

FINANCING DECISIONS

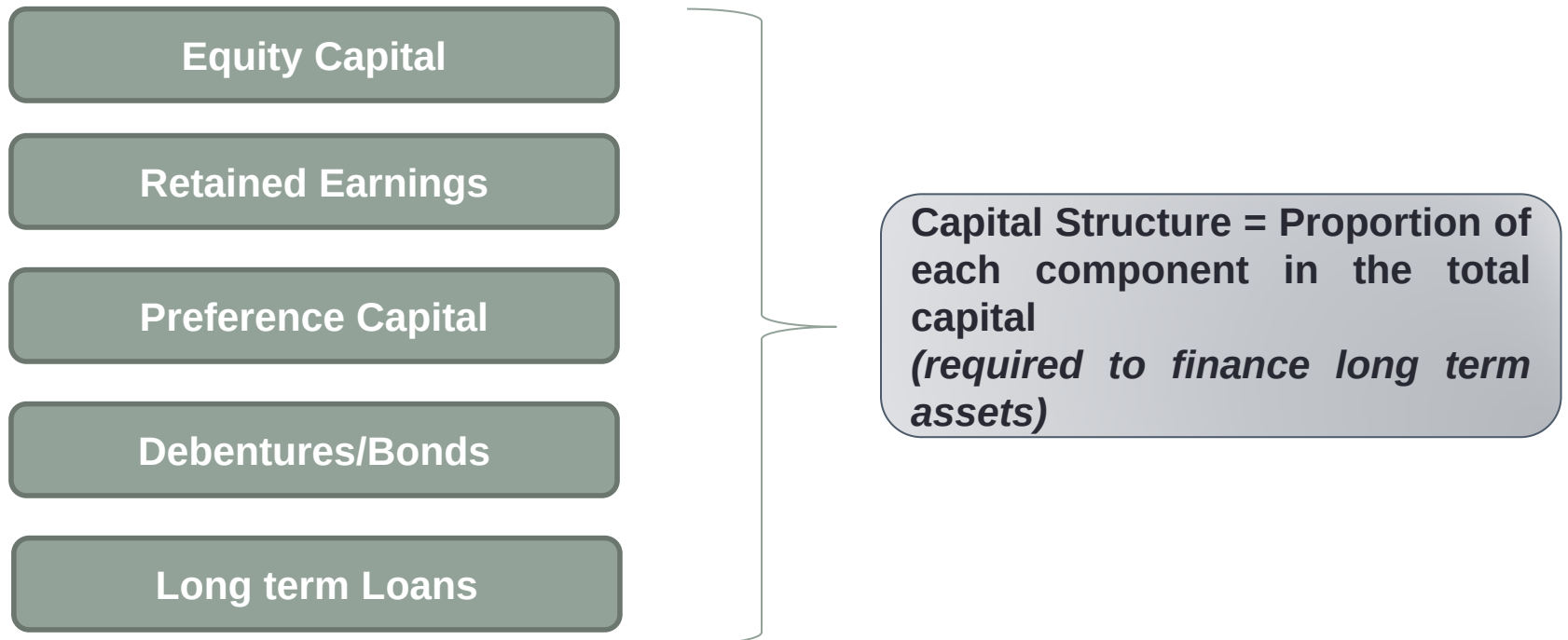
Session 2

Topics for the Session

- Capital Structure
- What is Capitalization?
- Over-Capitalization Vs. Under Capitalization
- Capitalization Vs. Capital Structure Vs. Financial Structure
- Importance of Capital Structure
- Factors affecting decisions on Capital Structure
- Leverages – Operating; Financing and Combined Leverage

What is Capital Structure?

- Capital structure refers to the **proportion** of long-term debt and equity in the total capital of a company.
- It refers to a way a in which the company **finances its assets** through some combination of equity, debt, or hybrid securities.



