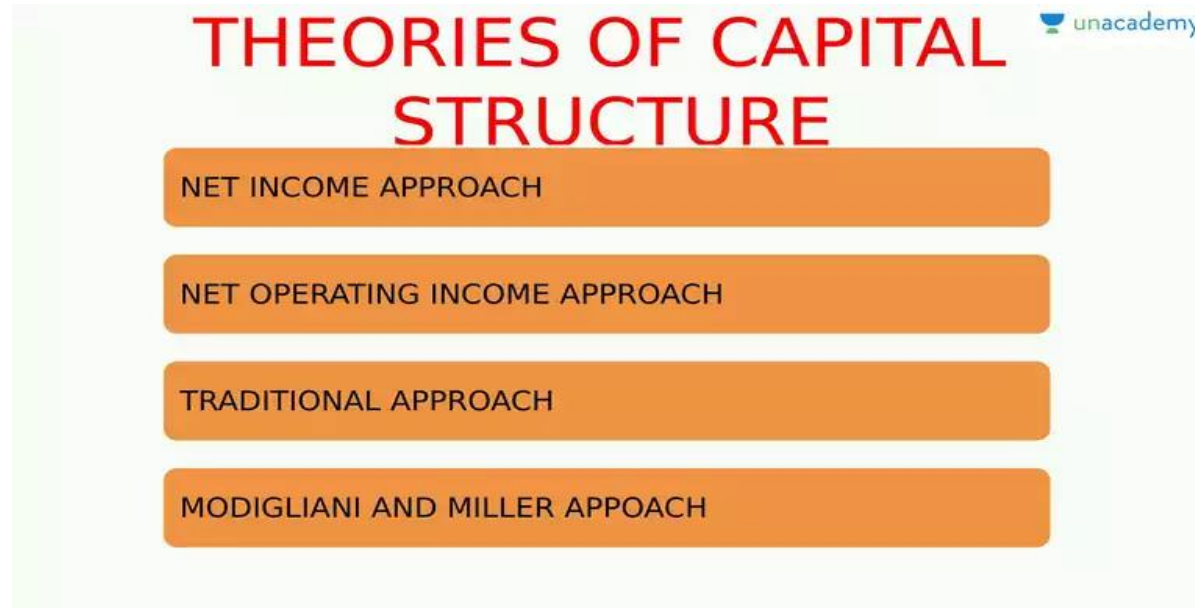
I YEAR / II SEMESTER

UNIT 3 - COST OF CAPITAL & CAPITAL STRUCTURE

What is Capital Structure Theory?

In financial management, capital structure theory refers to a systematic approach to financing business activities through a combination of equities and liabilities

The relationship between Cost of Capital and Valuation



Capital Structure Theory Assumptions

The capital structure theories use the following assumptions for simplicity:

- 1) The firm uses only two sources of funds: debt and equity.
- 2) The effects of taxes are ignored.
- 3) There is no change in investment decisions or in the firm's total assets.
- 4) No income is retained.

Net Income Approach (NI)

- Its cost of capital (WACC), and thus **directly affects the value of the firm.**
- NI approach assumptions –
 - NI approach assumes that a continuous increase in debt does not affect the risk perception of investors.
 - Cost of debt (K_d) is less than cost of equity (K_e) [i.e. $K_d < K_e$]
 - Corporate income taxes do not exist.

Net Income Approach (NI)

The total market value of the firm (V) under the Net Income Approach is ascertained by the following formula.

