

## Financing Decision and Capital Structure

A firm can make use of different sources of financing whose costs are different, i.e., funds which carry a fixed rate of return (debentures and preference shares) and those with variable returns (equity shares). The term capital structure refers to the composition of the long term sources of funds, with an optimum debt and equity mix, where the cost of capital is minimum and the market price per share is maximum.

### **Definition**

According to Gersternberg, "Capital structure of a company refers to the composition of its capitalization and it includes all long term capital sources viz., loans, reserves, shares and bonds."

According to Schwartz, "The capital structure of business can be measured by the ratio of various kinds of permanent loan and equity capital to total capital".

### **Designing capital structure**

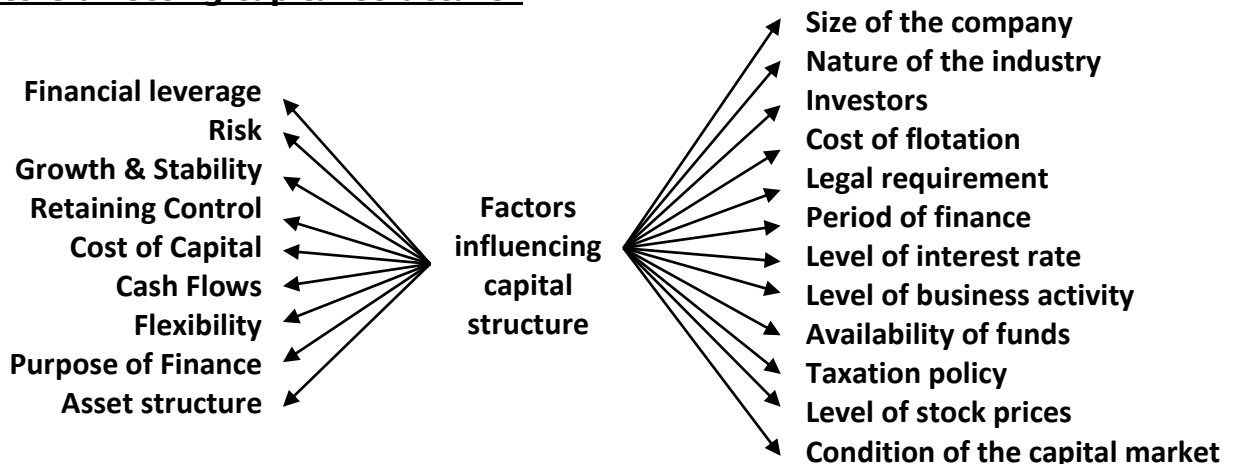
A firm's capital structure may be in any of the following patterns mentioned below,

1. Capital structure with equity shares only.
2. Capital structure with both equity and preference shares.
3. Capital structure with equity shares and debentures
4. Capital structure with equity shares, preference shares and debentures.

### **Features of an appropriate capital structure**

1. **Profitability:** The capital structure of the company should be most profitable. The most profitable capital structure is one that minimizes the cost of financing and maximizes the earnings per equity share within the constraints.
2. **Solvency:** The use of excessive debt threatens the solvency of the company. So the financial planning should be devised to ensure that the risk of insolvency does not threaten the firm.
3. **Flexibility:** The capital structure of a firm should be flexible to change according to the changing market conditions.
4. **Conservatism:** The capital structure should be conservative, in the sense that the debt capacity should not be exceeded.
5. **Control:** An appropriate capital structure should preserve the control of the firm in the hands of equity shareholders.