Capital Structure - Dynamics

A company

Investment dynamics

Capital Structure	Risk	Return	Ownership	Performance
Assets	Low risk	Low return • Interest • Capital back	No ownership rights	Temporal
	High risk	High return • Dividend • Capital growth	Ownership rights – voting rights	Permanent

Capitalization

- In finance, capitalization in finance is the sum of a company's debt and equity.
- It represents the capital invested in the company, including bonds and stocks.
- It can also mean market capitalization. Market capitalization is the value of a company's outstanding shares of stock.

Market Capitalization = Shares Outstanding x Share Price

Over-Capitalization Vs. Under-Capitalization

Over-capitalization

- Overcapitalization occurs when a company has issued more debt and equity than its assets are worth.
- The market value of the company is less than the total capitalized value of the company.
- An overcapitalized company might be paying more in interest and dividend payments than it has the ability to sustain long-term.
- The heavy debt burden and associated interest payments might be a strain on profits and reduce the amount of retained funds the company has to invest in research and development or other projects.
- To escape the situation, the company may need to reduce its debt load or buy back shares to reduce the company's dividend payments.
- **Restructuring the company's capital is a solution to this problem.**

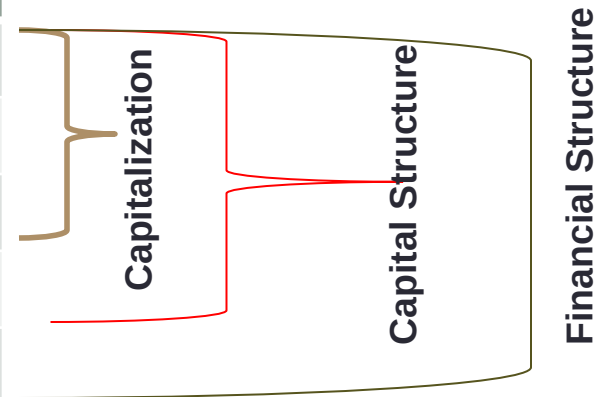
Over-Capitalization Vs. Under-Capitalization

Under-capitalization

- Undercapitalization occurs when a company does not have sufficient capital to conduct normal business operations and pay creditors.
- This can occur when the company is not generating enough cash flow or is unable to access forms of financing such as debt or equity.
- Undercapitalized companies also tend to choose high-cost sources of capital, such as short-term credit, over lower-cost forms such as equity or long-term debt.
- Being undercapitalized is a trait most often found in young companies that do not adequately anticipate the initial costs associated with getting a business up and running
- Undercapitalization can also occur in large companies that take on significant amounts of debt and suffer from poor operating conditions.
- **If a company can't generate capital over time, it increases its chance of going bankrupt as it loses the ability to service its debts.**

Capitalization Vs. Capital Structure VS. Financial Structure

Liabilities side of Balance Sheet	Amount
Equity Shares	2,00,000
Preference Shares	1,50,000
Debentures	2,00,000
Reserves & Surplus	2,50,000
Current Liabilities	4,00,000
Total	12,00,000



