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## UNIT 14: CAPITAL STRUCTURE DECISIONS

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### 14.0 OBJECTIVES

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After studying this unit, you should be able to explain:

- The factors that determine the choice of debt and equity in the capital structure of a firm
- The concept of optimal capital structure
- EBIT-EPS analysis as a tool to decide the optimal capital structure
- The contribution of Modigliani & Miller in the area of optimal capital structure
- As to how the corporate India decide the optimal capital structure

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### 14.1 INTRODUCTION

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The dilemma the Chief Financial Officer (CFO) of a firm in the present day world is to decide the proportion of debt and equity in the capital structure in order to maximize the value of the firm. There are principally two claimants

on the assets of the firm i.e. providers of loan funds and equity shareholders. The lenders provide funds to the firm on either a fixed interest rate or floating interest rate. The rate of interest is guided by the credit rating of the instrument. The use of debt in a capital structure brings tax advantage on interest to the firm, since interest on loan funds is an admissible expense for determining profit for income tax. The equity shareholders are the residual claimants on the wealth of the company.

The CFO can use debt in the capital structure in order to increase the return on equity (ROE), when return on assets (ROA) is greater than after tax cost of debt ( $K_d$ ). It is termed as use of financial leverage. The CFOs can also design hybrid securities such as convertible bonds, preference shares, or debentures with bonds in order to create firm value by use of financial engineering.

In this unit, you will learn as to how the CFOs make trade off between risks and return while determining optimal capital structure of the firm in addition the pioneering work of Modigliani & Miller.

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## 14.2 FACTORS INFLUENCING CAPITAL STRUCTURE

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Ross, Westerfield & Jaffe in their book titled Corporate Finance say that they do not have a unique formula to determine optimal capital structure for all the firms. There is empirical research evidence that firms do have target debt equity ratio and they consider the following four factors while making choice of size of debt in the capital structure:

### 14.2.1. Taxes

The interest on loan funds reduces the tax liability of a profitable firm, whereas it is chargeable to income tax in the hands of the bondholders. In India corporate tax rate is 35%, and individuals are taxed at 20% or 30% depending upon the tax bracket, in which the taxpayer is. Since the corporate tax rates are higher than bondholder tax rates, the CFO create value by using debt in the capital structure of the firm.

### 14.2.2 Type of assets

The firms with a huge investment in tangible assets such as land & buildings, plant and machinery, equipments, furniture & fixtures, and vehicles tend to have high debt ratio. For example, oil refineries, petrochemicals plant. The lenders feel comfortable, since they get the collateral against the loan. The debt ratio is low in case of research and development companies, pharmaceuticals companies, and software companies, since they have more intangible assets such as knowledge capital.

### 14.2.3 Uncertainty of operating income

The firms that are influenced by the business cycles like automobile industry; cement industry may have uncertain operating profits before interest and tax (EBIT) and hence may not be able to service the debt and lead to default. Thus, they may have low debt ratio. On the other, the fast moving consumer goods (FMCG) industry or power utility may have little uncertainty in their operating profits. They can afford to use more debt in their capital structure. The actual use of debt may depend upon the growth needs and profitability of the operations of the company. The Hindustan Lever Limited has no debt in their capital structure, as their operations are highly profitable in terms of cash.

### 14.2.4 Pecking order & Financial slack

The pecking order theory states that CFOs prefer internally generated funds to finance growth needs of the company. If funds requirement is more, debt is preferred to equity. The equity issue is considered as a last resort. The rationale for this is external financing either through debt or equity is more expensive because of fees to investment bankers and issue expenses. Secondly, existing shareholders are not comfortable with the pricing of fresh equity issue as management has access to more information than the existing shareholders.

It is normal human mindset to save cash during good times to avoid external financing during bad times. Similarly, the CFOs do not exhaust their debt capacity fully during good times, and plan to use the same during bad times. The economists term this practice as a financial slack.

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## 14.3 FEATURES OF AN APPROPRIATE CAPITAL STRUCTURE

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The optimal capital structure of a firm should have the following features:

### 14.3.1 Return

The objective of firm should be to have optimal debt in the capital structure, which yields maximum return to the shareholders i.e. to increase return on equity (ROE) with the same level of return on assets (ROA).

$$\text{ROE} = \text{ROA} + (D/E) [\text{ROA} - I (1-T_c)]$$

Where:

D	=	Proportion of debt in the capital structure
E	=	Proportion of equity in capital structure
I	=	Interest rate (current yield to maturity) on debt
T <sub>c</sub>	=	Corporate income tax rate

### **14.3.2 Risk**

The use of debt no doubt increases ROE, as long as ROA is greater than current yield to maturity on debt. However, beyond a point, the use of debt leads to increase in the bankruptcy cost or in other words impairs the ability of the firm to service the debt. It is termed as increase in the financial risk. The required rate of return to equity shareholders increases with the increase in financial risk. Thus, the increase in ROE is not commensurate with the increase in financial risk and the firm value is destroyed. The job of the CFO is to determine that level of debt in capital structure, where risk-return trade-off is optimal.

