# Capital Structure

# MEANING OF CAPITAL STRUCTURE

❖ Capital Structure refers to the combination or mix of debt and equity which a company uses to finance its long term operations.

❖     Raising of capital from different sources and their use in different assets by a company is made on the basis of certain principles that provide a system of capital so that the maximum rate of return can be earned at a minimum cost.

This sort of system of capital is known as **capital structure**.

# TOTAL REQUIRED CAPITAL

- From Shares
  - ✓ Equity Share capital
  - ✓ Preference Share Capital

- From Debentures

# FACTORS INFLUENCING CAPITAL STRUCTURE

- Internal Factors


- External Factors

# INTERNAL FACTORS

- Size of Business
- Nature of Business
- Regularity and Certainty of Income
- Assets Structure
- Age of the Firm
- Desire to Retain Control
- Future Plans
- Operating Ratio
- Trading on Equity
- Period and Purpose of Financing

# EXTERNAL FACTORS

- Capital Market Conditions
- Nature of Investors
- Statutory Requirements
- Taxation Policy
- Policies of Financial Institutions
- Cost of Financing
- Seasonal Variations
- Economic Fluctuations
- Nature of Competition

# OPTIMAL CAPITAL STRUCTURE

❑ The optimal or the best capital structure implies the most economical and safe ratio between various types of securities.

❑ It is that mix of debt and equity which maximizes the value of the company and minimizes the cost of capital.

# ESSENTIALS OF A SOUND OR OPTIMAL CAPITAL STRUCTURE

- Minimum Cost of Capital
- Minimum Risk
- Maximum Return
- Maximum Control
- Safety
- Simplicity
- Flexibility
- Attractive Rules
- Commensurate to Legal Requirements

# THEORIES OF CAPITAL STRUCTURE

- Net Income (NI) Theory

- Net Operating Income (NOI) Theory

- Traditional Theory

- Modigliani-Miller (M-M) Theory

# NET INCOME (NI) THEORY

- This theory was propounded by *"David Durand"* and is also known as "Fixed 'Ke' Theory".

- According to this theory a firm can increase the value of the firm and reduce the overall cost of capital by increasing the proportion of debt in its capital structure to the maximum possible extent.

- It is due to the fact that debt is, generally a cheaper source of funds because:

   (i) Interest rates are lower than dividend rates due to element of risk,

   (ii) The benefit of tax as the interest is deductible expense for income tax purpose.

# Computation of the Total Value of the Firm

Total Value of the Firm (V) = S + D

Where,

S = Market value of Shares = $\dfrac{EBIT\text{-}I}{Ke}$ = $\dfrac{E}{Ke}$

D = Market value of Debt = Face Value

E = Earnings available for equity shareholders

Ke = Cost of Equity capital or Equity capitalization rate.

# Computation of the Overall Cost of Capital or Capitalization Rate

- $K_o = \dfrac{\text{EBIT}}{V}$

Where,

$K_o$ = Overall Cost of Capital or Capitalization Rate

V = Value of the firm

# Case

- K.M.C. Ltd. Expects annual net income (EBIT) of Rs.2,00,000 and equity capitalization rate of 10%. The company has Rs.6,00,000; 8% Debentures. There is no corporate income tax.

- (A) Calculate the value of the firm and overall (weighted average) cost of capital according to the NI Theory.

- (B) What will be the effect on the value of the firm and overall cost of capital, if:

  (i) the firm decides to raise the amount of debentures by Rs.4,00,000 and uses the proceeds to repurchase equity shares.

  (ii) the firm decides to redeem the debentures of Rs. 4,00,000 by issue of equity shares.

# Net Operating Income Theory

- This theory was propounded by *"David Durand"* and is also known as *"Irrelevant Theory"*.

- According to this theory, the total market value of the firm (V) is not affected by the change in the capital structure and the overall cost of capital (Ko) remains fixed irrespective of the debt-equity mix.

