Capital Structure Theories

By, Chandan Kumar Singh

Contents

- Net Income Approach
- Net Operating Income Approach
- Miller Modigliani Approach
- Traditional Approach

Net Income Approach

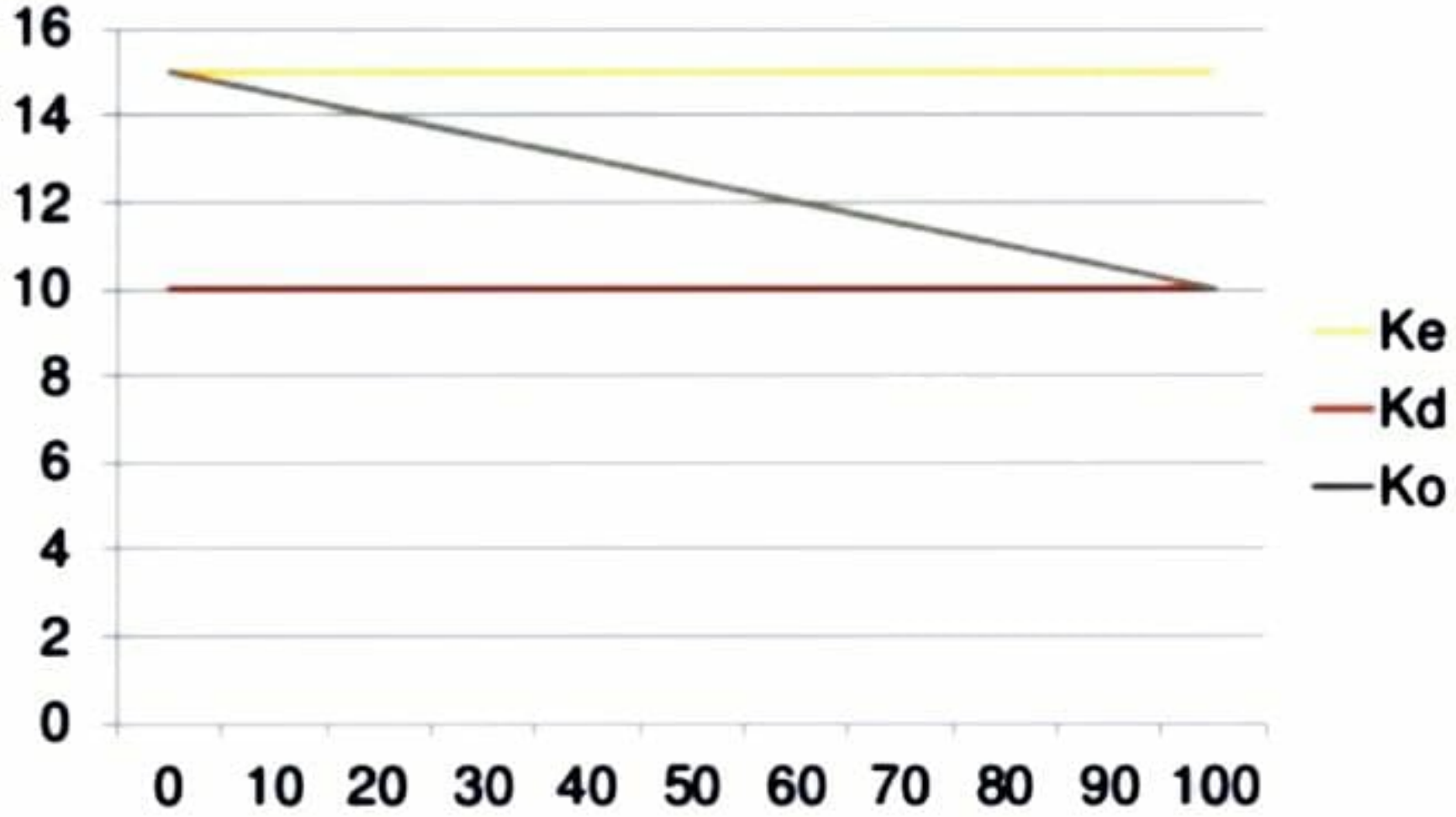
Assumptions to NI Approach

- Cost of Equity and Cost of Debt are constant
- Overall cost of capital (K_o) > Cost of Equity (K_e) > Cost of Debt (K_d)
- No Taxes applicable on income
- The expectations of investors do not change with the increased use of debt