### **14.3.3 Flexibility**

Generally, most of the firms do not exhaust their debt capacity in order to maintain flexibility. Because, if new growth opportunity comes on a future date, it may be easy to finance the same with debt both in terms of cost and time vis-à-vis equity financing. Hence, the firms generally operate at a debt level, which is below the optimal level.

### **14.3.4 Capacity**

The asset quality, nature of assets and ability of the firm to generate future free cash flows determine the capacity of the firm to raise debt. If most of the firm's assets are intangible in nature, the debt capacity will be low, as firm has little to offer as collateral for the loan. If firm is at growth stage, the future cash flows will be adequate to service the debt vis-à-vis a firm that is at maturity stage. If the firm has most of its assets as non-performing assets, lenders will not feel comfortable in negotiating the deal with the firm.

### **14.3.5 Control**

The choice of capital structure should consider that it should not result in dilution of control of the existing management. The issue of further equity results in dilution of control. The share buyback results in consolidation of holdings of the present management without any additional cost to them. From control perspective, the use of debt in capital structure is preferred.

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## **14.4 EBIT-EPS ANALYSIS**

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The CFOs use EBIT-EPS analysis as a tool to determine the optimal capital structure and to make a trade-off between risk and return. The CFOs look at the EPS levels at different levels of EBIT under different financing plans in order to gauge the risk and decide the level of return they target at. This tool can be better understood with the help of an example:

ABC Limited, a software company, is planning its capital structure. Presently, it is a debt free company and has Rs. 10,00,000 equity in the capital structure. The numbers of outstanding equity shares are 40,000. In other words, the book value per share is Rs 25. The business-forecasting group has provided the following estimates of sales and their respective probability levels, cost structure data in order to forecast the earnings before interest and tax (EBIT):

Probability of sales	0.30	0.40	0.30
Sales revenues	Rs. 5,00,000	Rs. 10,00,000	Rs. 12,50,000
Less: Fixed Operating cost	Rs. 2,00,000	Rs. 2,00,000	Rs. 2,00,000
Less: Variable operating cost (50% of sales)	Rs. 2,50,000	Rs. 5,00,000	Rs. 6,25,000
EBIT	Rs. 50,000	Rs. 3,00,000	Rs. 4,25,000

The different levels of EBIT forecast indicate the kind of operating or business risk, the firm is exposed to and reflects the kind of variability the company has in its sales revenue and the degree of operating leverage it has employed. The firm's choice of capital structure has an impact on its financial risk. The financial risk captures the ability of the firm to meet its debt obligations.

Let us consider that firm is considering the following debt levels in its capital structure. The money raised through debt will be used to buyback the equity.

Capital structure Debt ratio	Level of debt	Interest rate on all debt	Interest
(1)	(2)	(3)	(2X3 = 4)
0%	0	0%	0
10%	Rs. 1,00,000	10%	Rs. 10,000
25%	Rs. 2,50,000	12%	Rs. 30,000
40%	Rs. 4,00,000	14%	Rs. 56,000
50%	Rs. 5,00,000	16%	Rs. 80,000

**The associated capital structure to these debt ratios will be as under:**

Debt ratio	Total assets	Debt	Equity	Equity shares Outstanding
(1)	(2)	(1)X(2) (3)	(2-3) (4)	(4)/Rs 25
0%	Rs. 10,00,000		Rs. 10,00,000	40,000
10%	Rs. 10,00,000	Rs. 1,00,000	Rs. 9,00,000	36,000
25%	Rs. 10,00,000	Rs. 2,50,000	Rs. 7,50,000	30,000
40%	Rs. 10,00,000	Rs. 4,00,000	Rs. 6,00,000	24,000
50%	Rs. 10,00,000	Rs. 5,00,000	Rs. 5,00,000	20,000

