

CORPORATE FINANCE 18MBA-201

[Semester - 2nd]

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Module -2 – Investment Decision

Financial Decisions

Financial decision is a process which is responsible for all the decisions related with liabilities and stockholder's equity of the company as well as the issuance of bonds. Establish your financial goals: Setting the goals you want to achieve and the risk that you would be able to suffer.

OR

Financial decision is a process which is responsible for all the decisions related with liabilities and stockholder's equity of the company as well as the issuance of bonds.

Factorsfinancial decisions

- 1. **Risk** involved in raising the funds. The risk is higher in the case of debt as compared to the equity.
- 2. **Cost** involved in raising the funds. The manager chose the source with minimum cost.
- 3. **Level of Control**, the shareholders, want in the organization also determines the composition of capital structure. They usually prefer the borrowed funds since it does not dilute the ownership.
- 4. **Cash Flow** from the operations of the business also determines the source from where the funds shall be raised. High cash flow enables to borrow debt as interest can be easily paid.
- 5. **Floatation Cost** such as broker's commission, under writer's fee, involved in raising the securities also determines the source of fund. Thus, securities with minimum cost must be chosen.

What Is Leverage

Leverage results from using borrowed capital as a funding source when investing to expand the firm's asset base and generate returns on risk capital. Leverage is an investment strategy of using borrowed money—specifically, the use of various financial instruments or borrowed capital—to increase the potential return of an investment. Leverage can also refer to the amount of debt a firm uses to finance assets.

Types of Leverage



Financial Leverage:

Financial leverage which is also known as leverage or trading on equity, refers to the use of debt to acquire

additional assets. When a company uses debt financing, its financial leverage increases. More capital is

available to boost returns, at the cost of interest payments, which affect net earnings A firm needs funds so

run and manage its activities. The funds are first needed to set up an enterprise and then to implement

expansion, diversification and other plans. A decision has to be made regarding the composition of funds.

The funds may be raised through two sources: owners, called owners' equity, and outsiders, called creditor's

equity. When a firm issues capital these are owners' funds, when it raises, funds by raising long-term and

short-term loans it is called creditors' or outsiders' equity. Base EBIT (Earnings Before Interest and Taxes)

Degree of Financial Leverage

The degree of financial leverage is a financial ratio that measures the sensitivity in fluctuations of a

company's overall profitability to the volatility of its operating income caused by changes in its capital

structure. The degree of financial leverage is one of the methods used to quantify a company's financial risk

(the risk associated with how the company finances its operations).

Formula of Financial Leverage

Debt Ratio L1 = D / D + S = D/V

[L1= debt ratio, D= value of debt, S= value of equity, V= Total capital]

Debt equity ratio L2 = D/S

Interest coverage ratioL3= EBIT/ I

[L3- interest coverage ratio, EBIT- Earning before interest Tax, I – Interest

Degree of Financial Leverage (DFL) = EBIT / EBT

Example-1

CALCULATION OF FINANCIAL LEVERAGE

Dindayal Company provides sales of 100000 units at Rs.10 /- per unit. Variable cost of the product produced is 60% of the total sales revenue. Fixed cost is Rs.200000/-. The firm has used a debt of Rs.500000/- at 20% interest. In this example Operating leverage and financial leverage can be found as under.

Particular	Amount
Sales Revenue (100000 * Rs.10/- per unit)	1000000
Less: Variable Cost (100000 * 6)	600000
= Contribution	400000
Less: Fixed Cost	200000
Earnings Before Interest and Tax (EBIT)	200000
Less: Interest (500000 * 20%)	100000
Earnings Before Tax (EBT)	100000

Financial Leverage: EBIT / EBT

Example-2

A Ltd. has the following capital structure:

Rs.

Equity share capital (of Rs. 100 each) 1,00,000
10% Preference share capital (of Rs. 100 each) 2,00,000
10% debentures (of Rs. 100 each) 2,00,000
If EBIT is (i) Rs. 1,00,000 (ii) Rs. 80,000 and (iii) Rs. 1,20,000,

Calculate financial leverage under three situations. Assume 50% tax rate.