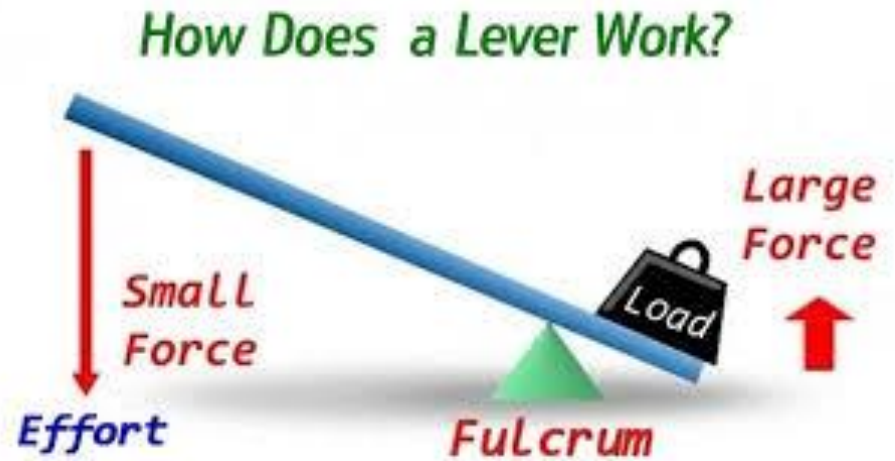
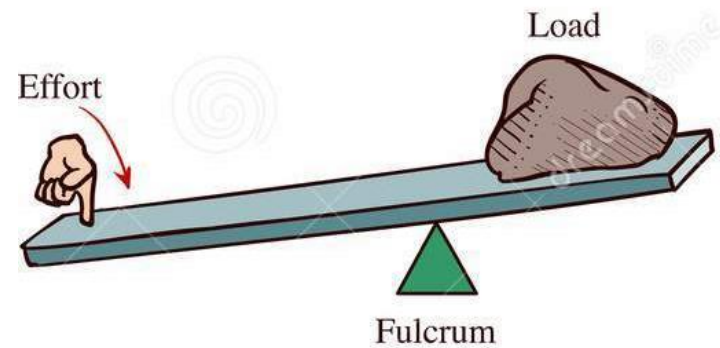
Importance of Capital Structure

- Increase in value of the firm
- Utilization of available funds
- Maximization of return
- Minimization of cost of capital
- Solvency or liquidity position
- Flexibility of raising funds
- Undisturbed controlling
- Minimization of financial risk

Factors Determining Capital Structure

- Operating Margin to Net Margin Analysis
- Risk in variation of earnings
- Cost of Capital
- Control of Operations
- Financial Leverage (Trading of Equity)
- Size of the Company
- Investor Mix
- Nature of the Business
- Purpose of Financing
- Corporate taxation
- Cash Inflows
- Tenure of the Finance
- Flexibility
- Government Policies
- Control of Operations
- Provision for future
- Risk of cash insolvency

Leverages



Leverages

‘Leverage’ is the means which a business firm can increase the profits,

“The force will be applied on Fixed Costs and/or debt, the benefit of this reflected in the form of higher returns to equity shareholders”

Leverages

Template for Computation of Leverages

Particulars	Amount
Sales	XXXX
Less: Variable Cost	(XXXX)
Contribution	XXX
Less: Fixed Costs	(XX)
EBIT	XXX
Less: Interest	(XX)
EBT	XX
Less: Tax	(X)
EAT	XX

Leverages

The operating cost of a firm is classified into three types: **Fixed cost, variable cost and semi-variable or semi-fixed cost.**

Fixed cost is a contractual cost and is a function of time. So it does not change with the change in sales and is paid regardless of the sales volume.

Variable costs vary directly with the sales revenue. If no sales are made variable costs will be nil.

Semi-variable or semi-fixed costs vary partly with sales and remain partly fixed. These change over a range of sales and then remain fixed. *(For the purpose of calculating leverages, these costs are divided into fixed and variable cost using suitable assumptions)*

Types of Leverages

Operating Leverage	Signifies the Leverage of change in the Fixed Operating Cost (i.e. Higher investment in operational aspects) on <u>the returns to equity shareholders</u> ”
Financial Leverage	Signifies the Leverage of change in the capital structure (i.e. proportion of debt) on <u>the returns to equity shareholders</u> ”
Combined Leverage	Signifies the Leverage of <u>both</u> change in Fixed Operating Costs and also the capital structure (i.e. proportion of debt) on <u>the returns to equity shareholders</u> ”

Operating Leverages

The firm's ability to use fixed operating costs to magnify the effects of changes in sales on its earnings before interest and taxes is termed as operating leverage.

Operating leverage is concerned with the investment activities of the firm. It relates to the incurrence of fixed operating costs in the firm's production process.