Let us see the impact of different debt ratios in capital structure on the EPS

	<b>Debt ratio = 0%</b>		
<b>Probability of EBIT</b>	<b>0.30</b>	<b>0.40</b>	<b>0.30</b>
EBIT	Rs. 50,000	Rs. 3,00,000	Rs. 4,25,000
Less: Interest	0	0	0
Earnings before tax	Rs. 50,000	Rs. 3,00,000	Rs. 4,25,000
Less: Taxes (35%)	Rs. 17,500	Rs. 1,05,000	Rs. 1,48,750
Earnings after taxes (EAT)	Rs. 32,500	Rs. 1,95,000	Rs. 2,76,250
Earnings per share (EAT/ no. of equity shares)	Rs. 0.8125	Rs. 4.875	Rs. 6.90625
Expected EPS		Rs. 4.265625	
Standard deviation of EPS		Rs.2.412	

	<b>Debt ratio = 10%</b>		
<b>Probability of EBIT</b>	<b>0.30</b>	<b>0.40</b>	<b>0.30</b>
EBIT	Rs. 50,000	Rs. 3,00,000	Rs. 4,25,000
Less: Interest	Rs.10, 000	Rs. 10, 000	Rs. 10,000
Earnings before tax	Rs. 40,000	Rs. 2,90,000	Rs. 4,15,000
Less: Taxes (35%)	Rs. 14,000	Rs. 1,01,500	Rs. 1,45,250
Earnings after taxes (EAT)	Rs. 26,000	Rs. 1,88,500	Rs. 2,69,750
Earnings per share (EAT/ no. of equity shares)	Rs. 0.7222	Rs. 5.2361	Rs. 7.4931
Expected EPS		Rs. 4.5590	
Standard deviation of EPS		Rs.2.68	

	<b>Debt ratio = 25%</b>		
<b>Probability of EBIT</b>	<b>0.30</b>	<b>0.40</b>	<b>0.30</b>
EBIT	Rs. 50,000	Rs. 3,00,000	Rs. 4,25,000
Less: Interest	Rs.30, 000	Rs. 30, 000	Rs. 30,000
Earnings before tax	Rs. 20,000	Rs. 2,70,000	Rs. 3,95,000
Less: Taxes (35%)	Rs. 7,000	Rs. 94,500	Rs. 1,38,250
Earnings after taxes (EAT)	Rs. 13,000	Rs. 1,75,500	Rs. 2,56,750
Earnings per share (EAT/ no. of equity shares)	Rs. 0.4333	Rs. 5.85	Rs. 8.5583
Expected EPS		Rs. 5.0375	
Standard deviation of EPS		Rs. 3.216	

	<b>Debt ratio = 40%</b>		
<b>Probability of EBIT</b>	<b>0.30</b>	<b>0.40</b>	<b>0.30</b>
EBIT	Rs. 50,000	Rs. 3,00,000	Rs. 4,25,000
Less: Interest	Rs. 56,000	Rs. 56,000	Rs. 56,000
Earnings before tax	(Rs. 6,000)	Rs. 2,44,000	Rs. 3,69,000
Less: Taxes (35%)	(Rs. 2,100)	Rs. 85,400	Rs. 1,29,150
Earnings after taxes (EAT)	(Rs. 3,900)	Rs. 1,58,600	Rs. 2,39,850
Earnings per share (EAT/ no. of equity shares)	(Rs. 0.1625)	Rs. 6.6083	Rs. 9.99375
Expected EPS		Rs. 5.5927	
Standard deviation of EPS		Rs. 4.02	

	<b>Debt ratio = 50%</b>		
<b>Probability of EBIT</b>	<b>0.30</b>	<b>0.40</b>	<b>0.30</b>
EBIT	Rs. 50,000	Rs. 3,00,000	Rs. 4,25,000
Less: Interest	Rs.80, 000	Rs. 80, 000	Rs. 80,000
Earnings before tax	(Rs. 30,000)	Rs. 2,20,000	Rs. 3,45,000
Less: Taxes (35%)	(Rs. 10,500)	Rs. 77,000	Rs. 1,20,750
Earnings after taxes (EAT)	(Rs. 19,500)	Rs. 1,43,000	Rs. 2,24,250
Earnings per share (EAT/ no. of equity shares)	(Rs. 0.975)	Rs. 7.15	Rs. 11.2125
Expected EPS		Rs. 5.93125	
Standard deviation of EPS		Rs. 4.824	

The expected level of EPS and their standard deviation at different levels of debt ratios is as under:

<b>Debt ratio</b>	<b>Expected EPS</b>	<b>Standard deviation of EPS</b>
0%	Rs. 4.27	Rs. 2.41
10%	Rs. 4.56	Rs. 2.68
25%	Rs. 5.04	Rs. 3.22
40%	Rs. 5.59	Rs. 4.02
50%	Rs. 5.93	Rs. 4.82

From the foregoing example, it has clearly emerged that increase in debt ratio though increases the expected level of EPS but at the same time, it makes EPS volatile. The use of financial leverage has a negative impact when the ROA is less than the cost of debt, as it is evident from debt ratio of 40% and 50% at EBIT level of Rs. 50,000.