Solution:

Computation of Financial Leverage

Items	(i)	(ii)	(iii)
EBIT	Rs. 1,00,000	Rs, 80,000	Rs. 1,20,000
Less Interest on Debentures	Rs. 20,000	Rs. 20,000	Rs. 20,000
EBT	Rs. 80,000	Rs. 60,000	Rs. 1,00,000
Less Income Tax	Rs. 40,000	Rs. 30,000	Rs. 50,000
PAT	Rs. 40,000	Rs. 30,000	Rs. 50,000
Less Preference Dividend	Rs. 20,000	Rs. 20,000	Rs. 20,000
Earnings for Equity Shareholders	Rs. 20,000	Rs. 10,000	Rs. 30,000
No. of Shares	Rs. 10,000	Rs. 10,000	Rs. 10,000
EPS	2	1	3

Financial Leverage EBT Rs. 1,00,000 Rs. 8, 0,000 Rs. 1,20,000 EBT Rs. 20,000 Rs. 10,000 Rs. 30,000

5

8 4

^{- 200000 / 100000 - 2} times

Operating Leverage

It refers to heavy usage of fixed assets. A few definitions are as follows: "The use of fixed operating costs to

magnify a change in profits relative to a given change in Sales

Function of three factors: Fixed costs, Contribution, Volume of Sales

Characteristics of operating leverage are as follows:

1. It affects assets side of Balance sheet

2. It is related to composition of fixed assets

3. It is related in fluctuations in business risk

4. It affects capital structure and return on total assets

Formula OL

The operating leverage can be calculated by the following formula

where contribution means sales minus variables costs

EBIT means contribution minus fixed costs .

OL=Contribution or (Sales - variable cost) / Operation profit or (contribution - fixed cost)

Degree of Operating Leverage (DOL)& Formula

The degree of operating leverage (DOL) is a multiple that measures how much the operating income of a company will change in response to a change in sales. Companies with a large proportion of fixed costs to variable costs have higher levels of operating leverage. The DOL ratio assists analysts in determining the impact of any change in sales on company earnings.

DOL = % Change in EBIT /% Change in sales revenue

$$EBIT = [Q(S-V)] / [Q(S-V)-F]$$

Where, $\mathbf{Q} = \text{Quantity product}$, $\mathbf{S} = \text{Selling price}$, $\mathbf{F} = \text{Fixed cost } \mathbf{V} = \text{Variable expenses}$

DOL= Contribution (Sales – variable cost) / EBIT

Example-1

Example: Parle-G Company produced and sold 100000 units of a product at the rate of Rs. 10/Per Unit. For to produced 100000 units the company has to spent Rs. 600000/- as variable cost at
the rate of Rs.6/- per unit and a fixed cost of Rs. 250000/-. The firm has paid interest Rs.5000/at the rate of 5%on Rs.100000/-debt. Here in this example for to calculate operating leverage the
following formula can be used.

Operating Leverage - Contribution / EBIT (Earning Before Interest and Tax)

Particular	Amount in Rs.
Sales Revenue (100000 * Rs.10/-)	1000000
Less: Variable Cost (100000 * Rs. 6/-)	600000
= Contribution	400000
Less: Fixed Cost	250000
= Earning Before Interest and Tax	150000

Operating Leverage = 400000 / 150000 = 2.66 times.

Example-2

Calculation of Degree of Operating Leverage

Here we are calculating the degree of operating leverage of Nokia Mobile Company.

Particular	2014	2015
Sales Revenue	1000000	1250000
Variable Cost	600000	750000
Fixed Cost	250000	250000

Calculation of EBIT on a Percentage Change

Particular	2014	2015	% Change
Sales Revenue	1000000	1250000	25
Less: Variable Cost	600000	750000	25
= Contribution	400000	500000	25
Less: Fixed Cost	250000	250000	-
EBIT	150000	250000	66.67

% increase change = Increase difference ÷ Original Number × 100

Degree of Operating Leverage (DOL) = % Change in EBIT / % Change in sales

DOL = 66.67 / 25 = 2.67 Times

Combined /Composite Leverage

Operating and financial leverage magnify the returns. There is combined effect of these leverages on income. Both the leverages are closely concerned with the firm's capacity to meet its fixed costs (both operating and financial). In case both the leverages are combined, the result obtained will disclose the effect of change in sales over change taxable profit.

