Capital Structure

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Capital Structure

Capital Structure -- The mix (or proportion) of a firm's permanent long-term financing represented by debt, preferred stock, and common stock equity.

- Concerned with the effect of capital structure decisions on security prices.
- Assume: (1) investment and asset management decisions are held constant, and (2) consider only debt-versus-equity financing.

The Firm's Capital Structure

- Capital structure is one of the most complex areas of financial decision making due to its interrelationship with other financial decision variables.
- Poor capital structure decisions can result in a high cost of capital, thereby lowering project NPVs and making them more unacceptable, thereby decreasing the value of the firm.

Types of Capital

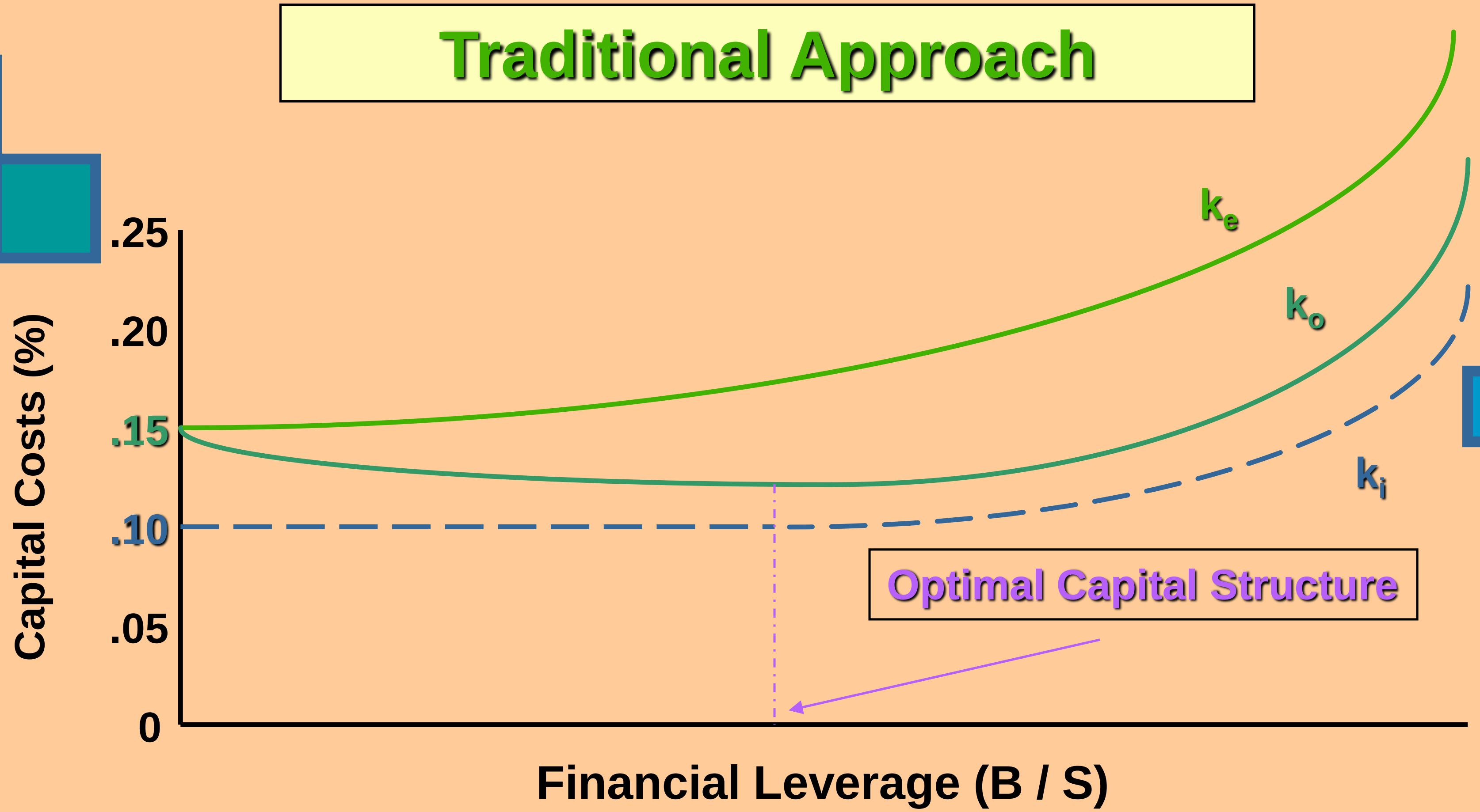
Balance Sheet			
Assets	Current liabilities		
	Long-term debt	Debt capital	Total capital
	Stockholders' equity Preferred stock Common stock equity Common stock Retained earnings	Equity capital	

Traditional Approach

Traditional Approach -- A theory of capital structure in which there exists an optimal capital structure and where management can increase the total value of the firm through the judicious use of financial leverage.