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## 14.5 CAPITAL STRUCTURE THEORIES

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There are different approaches to capital structure. The most commonly used are Net Income approach (NI), Net Operating income approach (NOI), Traditional approach and Modigliani & Miller approach.

The **net income approach** states that cost of debt and cost of equity remain unchanged, as debt ratio in a capital structure is increased. The weighted average cost of capital reduces as a result. The NI approach suggests that capital structure decision does create firm value.

On the contrary, **Net Operating Income approach**, the weighted average cost of capital and cost of debt remains unchanged as debt ratio increases. As a result, the required rate of return to equity shareholders increases. The assumption of NOI approach is that capital structure decision is irrelevant, as market places value on net operating income & business risk and discount rate is independent of firm's debt ratio.

The **Traditional position** on capital structure is that capital structure decision has an impact on cost of capital and thus on firm value. There is an optimal capital structure, which minimizes the weighted average cost of capital of the firm.

### 14.5.1 Modigliani & Miller Proposition I

The Modigliani & Miller results in a world with no taxes and no transaction cost indicate that managers can not change the value of the firm by changing the proportion of debt in a capital structure. These ideas were revolutionary in the 1950s and they won the Nobel Prize in financial economics for their original contribution in the area of capital structure and firm value. Later, in their work they incorporated the impact of taxes.

#### Assumptions of MM Propositions

- The companies are taxed at the rate of  $T_c$  on their earnings after taxes
- The investors have homogenous expectations about the firm performance in the foreseeable future
- The firms can be classified in homogenous business risk classes
- The firm has infinite stream of perpetual cash flows
- There is perfect capital market with
  - A perfect competition
  - Firms as well as individuals can borrow and lend at risk free rate
  - No transaction cost

MM Proposition I states that the value of levered firm is equal to value of unlevered firm plus present value of infinite stream of tax advantage of interest on debt. The future infinite stream of tax advantage of interest on



debt is discounted at required rate of return to lenders. The value of unlevered firm is present value of infinite stream of operating cash flows. The future operating cash flows are discounted at required rate of return to shareholders of an all equity firm.

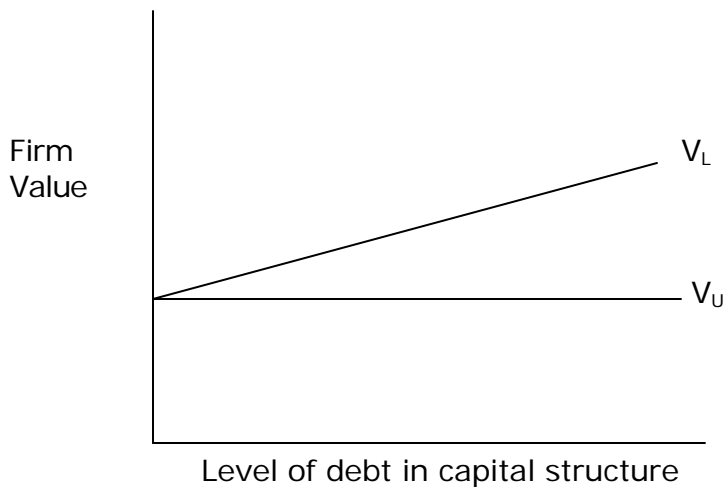
$$V_L = V_U + \frac{T_c \cdot r_d \cdot D}{r_d}$$

$$V_U = \text{EBIT} / r_o$$

Where:

- $V_L$  = Value of levered firm
- $V_U$  = Value of unlevered firm
- $T_c$  = Corporate income tax rate
- $r_d$  = required rate of return to lenders
- $D$  = Amount of debt in capital structure
- $\text{EBIT}$  = Earnings before interest & taxes
- $r_o$  = required rate of return to equity shareholders of an all equity firm

The graphic presentation of MM Proposition I is as under:



**Fig 14.1: Relationship between debt & Firm Value**

The intuitive explanation of MM Proposition I is that companies are allowed to deduct interest on loan funds as an admissible expense while arriving at profit for tax purpose but not dividend payments, financial leverage lowers tax payments & increases firm value.