Composite Leverage = Operating Leverage * Financial Leverage

Contribution

It may be expressed as = -----

EBT

The degree of combined leverage is computed in the following manner:

Degree of Combined leverage = Percentage change in EPS

Percentage change in Sales Volume

Example – 1

A firm has sales of 2000000, variable cost of 1400000, fixed cost 400000and 10% debt of 1000000 in its capital structure. What are its financial leverage, operating leverage and combined leverage?

ANS-

Particulars	
Sales	20,00,000
less: variable cost	14,00,000
contribution less: fixed cost	6,00,000 4,00,000
EBIT less :interest on debentures	2,00,000 1,00,000
EBT	1,00,000
1-OL= C / EBIT	60,00,000 / 20,00,000 = 3 times
2 - FL = EBIT / EBT	2,00,000 / 1,00,000 = 2 times
$3-CL = OL \times FL$	$3 \times 2 = 6 \text{ times}$

Capital Structure Everyone follow PDF note attached

The capital structure is the particular combination of debt and equity used by a company to finance its overall operations and growth. Debt comes in the form of bond issues or loans, while equity may come in the form of common stock, preferred stock, or retained earnings. Short-term debt such as working capital requirements is also considered to be part of the capital structure.

Two forms of capital a bit more closely-----

Equity Capital

Equity capital refers to money put up and owned by the shareholders (owners). Typically, equity capital consists of two types:

- Contributed capital: The money that was originally invested in the business in exchange for shares of stock or ownership
- **Retained earnings:** Profits from past years that have been kept by the company and used to strengthen the balance sheet or fund growth, acquisitions, or expansion

Debt Capital

The debt capital in a company's capital structure refers to borrowed money that is at work in the business. The cost depends on the health of the company's balance sheet—a triple AAA rated firm can borrow at extremely low rates vs. a speculative company with tons of debt, which may have to pay 15% or more in exchange for debt capital. There are different varieties of debt capital:

- 1. **Long-term bonds:** Generally considered the safest type because the company has years, even decades, to come up with the principal while paying interest only in the meantime.
- 2. **Short-term commercial paper:** Used by giants such as Walmart and General Electric, this amounts to billions of dollars in 24-hour loans from the capital markets to meet day-to-day working capital requirements such as payroll and utility bills.
- 3. **Vendor financing:** In this instance, a company can sell goods before they have to pay the bill to the vendor. This can drastically increase the return on equity but costs the company nothing. One secret to Sam Walton's success at Walmart was selling Tide detergent before having to pay the bill to Procter & Gamble, in effect, using P&G's money to grow his retail enterprise.
- 4. **Policyholder "float":** In the case of insurance companies, this is money that doesn't belong to the firm but that it gets to use and earn an investment on until it has to pay it out for auto accidents or medical bills. The cost of other forms of capital in the capital structure varies greatly on a case-by-case basis and often comes down to the talent and discipline of managers.

Optimal capital structure

An optimal capital structure is the best mix of debt, preferred stocks, and common stock. The optimal capital structure of a firm is often defined as the proportion of debt and equity that results in the lowest weighted average cost of capital (WACC) for the firm. This technical definition is not always used in practice, and firms often have a strategic view of what the ideal structure should be. In order to optimize the structure, a firm can issue either more debt or equity. The new capital that's acquired may be used to invest in new assets or may be used to repurchase debt/equity that's currently outstanding, as a form of recapitalization.



Features of optimum capital structure

Simplicity

The ideal or optimum capital structure should be the quality of simplicity. Here, simplicity means that in the beginning, the raising of funds should be done through certain types of securities. Which means that only equity and preference shares should be issued and debentures should be issued. Thus, with the development of business, diversification insecurity should be introduced gradually. It will increase investor confidence and make money easier. Apart from this, keeping the capital structure simple. It should also be kept in mind that it can't be cheaper than the requirement.

Minimization of Risk

There are various risks associated with every business, such as business competitions, changes in demand of goods, natural climate, increase in taxes, increase in interest rates, decreasing purchasing power, increasing business costs, etc. These risks are affected. Capital structure planning and construction.