Optimal Capital Structure -- The capital structure that minimizes the firm's cost of capital and thereby maximizes the value of the firm.

Optimal Capital Structure: Traditional Approach



Summary of the Traditional Approach

- The cost of capital is dependent on the capital structure of the firm.
  - Initially, low-cost debt is not rising and replaces more expensive equity financing and k_o declines.
  - Then, increasing financial leverage and the associated increase in k_e and k_i more than offsets the benefits of lower cost debt financing.
- Thus, there is one optimal capital structure where k_o is at its lowest point. This is also where the firm's total value will be the largest.

Example of the Effects of Corporate Taxes

The judicious use of financial leverage (i.e., debt) provides a favorable impact on a company's total valuation.

Consider two identical firms <u>EXCEPT</u>:

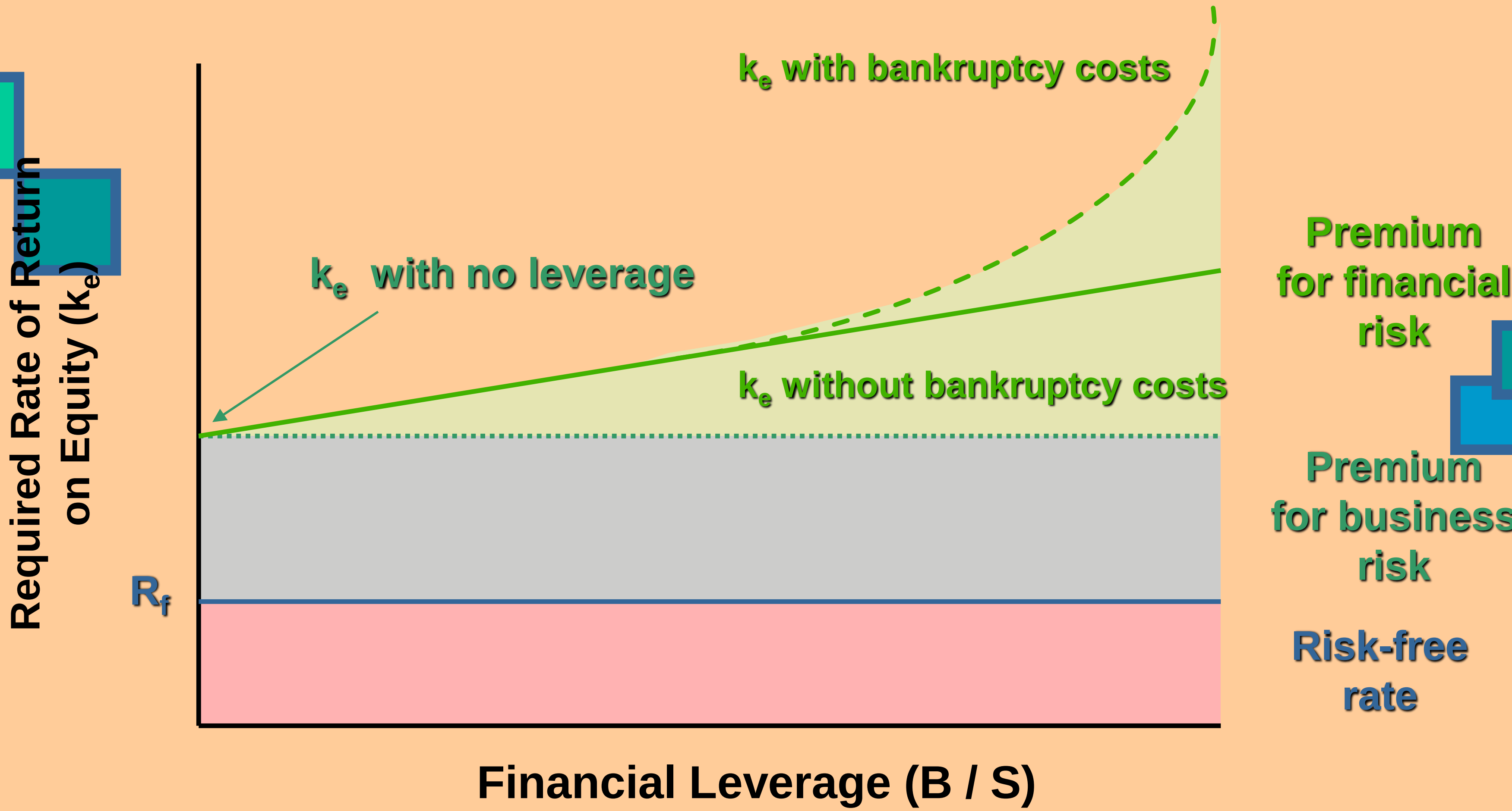
Summary of Corporate Tax Effects

- The greater the financial leverage, the lower the cost of capital of the firm.
- **This implies a capital structure of almost 100% debt!** Yet, this is ***not*** consistent with actual behavior.

Market Imperfections and Incentive Issues

- Bankruptcy costs
  - Agency costs
  - Debt and the incentive to manage efficiently
  - Institutional restrictions
  - Transaction costs

Required Rate of Return on Equity with Bankruptcy



Agency Costs

Agency Costs -- Costs associated with monitoring management to ensure that it behaves in ways consistent with the firm's contractual agreements with creditors and shareholders.

- Monitoring includes bonding of agents, auditing financial statements, and explicitly restricting management decisions or actions.
- Costs are borne by shareholders (Jensen & Meckling).
- Monitoring costs, like bankruptcy costs, tend to rise at an increasing rate with financial leverage.