### 14.5.2 MM Proposition II with corporate taxes

The MM Proposition II in a world of corporate taxes studies the relationship between financial leverage and required rate of return to equity shareholders and in turn weighted average cost of capital. The required rate of return to equity shareholders increases as use of debt in capital structure is increased. It answers precisely as to how cost of equity increases with the increase in financial leverage.

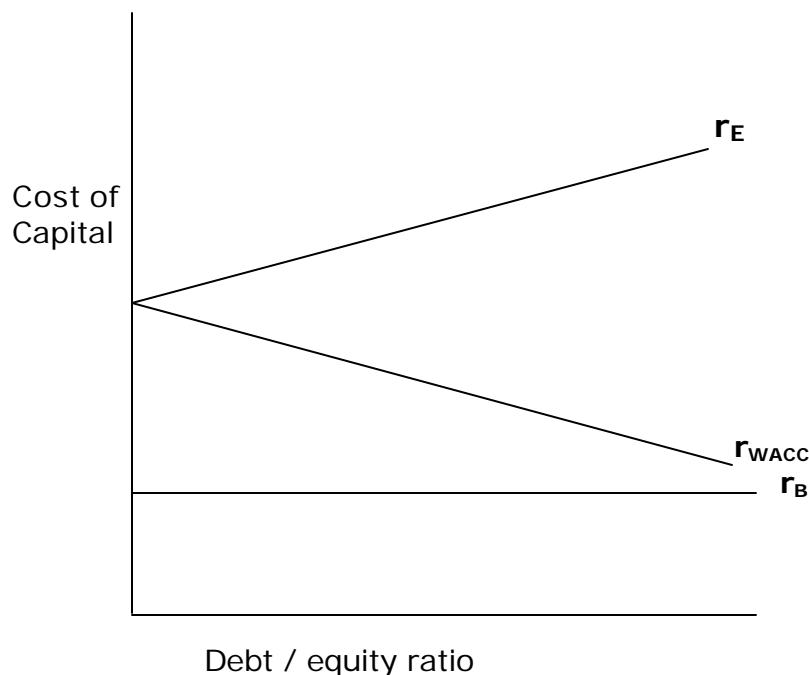
$$r_E = r_O + D/E (r_O - r_B) (1 - T_c)$$

$$r_{WACC} = r_O * (1 - T_c) * [D / (D + E)]$$

Where:

$r_E$	=	Required rate of return to equity shareholders of a Levered firm
$r_O$	=	Required rate of return to equity shareholders of a zero Debt company
$r_{WACC}$	=	Weighted average cost of capital
$D$	=	Proportion of debt in a capital structure of a firm
$E$	=	Proportion of equity in a capital structure of a firm
$r_B$	=	Required rate of return to the lenders
$T_c$	=	Corporate income tax rate

The graphic presentation of relationship between the financial leverage and required rate of return to equity shareholders and in turn weighted average cost of capital as per MM Proposition II is as under:



**Fig. 14.2: Relationship between Financial Leverage & Cost of Equity**

### 14.5.3 Integration of Tax Effects & Financial Distress Costs

The MM Proposition I states that in the world of corporate income taxes the firm value increases with the financial leverage. Keeping all other things constant, it means that all firms should employ maximum debt. Nevertheless, cost of financial distress will increase with the use of financial leverage and will thus reduce the firm value. The financial distress costs are impaired ability of the firm to service the debt and decision making not to the advantage of the firm. The CFOs of the firms have to thus integrate tax effects and financial distress costs to arrive at optimal amount of debt in the capital structure. The optimal amount of debt and the value of the firm is illustrated as below:

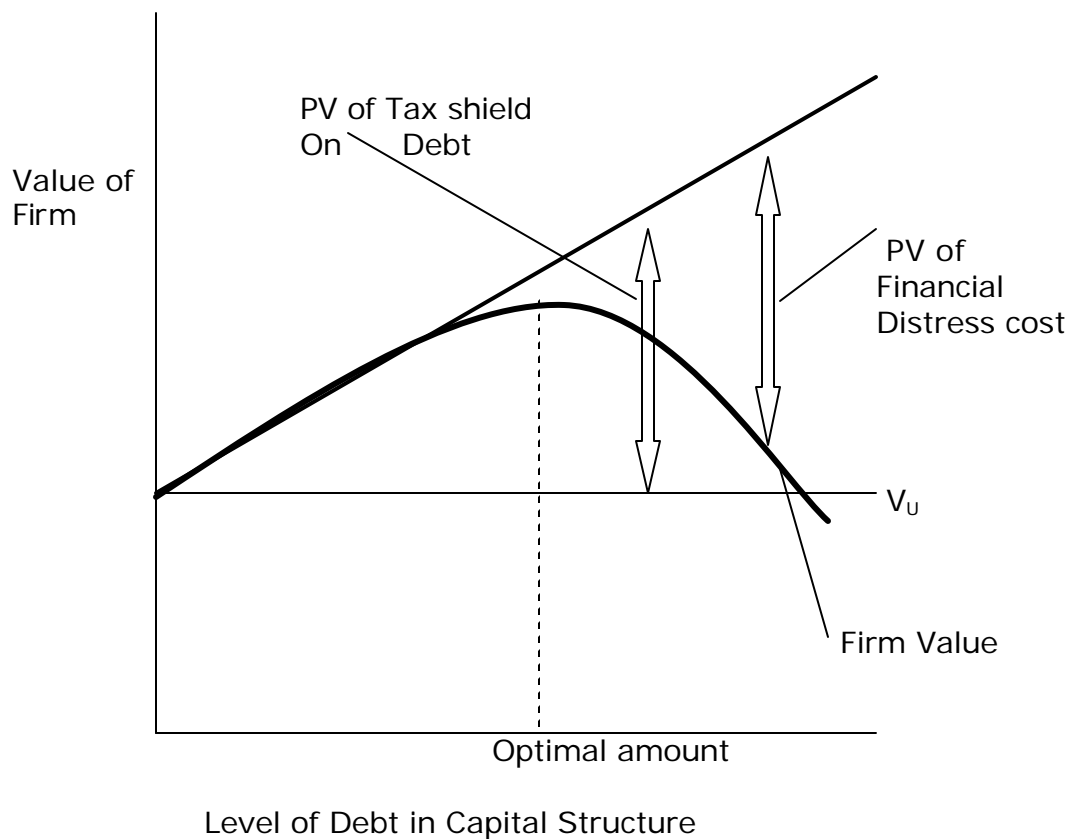


Fig. 14.3: Determining Optimal Amount of Debt

Ross, Westerfield & Jaffe in their book on Corporate Finance have observed that no formula exists to determine optimal amount of debt in capital structure for a particular firm. The discussion highlights the trade-off CFOs have to make between the tax benefits of debt and the costs of financial distress while taking capital structure decisions.

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## **14.6 CAPITAL STRUCTURE DECISIONS & PRACTICES**

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Myers developed on the how do firms choose their capital structures. He contrasts two ways of thinking – static trade-off framework and a pecking-order framework. In a static trade-off framework, a firm has a target debt to value ratio and gradually move towards it. The pecking-order theory states that firms prefer retained earnings to external financing. Moreover, if funds requirements exceed retained earnings then debt is preferred to equity. He argues that firm avoid financing real investment opportunity either by issuing equity or by risky securities because of difficulty in pricing external equity correctly due to information asymmetry between the management and the shareholders; and dilemma to share benefits of positive NPV projects with outsiders. The professional management avoids relying on external finance because it would subject them to the discipline of the capital market. The pecking-order theory does not imply a well-defined debt to value ratio. The ratio will vary as capital expenditure and retained earnings change.

Although the empirical research in testing the “pecking order” can be considered as mixed, there are an increasing number of studies providing evidence in line with the theory.

Barclay, Smith Jr. and Watts (1995) study of 6700 industrial companies over the past thirty years finds that the most important determinant of a firm’s leverage ratio and dividend yield is the nature of its investment opportunities. The firms with large intangible growth opportunities have significantly lower leverage ratios and dividend yields, on average, than companies whose values is represented primarily by tangible assets. The explanation given for this pattern of financing is that high leverage and dividends can control free cash flow problems in case of mature firms with limited growth opportunities. For high-growth firms, the under-investment problem associated with heavy debt financing and the floatation cost of high dividends make both policies potentially costly.

Pinegar and Wilbricht (1989) survey of Fortune 500 firms indicates that retained earnings is the first choice of the financial officers (85%) for financing long term projects. 40% of the respondents indicate equity as a last choice of alternatives for raising capital. 60% of the firms indicate that they prefer to use debt and preferred stock to avoid dilution in control of common stockholders. 75% of the respondents agree that the firm value, stable cash flows and financial independence significantly influence the capital structure decision of the firm.