### **Factors affecting capital structure**



## **Internal Factors:**

1. **Financial leverage:** The use of fixed bearing securities, such as debt and preference capital along with owners' equity in the capital structure is described as financial leverage or trading on equity. This decision is most important from the point view of financing decisions.
2. **Risk:** ordinarily, debt securities increases the risk, while an equity security reduces it, risk can be measured to some extent by the use of ratio, measuring gearing and time – interest earned. The risk attached to the use of leverage is called "financial risk".
3. **Growth & Stability:** In the initial stages, a firm can meet its financial requirements through long-term sources, particularly by raising equity shares. Once the company starts getting good response and cash inflow capacity is increased through sales, it can raise debt or preference capital for growth and expansion programmes of the company.
4. **Retaining control:** The attitude of the management towards retaining control over the company will have direct impact on the capital structure. If the existing shareholders want to continue the same holding on the company, they may not encourage the issue of additional equity shares.
5. **Cost of capital:** The cost of capital refers to the expectation of suppliers of funds. The objective of knowing the cost of capital is to increase the returns on investments, so that, a firm should earn sufficient profits to repay the interest and installment of principal to the lenders.
6. **Cash flows:** Cash flow ability of a company will have direct impact on the capital structure. Cash flow generation capacity of a firm increases the flexibility finance manager in deciding the capital structure.
7. **Flexibility:** Flexibility means the firms' ability to adopt its capital structure to the needs of changing conditions; its capital structure should be flexible, so that, without much practical difficulties, a firm can change the securities in capital structure.
8. **Purpose of finance:** The purpose of finance is another factor that influences the capital structure. If a firm is engaged in business transactions, it can make use of Debt and Equity mix or can enjoy leverage benefits.
9. **Asset structure:** Funds are needed to make investments on fixed assets and current assets.

## **External factors:**

1. **Size of the company:** If the size of business is small, the requirement of finance is too little. If the size of the business of a firm is large, large amount of capital is required.
2. **Nature of Industry:** The nature of industry, method of production, type of product, etc., will also influence the capital structure.
3. **Investors:** In the recent past, the behaviors of the investors have changed. Now the investors are cautious over the investments. Political, socio-economic factors of the country made the investors to be very alert in their portfolio management.

4. **Cost of floatation:** The cost of floatation refers to the expenses a firm incurred during the process of public issues. Advertising, printing of the application forms, fees of merchant bankers, underwriting commission, brokerage, etc.
5. **Legal requirements:** The legal and statutory requirement of the government will also influence the capital structure. SEBI guidelines on investors protection, maintaining D:E ratio and current ratio, promoter contribution etc., will have direct bearing impact on capital structure.
6. **Period of finance:** Funds are required for different period for different purposes i.e. for short term, medium term and long term.
7. **Level of interest rate:** The rate of interest will have a direct impact on borrowed funds. If the expectation of the banker or financial institution is more to get high percentage of interest, a firm can postpone the mobilization of funds or can make use of retained earnings.
8. **Level of business activity:** The availability of money in the capital and money market will directly influence the company financial structure. Free flow of money in the economy encourages a corporate to raise funds through securities without much difficulty.
9. **Taxation policy:** High corporate tax, high tax on dividend and capital gains directly influence the decision of capital structure.
10. **Level of stock prices:** If the general price levels of stocks or raw materials are constant over a period of time, management prefers to invest such funds either through equity or preference capital.

## **LEVERAGE**

Leverage has been defined as “the action of a lever and mechanical advantage gained by it”. A lever is a rigid price that transmits and modifies force or motion where forces are applied at two points and turns around a third.

In simple words, it is a force applied at a particular point to get the desired result.

In business, leverage is the means which a business firm can increase the profits. The force will be applied on debt, the benefit of this is reflected in the form of higher returns to equity shareholders. It is termed as “**Trading on Equity**”.

### **Definition:**

*Christy and Roden* define leverage as the tendency for profits to change at a faster rate than sales. It is a relationship between equity share capital and securities and creates fixed interest and dividend charges. It is also known as “gearing”.

**SPECIMEN FORMAT TO CALCULATE THE LEVERAGE**

Particulars	Amount (in Rs)
Sales	.....
Less: Variable Cost	.....
Contribution	.....
Less: Fixed Cost	.....
Operating Profit / Earnings before interest and tax [EBIT]	.....
Less: Interest	.....
Earnings before tax [EBT]	.....
Less: Tax	.....
Earnings after Tax	.....
Less: preference dividend	.....
Earnings available to Equity shareholders	.....