With the use of fixed costs, the firm can magnify the effect of change in sales on change in EBIT. (The effect being positive or negative)

Operating leverage is measured by computing the **Degree of Operating Leverage (DOL)**.

Operating Leverages

Operating Leverage = Contribution / Sales

Degree of Operating Leverage = % Change in Profits / % Change in Sales

The percentage change in the EBIT relative to a given percentage change in sales is defined as the DOL.

The higher is the proportion of fixed operating cost in the cost structure, higher is the degree of operating leverage.

Operating Leverages

Particulars	A	B
Selling Price	10	10
Variable Cost (VC Per Unit)	6	4
Fixed Cost	0	10000

Case 1

Number of Units Sold	5000	5000
Sales (Units Sold X SP)	50000	50000
Less: Variable Cost (VC X Units Sold)	30000	20000
Contribution	20000	30000
Less: Fixed Cost	0	10000
Operating Profit (EBIT)	20000	20000

Case 2

Number of Units Sold	10000	10000
Sales (Units Sold X SP)	100000	100000
Less: Variable Cost (VC X Units Sold)	60000	40000
Contribution	40000	60000
Less: Fixed Cost	0	10000
Operating Profit (EBIT)	40000	50000

Observations

Particulars	A		B	
	5000 Units	10000 Units	5000 units	10000 Units
Total Sales	50,000	1,00,000	50,000	1,00,000
% Increase in Sales		100%		100%
Operating Profit (EBIT)	20,000	40,000	20,000	50,000
% Increase in EBIT		100%		150%

Operating Leverages

Particulars	A	B
Selling Price	10	10
Variable Cost (VC Per Unit)	6	4
Fixed Cost	0	10000

Calculation of Breakeven Point of Both the firms:

Breakeven point = fixed cost / contribution per unit

Company A does not have fixed cost in its cost structure, it can earn a profit even by selling one single unit.

Company B:

Fixed cost of Company B = 10,000

contribution per unit = selling price - variable cost per unit = $[10 - 4 = 6]$

Breakeven point = $10000 / 6 = 1667$ units.

Operating Leverages

Conclusion:

Growth rate in sales of both the companies is same as 100.

Company A doesn't have fixed cost in its cost structure. As a result, it doesn't enjoy operational leverage. Hence, the growth rate in operating profit of Company A is same as growth rate in its sales.

Company B has fixed the cost in its cost structure. As a result, it enjoys operating leverage. As it can be seen, due to its operating leverage, the growth rate in operating profit of Company B stands at 150% against its growth rate of sales which stands at hundred percent.

It shall be noted that mere presence of fixed cost does not help a company to increase its operating profit. Operating leverage works only when fixed cost is employed in such a way to minimise variable cost per unit. It can be observed that company A doesn't have fixed cost and hence its variable cost per unit is INR 6. On the other hand, company B has fixed cost in its cost structure, which helps it to reduce its variable cost per unit to INR 4.

Presence of fixed cost pushes breakeven point to a higher level. Company A, has no fixed cost, it can start earn profit even by selling single unit. Company B has fixed cost, it requires 1667 units to sell to reach breakeven point.

Financial Leverages

Financial leverage is mainly related to the mix of debt and equity in the capital structure of a firm.

It exists due to the existence of fixed financial charges **that do not depend on the operating profits of the firm.**

Various sources from which funds are used in financing of a business can be categorized into funds having fixed financial charges and funds with no fixed financial charges.

Debentures, bonds, long-term loans and preference shares are included in the first category and equity shares are included in the second category.

Financial Leverages

Financial leverage may be defined as the firm's ability to use fixed financial charges to magnify the effects of changes in EBIT on its EPS.

With the use of fixed financial charges, a firm can magnify the effect of change in EBIT on change in EPS.

Financing decision goes in favor of employing funds having fixed financial charges because it can be used as a lever.