Billingsley and Smith (1996) survey of 243 firms finds that firms use convertibles primarily as an alternative to the straight debt, employing a conversion feature to buy down the coupon rate and thus preserve cash flow. There is a steady trend towards decreasing reliance on convertibles as delayed equity financing.

Barclay and Smith Jr. (1999) study provides strong support to the argument that a firm's financial architecture is determined primarily by its investment opportunities. The companies with high market-to-book ratio tend to use less debt than companies with low market-to-book ratios. The debt raised by growth firms also tends to have shorter maturity and higher priority than the debt issued by the mature firms. The said financing pattern is interpreted as the result of efforts to preserve financial flexibility and proper investment incentive in growth firms while providing strong managerial incentive for efficiency in mature firms.

Fan and So (2000) study finds that Hong Kong firms conformed more to the "pecking order" principle than a target long-term debt-equity mix in their financing decisions. There is strong evidence that financing and investment decisions are made simultaneously. The firms within the same industry tend to have more similar capital structure, though it is not a deliberate choice of the management. Firm size is found to be a determinant of capital structure. No evidence is found that managers took into consideration the proportion of intangible assets over total assets of a firm in making capital structure decisions.

Graham and Harvey (2001) survey finds that earnings volatility, tax advantage of interest on debt and credit rating are important determinants of debt policy for large firms and that are in Fortune 500. They find little evidence that firms directly consider personal taxes when deciding on debt policy (rating of 0.68). 34% of the respondents have tight target range of debt-equity ratio, 10% have strict, another 37% have flexible target debt ratio, and 19% of the firms do not have target ratio. The investment grade firms (64%) are more likely to have strict or tight target debt ratio than the speculative firms (41%). Targets are important if the CEO has short tenure or is young.

Bhaduri (2002) study of capital structure choice in developing countries through a case study of Indian corporate sector finds that capital structure choice is influenced by factors such as growth, cash flow, size, and product and industry characteristics.

Anand (2002) study surveys 81 CFOs of top-500 companies of India and her most valuable PSUs to find out the corporate finance practices with respect to capital budgeting decisions, cost of capital, capital structure, and dividend policy decisions.

The respondents were asked to indicate their sources of financing choices and rank them in order of their relative importance in terms of their use. The options given to them are retained earnings, debt and equity funds to find out whether pecking order theory of capital structure holds in corporate India. The results indicate that retained earnings are most favoured source of finance amongst the CFOs. 89.9% of the respondents

consider it very important / important source of finance. There is a significant difference in the use of internally generated funds by the highly profitable firms (based on ROCE and EVA) vis-à-vis low profitable firms (mean score of 4.80 versus 4.23 and 4.78 versus 4.24 respectively). The low profitable firms are using different forms of debt funds, more than the highly profitable firms (based on EVA). These findings are consistent with the theory. The firms with low long term debt ratio are more likely to use internally generated funds than the firms with high long term debt proportion in their capital structure (mean score of 4.92 versus 4.13).

Loans from financial institutions and private placement of debt are the next most widely used sources of finance. 59% of the respondents have indicated the loans from financial institutions and 32.9% for private placement of debt as most important / important source of finance. The larger firms (based on sales and assets) are more likely to go in for bonds issue in the primary market than the small firms (mean score of 1.97 versus 0.97).

The debt in the form of, loans from DFIs, or private placement of debt or bonds issue in the primary market, is preferred more by the low growth firms than the high growth firms (mean score of 3.74 versus 2.97; 2.82 versus 1.80; and 2.16 versus 0.82 respectively).

The shareholders or the firm may take on risky projects to expropriate wealth from the bondholders to shareholders [Jensen and Meckling (1976)]. The use of convertible bonds [Green (1984)] and short-term debt [Myers (1977)] will restrict the asset substitution. The use of hybrid securities is least popular amongst corporate India. Only 12.20% of respondents have indicated hybrid securities as their most favoured source of finance. 15% of respondents considered preference share capital as most preferred / preferred source of finance. There is a significant difference in the use of hybrid securities by the low profitable firms (based on EVA) vis-à-vis highly profitable firms (mean score of 1.51 versus 1.05). The low growth firms are more likely to use hybrid securities than the high growth firms as source of finance (mean score of 1.64 versus 1.14). There is a significant difference in the use of preference capital between the public sector and private sector and low growth and high growth firms (mean score of 0.14 versus 1.42 and 1.78 versus 0.97 respectively).

The equity capital as a source of finance is not preferred by the CFOs respondents (mean score is 1.40). Only 16.9% of the respondents consider it as most preferred / preferred source of finance. There is no significant difference in the use of equity capital between the firms, classified based on size, profitability, risk, growth, CFO's education, and sector.