Bankruptcy Costs, Agency Costs, and Taxes

Value of levered firm

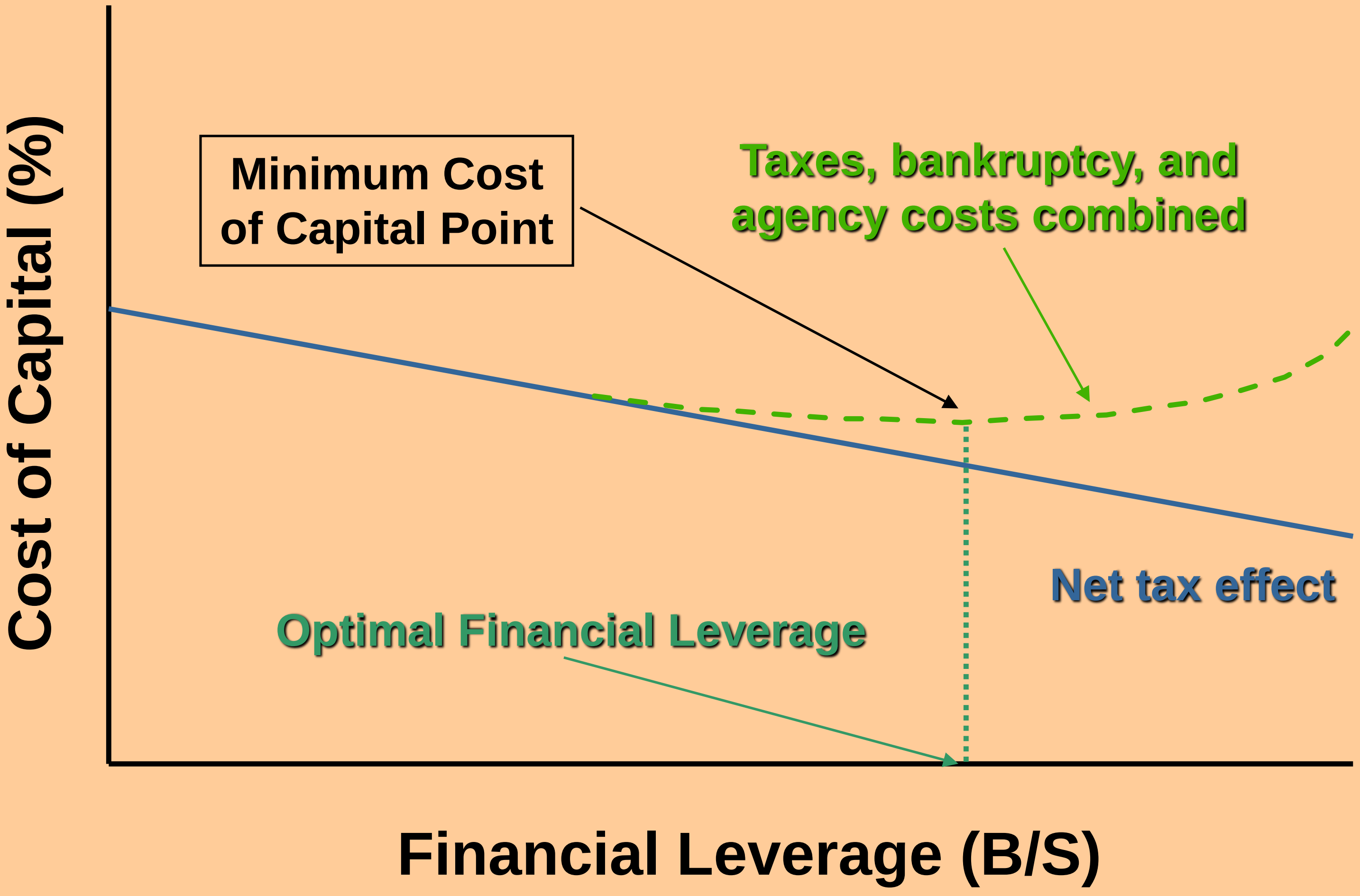
= **Value of firm if unlevered**

+ **Present value of tax-shield benefits of debt**

- **Present value of bankruptcy and agency costs**

As financial leverage increases, tax-shield benefits increase as do bankruptcy and agency costs.

Bankruptcy Costs, Agency Costs, and Taxes



Financial Signaling & Pecking Order Theory ...

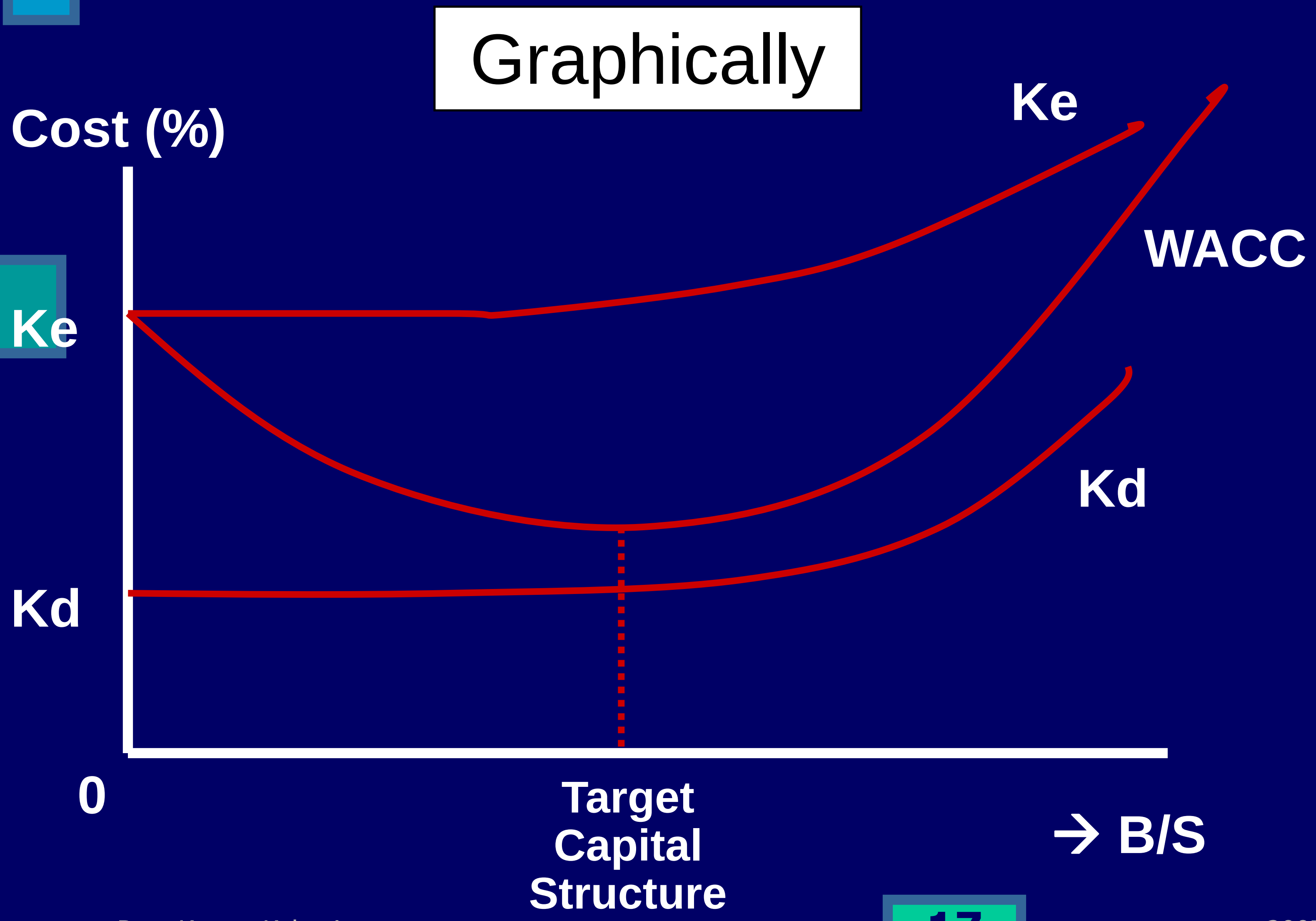
- A manager may use capital structure changes to convey information about the profitability and risk of the firm.
  - Informational Asymmetry is based on the idea that insiders (managers) know something about the firm that outsiders (security holders) do not.
  - Changing the capital structure to include more debt conveys that the firm’s stock price is undervalued.
  - This is a valid signal because of the possibility of bankruptcy.