$$V = S + D$$

V = Total market value of the firm

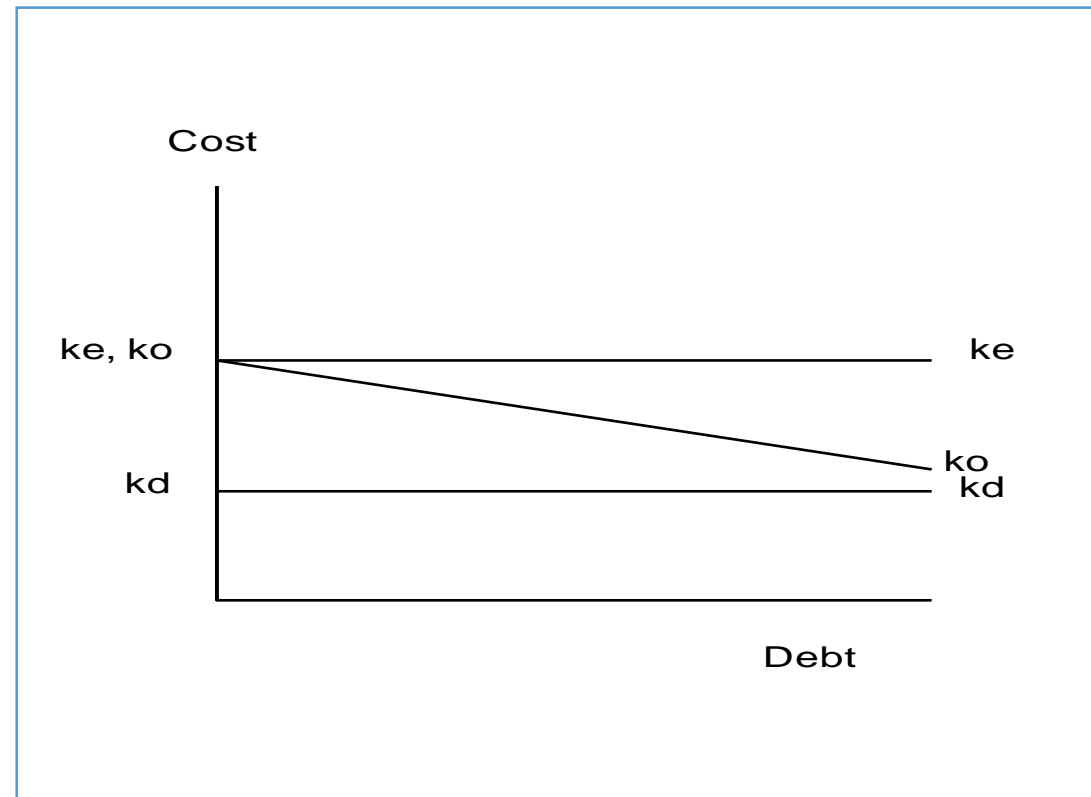
S = Market value of equity shares

D = Market value of debt

The overall cost of capital (K_o) Or Weighted average cost of capital is calculated under

Net Income Approach (NI)

As the proportion of debt (K_d) in capital structure increases, the WACC (K_o) reduces.



Net Operating Income (NOI)

- Net Operating Income (NOI) approach is the exact opposite of the Net Income (NI) approach.
- As per NOI approach, **value of a firm is not dependent upon** its capital structure.
- Assumptions –
 - WACC is always constant, and it depends on the business risk.
 - Value of the firm is calculated using the overall cost of capital i.e. the WACC only.
 - The cost of debt (K_d) is constant.
 - Corporate income taxes do not exist.

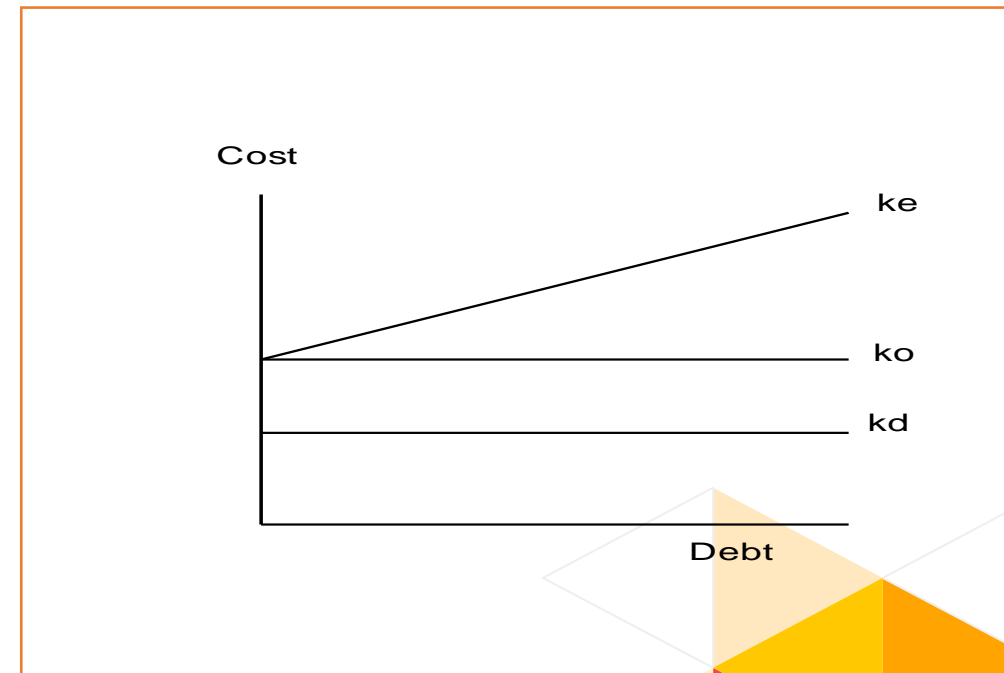
Net Operating Income (NOI)

- NOI propositions –

- ✚ The use of higher debt component (borrowing) in the capital structure increases the risk of shareholders.
- ✚ Increase in shareholders' risk causes the equity capitalization rate to increase, i.e. higher cost of equity (K_e)
- ✚ A higher cost of equity (K_e) nullifies the advantages gained due to cheaper cost of debt (K_d)
- ✚ In other words, the finance mix is irrelevant and does not affect the value of the firm.

Net Operating Income (NOI)

- Cost of capital (K_o) is constant.
- As the proportion of debt increases, (K_e) increases.
- No effect on total cost of capital (**WACC**)



Traditional Approach

- The NI approach and NOI approach hold extreme views on the relationship between capital structure, cost of capital and the value of a firm.
- Traditional approach (‘*intermediate approach*’) is a compromise between these two extreme approaches.
- Traditional approach confirms the existence of an optimal capital structure; where WACC is minimum and value of the firm is maximum.
- As per this approach, a best possible mix of debt and equity will maximize the value of the firm.