# Assumptions of NOI Theory

- The split of total capitalization between debt and equity is not essential or relevant.

- The equity shareholders and other investors i.e. the market capitalizes the value of the firm as a whole.

- The business risk at each level of debt-equity mix remains constant. Therefore, overall cost of capital also remains constant.

- The corporate income tax does not exist.

# Computation of the Total Value of the Firm

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

Where,

Ko = Overall cost of capital

# Market Value of Equity Capital

$$S = V - D$$

Where,

$S$ = Market Value of Equity Capital

$V$ = Value of the Firm

$D$ = Market value of the Debt

# Cost of Equity Capital

- $Ke = \dfrac{EBIT - I}{S} \times 100$

Where,

Ke = Equity capitalization Rate or Cost of Equity

I = Interest on Debt

S = Market Value of Equity Capital

# Traditional Theory

This theory was propounded by Ezra Solomon.

According to this theory, a firm can reduce the overall cost of capital or increase the total value of the firm by increasing the debt proportion in its capital structure to a certain limit. Because debt is a cheap source of raising funds as compared to equity capital.

# Effects of Changes in Capital Structure on *'Ko'* and *'V'*

As per Ezra Solomon:

- First Stage: The use of debt in capital structure increases the *'V'* and decreases the *'Ko'*.
  - Because *'Ke'* remains constant or rises slightly with debt, but it does not rise fast enough to offset the advantages of low cost debt.
  - *'Kd'* remains constant or rises very negligibly.

# Effects of Changes in Capital Structure on *'Ko'* and *'V'*

- **Second Stage**: During this Stage, there is a range in which the *'V'* will be maximum and the *'Ko'* will be minimum.
  - Because the increase in the *'Ke'*, due to increase in financial risk, offset the advantage of using low cost of debt.
- **Third Stage**: The 'V' will decrease and the 'Ko' will increase.
  - Because further increase of debt in the capital structure, beyond the acceptable limit increases the financial risk.

# Computation of Market Value of Shares & Value of the Firm

$$S = \frac{EBIT - I}{Ke}$$

$$V = S + D$$

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

# Modigliani-Miller Theory

- This theory was propounded by Franco Modigliani and Merton Miller.

- They have given two approaches
  - In the Absence of Corporate Taxes
  - When Corporate Taxes Exist

# In the Absence of Corporate Taxes

- According to this approach the '*V*' and its '*Ko*' are independent of its capital structure.
- The debt-equity mix of the firm is irrelevant in determining the total value of the firm.
- Because with increased use of debt as a source of finance, '*Ke*' increases and the advantage of low cost debt is offset equally by the increased '*Ke*'.
- In the opinion of them, two identical firms in all respect, except their capital structure, cannot have different market value or cost of capital due to Arbitrage Process.

# Assumptions of M-M Approach

- Perfect Capital Market
- No Transaction Cost
- Homogeneous Risk Class: Expected EBIT of all the firms have identical risk characteristics.
- Risk in terms of expected EBIT should also be identical for determination of market value of the shares
- Cent-Percent Distribution of earnings to the shareholders
- No Corporate Taxes: But later on in 1969 they removed this assumption.

# When Corporate Taxes Exist

M-M's original argument that the 'V' and 'Ko' remain constant with the increase of debt in capital structure, does not hold good when corporate taxes are assumed to exist.

They recognised that the 'V' will increase and 'Ko' will decrease with the increase of debt in capital structure.

They accepted that the value of levered (V*L*) firm will be greater than the value of unlevered firm (V*u*).

# Computation

*Value of Unlevered Firm*

$$V_u = \frac{EBIT(1 - T)}{K_e}$$

*Value of Levered Firm*

$$V_L = V_u + Dt$$

Where,
$V_u$ : *Value of Unlevered Firm*
$V_L$ : *Value of Levered Firm*
D : Amount of Debt
t : tax rate