Internal Assessment of Capital Structure

The debt-to-equity ratios for companies are sector dependent and range from:

- Power: 2 to 4
- FMCG: 0.1 to 0.7
- Fertilizer: 1.5 to 3.4
- Software: 0 to 0.4
- Automobile: 0.5 to 1.5

The Optimal Capital Structure



Other Influences on Capital Structure Choice

Flexibility

Maintaining financial flexibility simply means that a company would like to give itself slack in terms of being able to raise additional capital to support working capital requirements of if desirable investment opportunities arise.

As a result, most firms try to ensure that they have excess borrowing capacity available by keeping debt levels at manageable levels.

Other Influences on Capital Structure Choice

Timing

The sale of securities by most firms depend not only on the investment opportunities available but also on the the cost of capital at a particular point in time.

Successful companies usually try to forecast and take advantage of changing market conditions to lower their overall cost of raising funds.

Other Influences on Capital Structure Choice

Corporate Control

Many firms avoid the issuance of new equity because it may cause existing controlling shareholders to lose their ability to influence the direction of the company.

As a result, most companies are reluctant to issue new shares of stock and instead issue debt when additional funds are needed.

Other Influences on Capital Structure Choice

Maturity Matching

Many firms also try to match the maturity of their source of financing with the maturity of the assets they are using the funds to finance. As a result, the capital structure of a firm is determined in part by the types of investments it makes.

Other Influences on Capital Structure Choice

Management's Attitude Toward Risk

Management's perception about the risk of using debt versus equity to finance assets will also determine the nature of a company's capital structure.

Methods of Analysis

- Often, firms are compared to peer groups in the same industry.
- Large deviations from norms must be justified.
- For example, an industry's median debt-to-net-worth ratio might be used as a benchmark for financial leverage comparisons.

Empirical Research on factors determining capital structure

- Vanga Nagi Reddy and Self, "Econometric Analysis of the Capital Structure Determinants" (March 1998). Indian Institute of Management Calcutta (IIMC)Working Paper Series No. WPS-333/98
- Available at SSRN: http://ssrn.com/abstract=957087
- Capital Market Conditions
- Profitability
- Owners Inclinations (State-owned, Indian-owned, MNC-owned, etc.)

Empirical Research on factors determining capital structure

- Industry Characteristics
  - Capital Intensiveness
  - Uniqueness
  - Regulatory Restrictions
- Examples: Infosys, NEPC, Reliance, ICICI Bank, Hindustan Lever, Shree Rama Multi-Tech, Mercator Lines, Kilburn Chemicals, NTPC, Pioneer Distilleries …