To conclude, the present study's analysis of capital structure finds that the retained earnings is the most preferred source of finance followed by debt and then equity. The results seem to suggest that firms do not have

specific capital structure in mind when deciding as to how best finance their projects. Low growth firms prefer more use of debt in their capital structure vis-à-vis the high growth firms. The companies that do not create shareholder value prefer debt than the EVA companies. The large firms prefer making bonds issue in the primary market. Very few firms use hybrid securities as a source of finance to protect bondholders from the firm/shareholders taking on risky or unfavourable projects. The pecking order theory holds in India.

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## **14.7 LET US SUM UP**

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- We have learnt as to how the CFOs make trade off between risks and return while determining optimal capital structure of the firm.
- Corporate tax rates, type of assets, uncertainty in operating income & pecking order theory & financial slack are the factors that determine the optimal target debt-equity ratio
- The guiding principles for determining optimal capital structure are return, risk, flexibility, capacity and control
- The EBIT-EPS analysis is a powerful tool available to the CFOs of the firms to make the risk-return trade-off
- The value of levered firm is greater by the present value of tax advantage of interest on debt than the value of unlevered firm
- The MM Proposition II states the relationship between financial leverage and the cost of equity
- There is no precise formula to determine the optimal amount of debt in the capital structure
- Retained earnings are the most preferred source of finance followed by debt and then equity.
- Very few firms use hybrid securities as a source of finance. The pecking order theory holds in India. Debt is preferred more by the low growth firms than the high growth firms.

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## 14.8 KEY WORDS

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**BVPS:** Book value per share i.e. shareholders' funds divided by the number of equity shares outstanding

**Capital Structure:** Debt equity proportion in a capital structure

**EBIT:** Earnings before interest and taxes

**EPS:** Earnings per share i.e. profits after taxes divided by the number of equity shares outstanding

**Financial Distress Cost:** Legal or administration cost of liquidation or reorganization

**Financial Leverage:** The use of debt in the capital structure. It studies the sensitivity of the EPS to the change in EBIT.

**Pecking Order:** The hierarchy of long term financing strategies, where retained earnings is the most preferred source and equity is the last resort

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## 14.9 TERMINAL QUESTIONS / EXERCISES

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1. Discuss the relationship between EBIT and EPS in capital structure decision framework.
2. Why does the expected return on equity rise with the use of financial leverage?
3. What is the precise relationship between required rate of return on equity and financial leverage?
4. What factors affect the choice of debt in a capital structure?
5. State MM Proposition I and illustrate its relevance in today's world.
6. Comment on capital structure policies in practice in India.
7. What are the factors to consider in establishing a debt-equity ratio?

## REFERENCES

Anand, Manoj (2002). "Corporate Finance Practices in India: A Survey," *Vikalpa*, Vol. 27(4), October-December, pp. 29-56.

Barclay, Michael J; and Clifford W Smith, Jr. (1999). "On financial architecture: Leverage, maturity and priority," in Chew, Donald H Jr. (1999) (ed.). *The New Corporate Finance: Where Theory Meets Practice*, Irwin McGraw-Hill, second edition, pp. 230-243.

Barclay, Michael J; Clifford W Smith, Jr.; and Ross L Watts (1995). "The determinants of corporate leverage and dividend policies," *Journal of Applied Corporate Finance*, Vol. 7(4), pp. 4-19.



Bhaduri, Sumitra N (2002). "Determinants of corporate borrowing: Some evidence from the Indian corporate sector," *Journal of Economic and Finance*, Vol. 26(2), pp. 200-215.

Billingsley, R. S. and D. M. Smith (1996). "Why do firms issue convertible debt?" *Financial Management*, Vol. 25, pp. 93-99.

Fan, Dennis K. K. and Raymond W. So (2000). "A survey on capital structure decisions of Hong Kong firms," *Review of Pacific Basin Financial Markets and Policies*, Vol. 3(3), pp. 347-365.

Graham, J. R. and C. R. Harvey (2001). "The theory and practice of corporate finance: evidence from the field," *Journal of Financial Economics*, Vol. 60 (2 & 3), pp.187-243

Pinegar, J Michael; and Lisa Wilbricht (1989). "What managers think of capital structure theory: A survey," *Financial Management*, pp. 82-89.

Ross, Stephen A; R W Westerfield; and J Jaffe (1996). *Corporate Finance*, Irwin Mc-Graw Hill.