Net Income Approach

- Everything else remaining constant, with the influx of debt in the capital structure, the overall cost of capital (K_o) of the firm decreases and thus increasing the value of the firm
  - Value of Firm = Value of Debt + Value of Equity
  - Value of Equity = Net Income/K_e
- In such a case, the value of an unlevered firm would be lower than a levered firm, this is called trading on equity

Relation of Costs in NI approach



Net Operating Income Approach

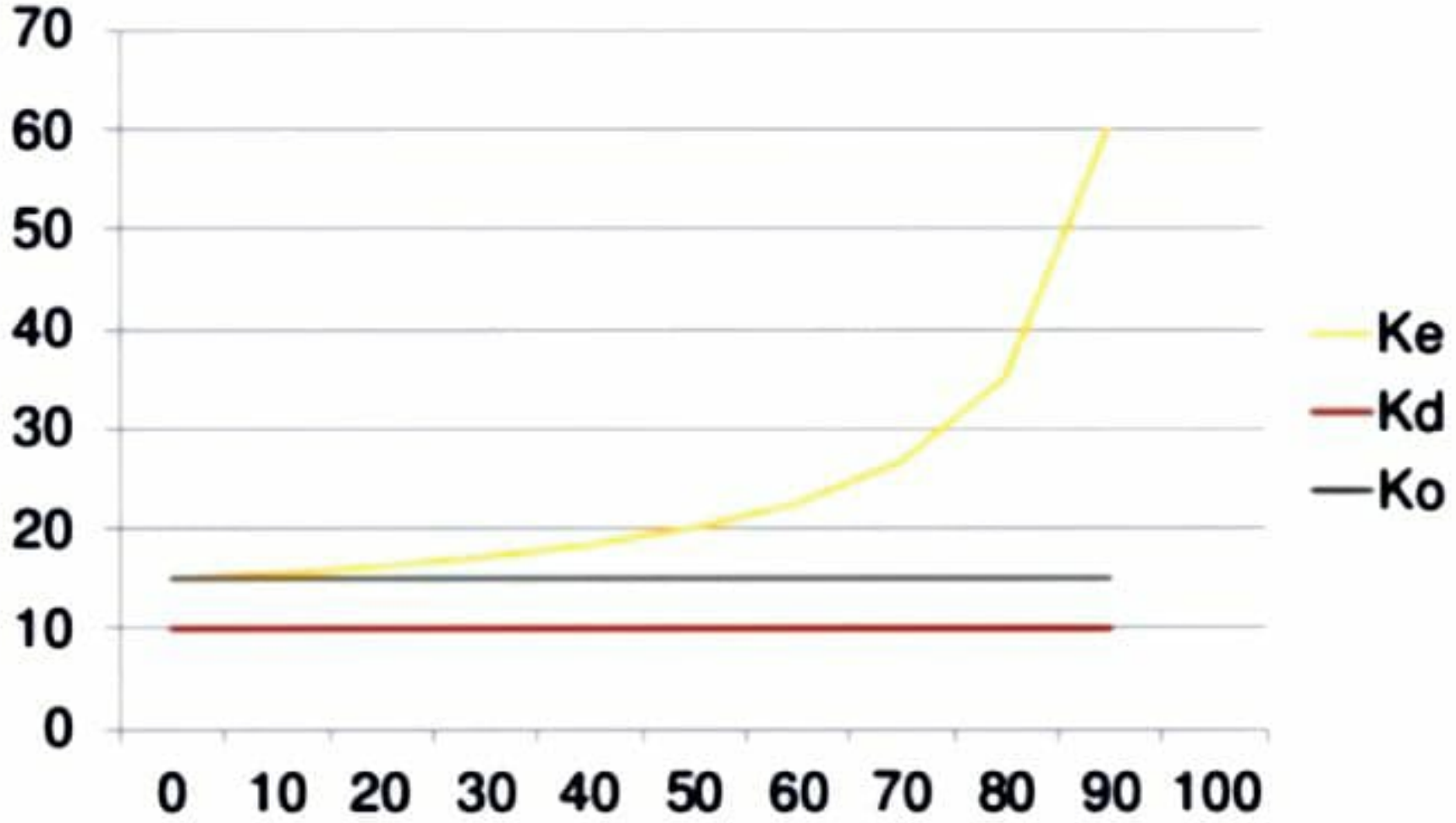
Assumptions of NOI Approach

- Use of Debt in Capital structure changes the risk perception of the investors
- The Overall cost of capital (K_o) remains constant for each mix of debt and equity
- Investors capitalize the operating income of the firm to find its total value
- Value of equity = Value of firm – Value of Debt
- Even with increase in debt funding, the cost of debt remains constant
- No Corporate Taxes

Net Operating Income Approach

- Everything remaining constant, with the influx of debt in the capital mix, the overall cost of capital (K_o) remains constant, the cost of equity (K_e) increases due to increase in leverage causing increase in risk
- In such a case, while the Value of firm remains constant, the value of equity of a levered firm becomes higher than the value of equity of an unlevered firm
- In such a case, K_e is given by K_e = Earnings attributable to Equity holders/Equity Share Capital

Relation of costs in NOI Approach



Miller Modigliani Approach

Introduction to Miller Modigliani Approach

- MM Approach is an extension of the NOI Approach, which suggests that there can never be a situation of a firm being unlevered.
- If a firm is unlevered, the investors of a levered firm will undertake personal leverage to obtain an arbitrage gain since the equity of an unlevered firm would be undervalued in the market

Assumptions of MM Approach

- No Corporate Taxes
- 100% Dividend payout ratio
- Perfect Capital Markets
  - Investors free to buy and sell securities
  - Investors can borrow at same rate as corporations
  - Investors are well informed and behave rationally
  - No Transaction Costs
- Investors have same expectations for the NOI of the company and use it as a basis to judge companies.
- All companies work in homogeneous risk environment

Arbitrage as per MM Approach

- Sell the equity of the levered firm