**Types of Leverage:**

Leverage can be divided into three, i.e.,

1. Operating Leverage
2. Financial Leverage
3. Combined Leverage

**1. Operating Leverage**

The operating leverage occurs when a firm has fixed costs which must be recovered irrespective of sales volume. The fixed costs remaining same, the percentage change in operating revenue (EBIT) will be more than the percentage change in sales. This is known as operating leverage.

$$\text{Operating Leverage} = \frac{\text{Contribution}}{\text{Operating profit}}$$

$$\text{Degree of operating leverage} = \frac{\text{Percentage Change in Profits}}{\text{Percentage Change in Sales}}$$

**Significance of operating leverage:**

Higher the fixed operating costs, the higher the firm’s operating leverage and its operating risk. High operating leverage is good when sales revenue is high and bad when it is falling. Operating risk is the risk of the firm not being able to cover its fixed operating costs. The larger the fixed operating costs, the larger should be the sales volume to cover all fixed operating costs.

## 2. Financial Leverage

Financial leverage is the second type of leverage. It is related to the financing activities of the firm. Financial leverage results from the presence of fixed financial charges in the firm's income stream. These fixed charges do not vary with the earnings before interest and taxes [EBIT].

Financial leverage may be defined as "the ability of a firm to use fixed financial charges to magnify the effect of changes in EBIT, on the firm's earnings per share.

$$\text{Financial Leverage} = \frac{\text{Earnings before Interest and Taxes}}{\text{Earnings before Taxes}} \quad \text{OR} \quad \frac{\text{EBIT}}{\text{EBT}}$$

$$\text{Degree of financial leverage} = \frac{\text{Percentage Change in EPS}}{\text{Percentage Change in EBIT}}$$

### Significance of Financial Leverage

High fixed financial costs increase the firm's financial risk. The financial risk refers to the risk of the firm not being able to cover its fixed financial costs. EBIT should be sufficient to cover the fixed charges; otherwise it may force the company into liquidation.

## 3. Combined or Composite Leverage

The operating leverage measures the degree of operating risk and it is measured by percentage change in operating profit due to percentage change in sales. The financial leverage measures the financial risk by measuring the percentage change in taxable profit or EPS with the percentage change in operating profit or EBIT. Both these leverages are closely concerned with the firm's capacity to meet the fixed costs.

Composite leverage expressed the relationship between revenue on account of sales (Contribution) and the taxable income (PBT) on account of change in sales. The composite ratio is calculated as follows:

$$\text{Composite Leverage} = \text{Operating leverage} \times \text{Financial leverage}$$

$$= \frac{\text{Contribution}}{\text{PBT}}$$

$$\text{Degree of financial leverage} = \frac{\text{Percentage Change in EPS}}{\text{Percentage Change in Sales}}$$

### Significance of Combined Leverage:

CL measures the percentage changes in EPS due to percentage change in sales. It will be favourable when sales increases and unfavorable when sales decreases.

## Problems on Leverage

### Problem: 1

Calculate the financial leverage from the following data:

Sales 100000 units at Rs. 4 per unit

Variable cost Rs.1.40 per unit

Interest charges Rs.8000

Fixed cost Rs.200000

### Problem: 2

Calculate the financial leverage from the following information:

Interest Rs.5000

Sales Rs. 50000(1000 units)

Variable cost Rs.25000

Fixed costs Rs.15000

### Problem: 3

A firm has sales of Rs.1000000, variable cost of Rs.700000 and fixed cost of Rs.200000 and a debt of Rs.500000 at 10% rate of interest. What is its financial leverage?

### Problem: 4

From the following data, calculate the financial leverage.

Selling price per unit Rs.60

Variable cost per unit Rs.40

Fixed cost Rs.300000

Interest burden Rs.100000

Tax rate 50%

Number of units sold 10000

### Problem: 5

	<u>Plan A</u>	<u>plan B</u>	<u>plan C</u>
Equity share capital (Rs.)	200000	100000	300000
10% debentures debt (Rs.)	200000	300000	100000
Operating profit(Rs.)	40000	40000	40000

### Problem: 6

A company has the following capital structure:

Equity shares of Rs. 10 each Rs.500000

10% preference shares of Rs. 100 each Rs.600000

The operating profit of the company is Rs.300000. The company is in 50% tax bracket.