Therefore, the capital structure should be such that these risks are minimal and if necessary, the business can be successfully loaded. To reduce the risks, the component of high-class securities is essential in the capital structure.

Flexibility

There should be a facility of expansion and contraction of money in a sound capital structure. The company should be able to purchase more capital at the time of need and be able to pay all its loans when it does not require money.

Adequate Liquidity

The structure and asset structure of the institution should be such that the institution can always maintain adequate liquidity. Therefore, the company can issue such debentures, which can repurchase in the market and has sold again if needed.

Apart from this, these days the terms of the repurchase terms are increasing the amount of debenture issue and sufficient liquidity for the system.

Full Utilisation

While capitalizing, the institution should keep in mind that the money purchased has fully utilized. Which means that the quantity of capital should determine. So that the institution can neither have capitalization nor its downfall It is possible.

Capitalization should be fair. When capitalization is appropriate in the institute. The institution's capital resources are not inactive and they have used well.

Maximum Profitability

This is the features of optimum capital structure. The ideal capital structure for any business institution is that. With which business profitability maximized. Although profitability depends on the efficiency of business management. But it has also influenced by the cost of capital.

Therefore, the capital structure should manage so that the cost of capital is minimal. So that it is available according to the capital requirements and to avoid wastage.

Attraction for Investors

The capital structure should have the quality of attracting, otherwise, capital structure has no significance. Therefore, if investors have invited to invest in capital. Then, the various aspects related to attraction should take into consideration as well.

Investors have usually attracted to those securities. Which provide high security for money security, income regularity, and capital growth.

Cash flow efficiency

It is necessary to focus on cash flow efficiency for any commercial institution's balanced capital structure. It should manage so that the institution can be able to meet its expenses. Even after the fixed expenses of the meeting.

Generally, the amount of loan, interest on it. And other discount messages etc. has included in the fixed expenses. Therefore, if the institute's cash flow is more stable. Then the credit capacity of the institution will be even higher.

Maximum control

This is the features of optimum capital structure. Generally, the organization controlled by the equity shareholders. However, under these special circumstances, rights can transfer to rights holders. And debenture holders by giving them the right to vote.

Therefore, the institution's capital structure should be such that the management and control of the company can in the safe hands of equity shareholders. However, if the percentage of shares held by them falls short, their control over the company may be over. Therefore, while preparing the capital structure of an institution, various should keep in mind.

Maximum Returns on Equity Capital

We know that equity shareholders are the actual owners of a company and only they take the actual risk on the investment. Therefore, the capital structure should be such that they get the maximum profit.

But, this is possible only if the institution is able to regularly give some definite and substantial income. However, the provision of this income should depend on the efficiency of the managers. But, nevertheless, by developing a proper capital structure, income can raise by purchasing capital at a lower cost.

Capital Structure Theory

In financial management, capital structure theory refers to a systematic approach to financing business

activities through a combination of equities and liabilities. There are several competing capital structure

theories, each of which explores the relationship between debt financing, equity financing, and the market

value of the firm slightly differently.

4 Theories of Capital Structure

1. Net Income Approach

2. Net Operating Income Approach

3. Traditional Approach

4. Modigliani and Miller Approach.

1. Net Income (NI) Approach -

Net Income Approach was presented by Durand. The theory suggests increasing value of the firm by

decreasing the overall cost of capital which is measured in terms of Weighted Average Cost of Capital. This

can be done by having a higher proportion of debt, which is a cheaper source of finance compared to

finance. Weighted Average Cost of Capital (WACC) is the weighted average costs of equity and debts

where the weights are the amount of capital raised from each source.

Formula

Valuation of company base on-V = S + B

[V-total value of firm, S- market value of equity, B- market value of debt]

S = NI or E / Ke

[S- Market value of equity, Ke - cost of equity capital, NI- Earning available for equity]

Overall cost of capital $\mathbf{Ko} = \mathbf{EBIT} / \mathbf{V}$

Overall cost of capital on NI approach Ko= Kd(B/V) + Ke (S/V)

Ko= Overall cost of capital, Kd = cost of debt, B- market value of debt, V= total value of firm,

Ke - cost of equity capital, S- Market value of equity

Example -1-NI

Excellent Manufacturing Company expects to earn net operating income of Rs. 1, 50,000 annually. The Company has Rs. 6.00,000 8% debentures. The cost of equity capital of the Company is 10%. What would be the value of Company? Also calculate overall cost of capital.