- Obtain debt funds in the same ratio as the levered form for the value disinvested
- Invest it into the equity of an unlevered firm

- Arbitrage gain
  - Since the K_e is higher than K_d, the return on the equity would be high enough to cover the old return and the interest on debt funds

MM Approach when Corporate Taxes Exist

- In case corporate taxes exist, the value of a levered firm will be lower than an unlevered form, this is because interest is tax deductible. It will exceed the unlevered firm by the amount equal to the debt of the levered firm multiplied by tax rate
  - Value of Levered Firm (V_l) = Value of unlevered firm (V_u) + Debt x Rate of Tax
  - V_u = Profits attributable to ESH (PAT)/K_e (Equity Capitalisation Rate)

Traditional Approach

Introduction to Traditional Approach

- The NI and NOI approach are faulty as they are unreasonable in their assumptions of the relations between K_e, K_d, and K_o. It assumes one or the other to be constant at any level of leverage.
- It is an intermediate approach between the two extremes of NI and NOI approaches.
- This approach is more realistic as it does not assume cost of equity, debt or overall cost to be constant which cannot be due to change in risk perceptions of both the investors and the lenders. The risk increases with increased leverage and so does the cost of debt

Optimum Capital Structure

- As per the traditional approach, the value of an unlevered firm can be increased initially with the influx of debt in the capital structure as a cheaper source of finance.
- As the proportion of debt increases, the risk to Equity investors increases, and thus the K_e also increases.
- On such progression, the cheaper debt becomes unavailable due to increasing leverage and thus the debt also start to become costlier
- This brings the firm to such a point where the lower cost debt introduced does not offset the cost of equity released and the K_o increases

Optimum Capital Structure (Contd.)

- In the beginning, with the introduction of debt the K_o will decrease until a certain level.
- After such a stage is attained, the decreasing trend of the overall cost of capital stops remains constant and then start increasing.
- The optimum capital structure is at the point where the overall cost start to remain constant.

Relation of Costs under Traditional Approach