The higher the proportion of fixed charge bearing fund in the capital structure of a firm, higher is the Degree of Financial Leverage (DFL) and vice-versa

Increasing the value of Earnings Per Share (EPS) with an increase in Debt component is called **Financial Leverage**.

Financial Leverages

$$\text{Financial Leverage} = \text{EBIT} / \text{EBT}$$

Degree of financial leverage (DFL) = % Change in EPS / % change in operating profit

DOF tells us the most appropriate value of earnings per share for a given level of operating profit.

Financial Leverages

Particulars	A	B
Equity Capital	400000	100000
Par Value of each Share	10	10
Number of Shares (Capital / par value)	40000	10000
Debt	100000	400000
Rate of Interest	10%	10%
Income Tax rate	50%	50%

EBIT of both companies at INR 50000

Operating Profit (EBIT)	50000	50000
Less: Interest on Debt	10000	40000
Earnings Before Tax (EBT)	40000	10000
Less: Income Tax (EBT X Tax Rate)	20000	5000
Earnings After Tax (EAT)	20000	5000
Number of Shares	40000	10000
Earnings Per Share (EAT/Number of Shares)	0.5	0.5

EBIT of both companies at INR 100000

Operating Profit (EBIT)	100000	100000
Less: Interest on Debt	10000	40000
Earnings Before Tax (EBT)	90000	60000
Less: Income Tax (EBT X Tax Rate)	45000	30000
Earnings After Tax (EAT)	45000	30000
Number of Shares	40000	10000
Earnings Per Share (EAT/Number of Shares)	1.125	3

Financial Leverages

Observations:

Particulars	Company A		Company B	
Initial EBIT	50000	100000	50000	100000
<i>% Increase in EBIT</i>	100%		100%	
Initial EPS	0.5	1.125	0.5	3
% Increase in EPS	125%		500%	

When There is a Loss of INR 100000 at EBIT Level

Particulars	Company A	Company B
Operating loss	1,00,000	1,00,000
Add interest	10,000	40,000
Total loss	1,10,000	1,40,000
Number of Equity shares	40,000	10,000
Loss per share	2.75	14

Financial Leverages

Conclusion:

Financial leverage - Use of fixed interest-bearing securities, along with Equity shares to maximize EPS.

Company A has lesser financial leverage, its growth rate in earnings per share is 125%. On the other hand, due to higher financial leverage the growth rate in EPS of Company B is higher, which stands at 500%.

One shall note that higher proportion of debt will not automatically give higher level of EPS. The impact of financial leverage can be felt only when, the number of Equity shares are reduced.

As it can be seen in company A, though it enjoys higher amount of earnings available to Equity shares, as number of equity shares are also higher, its earning per share is lesser. On the other hand, though, Company B has lesser amount of earnings available to equity shareholders, as it enjoys lesser number of equity shares. It also enjoys higher amount of EPS.

As long as the company enjoys operating profit, financial leverage helps it to maximise its EPS. But once a company suffers with operating loss, the loss per share of the company that has higher degree of financial leverage will also be very high.

When both the Companies A and B have incurred operating loss of INR 100000, due to lesser degree of financial leverage, loss per share of Company A is only 2.75 as against Company B's loss per share, which stands at 14.

Therefore, one must know that financial leverage works as a double-edged weapon.

Significance of Leverage

The study of leverage is significant due to the following reasons.

Measurement of Operating Risk.

Operating risk refers to the risk of the firm not being able to cover its fixed operating costs. Since operating leverage depends on fixed operating costs, larger fixed operating costs indicates higher degree of operating leverage and thus, higher operating risk of the firm. High operating leverage is good when sales are rising but bad when they are falling.

Measurement of Financial Risk.

Financial risk refers to the risk of the firm not being able to cover its fixed financial costs. Since financial leverage depends on fixed financial cost, high fixed financial costs indicates higher degree of operating leverage and thus, high financial risk. High financial leverage is good when operating profit is rising and bad when it is falling.