Calculate the financial leverage.

### Problem: 7

A company has the following capital structure:

Equity shares of Rs. 10 each Rs.200000

10% preference shares of Rs. 100 each Rs.300000

10% debentures Rs.200000

The operating profit of the company is Rs. 200000. The company is in 50% tax bracket

**Problem: 8**

From the following data calculate the operating leverage of a firm:

Sales 20000 units at Rs.10 per unit

Variable cost Rs.3 per unit

Fixed cost Rs.20000

**Problem: 9**

A firm has sales of Rs.1000000, variable cost Rs.700000 and fixed cost Rs. 200000. What is operating leverage?

**Problem: 10**

The following information is taken from the records of a company:

Installed capacity 1000 units

Operating capacity 800 units

Selling price per unit Rs.10

Variable cost per unit Rs.7

**Problem: 11**

Calculate the operating leverage under the following situations:

Fixed cost

Situation X Rs.800

Situation Y Rs.1200

**Problem: 12**

Calculate the degree of operating leverage from the following data:

Sales 100000 units at Rs.2 per unit

Variable cost per unit re0.70

Fixed cost Rs.100000

**Problem: 13**

Calculate the combined leverage from the following data:

Sales 100000 UN its at Rs.2 per unit

Variable cost per unit re0.70

Fixed cost Rs.100000

Interest Rs.4000

**Problem: 14**

Calculate the combined leverage from the following data:

Selling price per unit Rs.90

Variable cost per unit Rs.40

Fixed cost Rs.300000

Interest Rs.100000

Tax rate 50%

Number of units sold 10000 units

**Problem: 15**

Calculate operating leverage and financial leverage from the following information: sales 200000 units at Rs.5 per unit

Variable cost per unit Rs.1.50

Fixed cost Rs.200000

Interest Rs. 10000

### **Problem: 16**

Capital structure of Mayur Limited is as follows:

Equity capital Rs.2000000 in shares of Rs. 100 each

10% debentures of Rs. 2000000

Sales increased by 25% from 200000 units to 250000 units

The selling price is Rs.20 per unit. Variable cost amounts to Rs.12 per unit and fixed cost Rs.400000.

The company is in 50% tax bracket. You are required to calculate at 200000 units and 250000 units respectively the following:

### **EBIT – EPS Analysis:**

EBIT analysis is a method through which the effect of leverage can be studied, it essentially involves in comparison of different method of financing the capital composition under different assumptions of EBIT.

A firm can raise the funds in different means viz.,

- (a) Only through equity,
- (b) Only through debt,
- (c) Only through preference share
- (d) Combination of all the alternatives with different proportions.

The choice of different methods of financing must facilitate the company to earn more to the equity shareholders. The EPS indicates the available to the equity shareholders after meeting all the obligations of the company. The evaluation is done by taking different level and earnings before interest and taxes.

### **Point of indifference**

Point of indifference refers to the level of EBIT at which EPS remain the same irrespective of debt-equity mix. It is also called as Break Even Point. This situation would emerge for all types of financial plans. The return as capital employed will be equal to the interest as debt capital. It is also know as Break Even level of EBIT for alternative financial plans.

The Point of indifference can be calculated with the help of the following formula:

$$\frac{(EBIT - I_1)(1 - T) - PD}{ES_1} = \frac{(EBIT - I_2)(1 - T) - PD}{ES_2}$$

Where EBIT= Earnings before interest & taxes

$I_1$  = Interest under the financial plan 1

$T$  = Tax rate

$PD$  = Preference Dividend

$ES_2$  = No. of equity shares under the plan1

$I_2$  = Interest under the financial plan 2



$ES_2$  = No. of equity shares under the plan2