Solution:

Calculation of Value of Excellent Manufacturing Company

	Rs.
Net Operating Income (NOI)	1,50,000
Less interest on 8% debentures (1)	48,000
Earnings available to equityholders (NI)	1,02,000
Equity capitalisation rate (K_e)	0.10
Market value of Equity $(S) = \frac{NI}{K_e}$	10,20,000
Market value of debt (B)	_6,00,000
Total value of the firm $(S + B) = V$	16,20,000
Overall cost of capital = $K_0 = \frac{EBIT}{V} = \frac{Rs.1,50,000}{16,20,000}$	
= .093	
= 9.3% approximately.	

Example -2-NI

- (a) A company's expected operating income (EBIT) is Rs.3, 00,000. It has Rs. 12, 00,000, 9% debentures. The equity capitalisation rate of the company is 12%. Calculate the value of the firm and overall capitalisation rate according to the Net Income Approach (Ignore Income Tax).
- (b) If the debenture debt is increased to Rs. 15, 00,000, what shall be the value of the firm and overall capitalisation rate according to the Net Income Approach?
- (c) If the debenture debt is decreased to Rs. 10, 00,000, what shall be the value of the firm and overall capitalisation rate according to the Net Income Approach?

Solution next page

Solution:

(a) Calculation of the value of the firm:

Net Operating Income (Earning before interest and taxes or EBIT)

Less: Interest @ 9% on Debentures of ₹12,00,000

Earnings available to the shareholders
Equity Capitalisation rate

Market value of equity
$$1,92,000 \times \frac{100}{12}$$

Market value of debentures
Value of the firm (V)

Calculation of overall capitalisation rate:

Overall cost of capital (K_0) = $\frac{Earnings}{Value}$ of the firm or $\frac{EBIT}{V}$

(b) When the debenture debt is raised to ₹15,00,000 :

Calculation of the value of the Firm:

Net Operating Income (EBIT)

Less: Interest @ 9% on Debentures of ₹15,00,000 :

Equity Capitalisation rate

Market value of equity = 1,65,000 $\times \frac{100}{12}$

Market value of debentures
Value of the firm (V)

Calculation of overall capitalisation rate:

Overall cost of capital (K_0) = $\frac{EBIT}{V}$

= $\frac{3,00,000}{28,75,000} \times 100 = 10.43\%$

Hence, we can see that with an increase in the ratio of debt to equity the value of the firm has increased and consecutively the overall cost of capital has decreased.

(c) When the debenture debt is lowered to ₹10,00,000:

Calculation of the value of the Firm:

Net Operating Income (EBIT)

Less: Interest @ 9% on Debentures of ₹10,00,000

Earnings available to the shareholders

Equity Capitalisation rate

Market value of equity =
$$2,10,000 \times \frac{100}{12}$$

Market value of debentures

Value of the firm (V)

Calculation of Overall Capitalisation Rate:

Overall cost of capital (K_0) = $\frac{EBIT}{V}$

= $\frac{3,00,000}{27,50,000} \times 100 = 10.91\%$

Hence, we can see that with a decrease in the ratio of debt to equity the value of the firm has decreased and consecutively the overall cost of capital has increased.

2-Net Operating Income Approach

Net Operating Income Approach which is just opposite to NI approach, the overall cost of capital and value of firm are independent of capital structure decision and change in degree of financial leverage does not bring about any change in value of firm and cost of capital.