Combined Leverage

Operating leverage is concerned with operating risk and is expressed quantitatively by DOL.

Financial leverage is associated with financial risk and is expressed quantitatively by DFL.

Both the leverages are concerned with fixed charges.

If we combine these two we will get the total risk of a firm that is associated with total leverage or combined leverage of the firm.

Combined Leverage

This leverage shows the relationship between a change in sale & the corresponding variation in taxable income

Combined leverage is mainly related with the risk of not being able to cover total fixed charges.

Degree of Combined Leverage (DCL) = % in EPS / % in Sales

$$\text{DCL} = \text{DOL} \times \text{DFL}$$

Examples

Example 1

Particulars (INR Lakhs)	A Ltd	B Ltd
Sales	500	1000
Less: Variable Costs	200	300
Fixed Costs	150	400
Less: Interest	50	100

You are required to calculate —

- (a) operating, financial and combined leverages of the two companies, and
- (b) comment on the relative position of the companies in respect of the risk.

Examples

Solution

Particulars (INR Lakhs)	A Ltd	B Ltd
Sales	500	1000
Less: Variable Costs	200	300
Contribution	300	700
Fixed Costs	150	400
EBIT	150	300
Less: Interest	50	100
EBT	100	200

The operating leverage is higher for B Ltd. and therefore - it is subject to greater degree of business risk (operating risk) than A Ltd.

The EBIT will tend to vary more with sales in B Ltd. The financial leverage of both the companies stand at 1.5 times.

It conveys that interest burden is proportionately same, and also financial risk is similar for both the companies.

The combined leverage of B Ltd. is higher and its overall risk is more as compared to A Ltd.

Particulars	Formula	A Ltd	B Ltd
Operating Leverage	Contribution/EBIT	2	2.33
Financial Leverage	EBIT/EBT	1.5	1.5
Combined Leverage	Contribution/EBT	3	3.5

Examples

Example 2

Particulars (INR Lakhs)	FY 2018	FY 2019
Sales	1500	2000
EBIT as a % of Net Sales	14%	16%
Debt @ 15%	500	800
11% Preference Shares	200	200

The applicable Income-tax rate to be taken at 40% Number of equity shares outstanding: 8 lakhs

Calculate: DOL, DFL & DCL

Examples

Solution

Particulars (INR Lakhs)	A Ltd	B Ltd
Sales	1500	2000
EBIT	210	320
Less: Interest	75	120
EBT	135	200
Tax @ 40%	54	80
EAT	81	120
Pref. Dividends	22	22
EAES	59	98
No. of Equity Shares	8	8
EPS	7.4	12.3

% Change in Net Sales = $(2000-1500)/1500 = 33\%$

% Change in EBIT = $(320-210)/210 = 52.4\%$

% Change in EPS = $(12.3-7.4)/7.4 = 66.1\%$

Particulars	Formula	
Degree of Operating Leverage	% Change in EBIT/ % Change in Sales	1.57
Degree of Financial Leverage	% Change in EPS/ %Change in EBIT	1.26
Degree of Combined Leverage	DOL X DFL	1.99

Effect of Leverages

Operating Leverage	Financial Leverage	Combined Effect
High	High	Greater Multiplier Effect. Dangerous during downturn or conditions of high variability of Sales
Low	Low	Low Risk effect. Cautious Approach. May not yield best results in a market upswing
High	Low	Involves higher commitment of “Fixed Costs & Investments’ to reduce Variable Costs. Agnostic on capital structure and its effect.
Low	High	Involves lower commitment of “Fixed Costs & Investments’. The Firm adopts an aggressive debt based capital structure to obtain the benefit of gearing effect.

Conclusion

- Leverage is a double-edged sword.
- It magnifies profits as well as losses
- An aggressive or highly leveraged firm has high fixed costs (and a relatively high break-even point).
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- A conservative or non-leveraged firm has low fixed costs (and a relatively low break-even point)