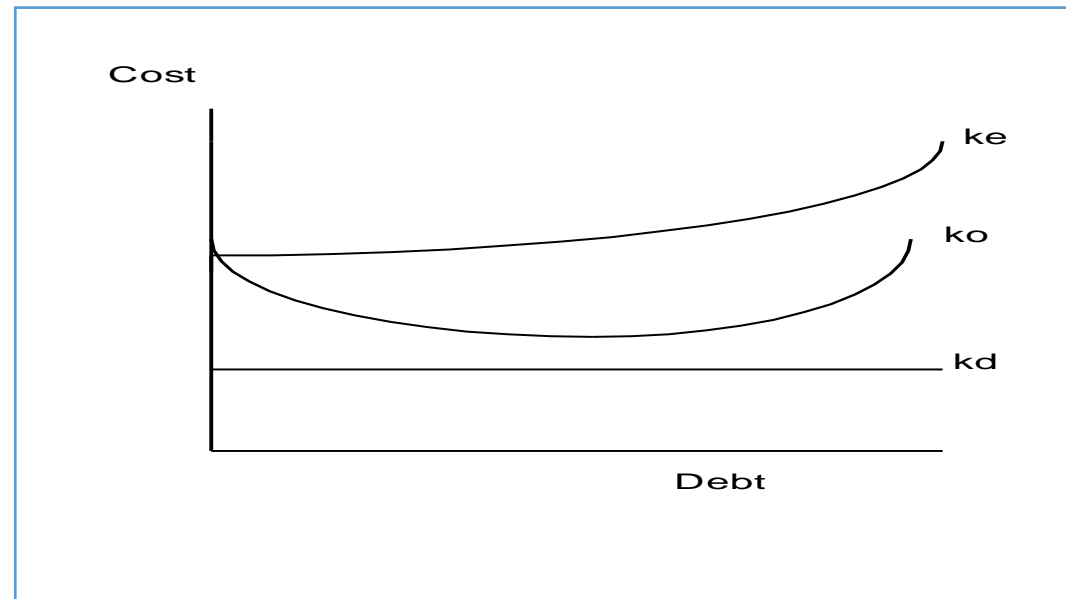
Traditional Approach

The approach works in 3 stages –

- 1) Value of the firm increases with an increase in borrowings (since $K_d < K_e$). As a result, the WACC reduces gradually. This phenomenon is up to a certain point.
- 2) At the end of this phenomenon, reduction in WACC ceases and it tends to stabilize. Further increase in borrowings will not affect WACC and the value of firm will also stagnate.
- 3) Increase in debt beyond this point increases shareholders' risk (*financial risk*) and hence K_e increases. K_d also rises due to higher debt, WACC increases & value of firm decreases.

Traditional Approach

- Cost of capital (K_o) is reduces initially.
- At a point, it settles
- But after this point, (K_o) increases, due to increase in the cost of equity.
(K_e)



Modigliani – Miller Model (MM)

- MM approach supports the NOI approach, i.e. the capital structure (debt-equity mix) has no effect on value of a firm.
- MODIGLIANI- MILLER explain the relationship between capital structure, cost of capital and value of the firm under two conditions:
 - 1. When there is no corporate taxes**
 - 2. When there is corporate taxes**

Modigliani – Miller Model (MM)

1. WHEN THERE IS NO CORPORATE TAXES

The MODIGLIANI- MILLER Approach is identical to NOI approach when there are no corporate taxes.

MODIGLIANI- MILLER argue that in the absence of taxes, the cost of capital and value of the firm are not affected by capital structure or debt-equity mix.

Modigliani – Miller Model (MM)

MM Approach Assumption

The MM hypothesis is based on the following assumption
There is perfect market. It implies that

- (a). Investors are free to buy and sell securities:
- (b). they can borrow freely on the same term as the firms do;
- (c). Investors act in a rational manner.



Modigliani – Miller Model (MM)

There are no corporate taxes.

There are no transaction costs.

The payout is 100 per cent. That is, all the earnings are distributed to shareholders.

Firms can be grouped into homogeneous risk classes.

Modigliani – Miller Model (MM)

2. When there are corporate taxes:

Modigliani and Miller have recognized that capital structure would affect the cost of capital and value of the firm, when there are corporate taxes.

If a firm uses debt in its capital structure, the cost of capital will decline and market value will increase. This is because of the deductibility of interest charges for computation of tax.

Modigliani – Miller Model (MM)

According to the M-M approach, the value of an unlevered firm (Which does not use debt) can be calculated as follows.

Value of unlevered firm, $V_u = \text{EBIT} / K_e (1-T)$

Where EBIT = Earnings Before Interest and Taxes

T = Tax rate K_e = Cost of equity

$$V_L = V_u + (T \times D)$$

Value of levered firm = Value of unlevered firm + (Tax rate x Debt)

Modigliani – Miller Model (MM)

Criticism are

1. Markets are not perfect
2. Higher interest for individuals
3. Personal leverage is no substitute for corporate leverage
4. Transaction costs
5. Corporate taxes



Thank You