Formula

Value of the firm V = EBIT / Ko (or) NOI / Ko

[V- value of firm, EBIT-earning before I &T, NOI- Net Operating Income, Ko- overall cost of capital]

Total value of Equity E = V - B

Equity Capitalisation rate (Ke) = $(EBIT - I/V-D) \times 100$

Overall Cost of capital on NOI approach (Ko)= Kd (B/V) + Ke (S/V)

[Ko = Overall cost of capital, Kd = cost of debt, B- market value of debt, V= total value of firm, Ke - cost of equity capital, S- Market value of equity]

Example -1-NOI

Canon Manufacturing Company has annual net operating income of Rs. 150000. The Company has Rs. 6,00,000 8% debentures. The overall cost of capital of the Company is 10%. What would be the value of the Company?

Solution:

Value of Canon Company has been computed as below:

	Rs.
Net Operating Income (NOI)	1,50,000
Overall capitalisation rate (K_o)	0.10
Total Market value of the company (V) Total value of debt (B)	15.00,000 6,00,000
Total Market value of Equity (S)	9,00,000
Equity capitalisation rate $K_e = \frac{EBIT - I}{V - B}$	
Earnings available to equity - holders	
Total market value of equity shares	
$= \frac{Rs.1,50,000-45,000}{Rs.9,00,000} = 11.33\%$	
Rs.9,00,000	
The overall cost of capital to verify the validity of the NOI approach:	
$=K_0=K_i(B/V)+K_e(S/V)$	
$=8\% \left(\frac{Rs.6,00,000-96,000}{Rs.15,00,000}\right)+11.33\% \left(\frac{Rs.6,00,000-96,000}{Rs.15,00,000}\right)$	Rs.9,00,000 Rs.1,5,00,000
= 10%	

Difference Between NO vs NOI

Net Income vs. Net Operating Income Approach		
# Basis #	Net Income	Net Operating Income
Role of Capital Structure	There is relevance of capital structure in value of firm	There is no relevance of capital structure in value of firm.
Degree of leverage & cost of capital	Assumes change in the degree of leverage will alter the WACC.	Assumes that degree of leverage is irrelevant to cost of capital
Assumptions	 No taxes Cost of Debt < Cost of Equity Debt doesn't change the perception of investors 	 Cost of capital is always constant Value of equity is residual Increase in debt increases the expectations of shareholders.

3- Traditional Theory Approach

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. Practically, this approach encompasses all the ground between the Net Income Approach and the Net Operating Income Approach, i.e., it may be called Intermediate Approach.

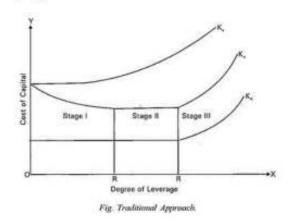
Formula

Market value of Equity (S) = NI / Ke (or) EBIT - I / Ke

Value of firm (V) = S + D

Equilibrium cost of capital (Ko) = EBIT / V

The behaviour of K_d , K_e and K_o has been graphically shown in the following figure:



4 - Modigliani and Miller Approach - Everyone follow PDF note attached-whatsapp

Modigliani-Miller' (MM) advocated that the relationship between the cost of capital, capital structure and the valuation of the firm should be explained by NOI (Net Operating Income Approach) by making an attack on the Traditional Approach. The Net Operating Income Approach, supplies proper justification for the irrelevance of the capital structure. In Income Approach, supplies proper justification for the irrelevance of the capital structure. (**OR**)

The Modigliani-Miller Approach is similar to the net operating income approach when taxes are ignored. The theory proves that there is no relationship between the capital structure decision and the value of the firm and its overall cost of capital. However it is an improvement over the net operating income approach as it provides the behavioural justification for the contention that capital structure decision is not related to overall cost of capital. In other words, it justifies the proposition that overall cost of capital remains constant at any level of debt-equity ratio.

MM approach is based on the following assumptions:

- 1. The dividend pay-out ratio is 100%, that is, there are no retained earnings.
- 2. There are no corporate taxes.
- 3. The capital markets are perfect. It means-
- (a) There are no transaction costs.
- (b) The investors are free to buy and sell the securities.
- (c) The investors can borrow without restrictions on the same terms as the firm can.
- (d) All investors have the same information without cost.
- (e) The investors are rational in behaviour.
- 4. All investors have the same expectation of a firm's net operating income (EBIT) and evaluate the firm on that basis.
- 5. All firms can be divided into equivalent or homogeneous risk class. It means that the expected earnings have similar risk characteristics.

