
UNIT 17 CAPITAL STRUCTURE

Objectives

The objectives of this unit are to:

- explain the importance of decisions regarding capital structure
- identify the factors that have bearing on determining the capital structure
- explain the concept of an appropriate capital structure

Structure

- 17.1 Introduction
- 17.2 What is Capital Structure ?
- 17.3 Features of an Appropriate Capital Structure
- 17.4 Determinants of Capital Structure
- 17.5 Summary
- 17.6 Key Words
- 17.7 Self-assessment Questions/Exercises
- 17.8 Further Readings

17.1 INTRODUCTION

Finance is a important input for any type of business and is needed for working capital and for permanent investment. The total funds employed in a business are obtained from various sources. A part of the funds are brought in by the owners and the rest is borrowed from others-individuals and institutions. While some of the funds are permanently held in business, such as share capital and reserves (owned funds), some others are held for a long period such as long-term borrowings or debentures, and still some other funds are in the nature of short-term borrowings: The entire composition of these funds constitute the overall financial structure of the firm. You are aware that short-term funds keep on shifting quite often. As such the proportion of various sources for short-term funds cannot perhaps be rigidly laid down. The firm has to follow a flexible approach. A more definite policy is often laid down for the composition of long-term funds, known as **capital structure**. More significant aspects of the policy are the debt equity ratio and the dividend decision. The latter affects the building up of retained earnings which is an important component of long-term owned funds. Since the permanent or long-term funds often occupy a large portion of total funds and involve long-term policy decision, the term **financial structure** is often used to mean the capital structure of the firm.

There are certain sources of long-term funds which are generally available to the corporate enterprises. The main sources are: share capital (owners' funds) and long-term debt including debentures (creditors' funds). The profit earned from operations are owners' funds-which may be retained in the business or distributed to the owners (shareholders) as dividend. The portion of profits retained in the business is a reinvestment of owners' funds. Hence, it is also a source of long-term funds. All these sources together are the main constituents of the capital of the business, that is, its capital structure.



17.2 WHAT IS CAPITAL STRUCTURE?

The term 'capital structure' represents the total long-term investment in a business firm. It includes funds raised through ordinary and preference shares, bonds, debentures, term loans from financial institutions, etc. Any earned revenue and capital surpluses are included.

Capital Structure Planning

Decision regarding what type of capital structure a company should have is of critical importance because of its potential impact on profitability and solvency. The small companies often do not plan their capital structure. The capital structure is allowed to develop without any formal planning. These companies may do well in the short-run, however, sooner or later they face considerable difficulties. The unplanned capital structure does not permit an economical use of funds for the company. A company should therefore plan its capital structure in such a way that it derives maximum advantage out of it and is able to adjust more easily to the changing conditions.

Instead of following any scientific procedure to find an appropriate proportion of different types of capital which will minimise the cost of capital and maximise the market value, a company may just either follow what other comparable companies do regarding capital structure or may consult some institutional lender and follow its advice.

Theoretically, a company should plan an optimum capital structure in such a way that the market value of its shares is maximum. The value will be maximised when the marginal real cost of each source of funds is the same. In general, the discussion on the issue of optimum capital structure is highly theoretical. The determination of an optimum capital structure in practice is a formidable task, and we have to go beyond the theory. That is why, perhaps, significant variations among industries and among different companies within the same industry regarding capital structure are found. A number of factors influence the capital structure decision of a company. The judgement of the person or group of persons making the capital structure decision plays a crucial role. Two similar companies can have different capital structures if the decision makers differ in their judgement about the significance of various factors. These factors are highly psychological, complex and qualitative and do not always follow the accepted theory. Capital markets are not perfect and the decision has to be taken with imperfect knowledge and consequent risk. You might have become interested in identifying some of the important factors which influence the planning of the capital structure in practice. However, before we discuss these factors let us examine the features of an appropriate capital structure in the next section.

Activity 17.1

Look into the financial statement of one large company and one medium or small sized company in the private sector and then arrange a meeting with their executives in the department of Accounting and Finance. Investigate on the following lines:

- a) What is the composition of the capital structure of the company? Why the company has a particular capital structure and why not some other? Was any capital structure planning done before the companies were set up?

.....

.....

.....

.....

.....

.....

.....

.....



- b) Note the differences in the capital structures of the two companies and find out the reasons for the differences.

.....

.....

.....

.....

- b) Are the capital structures of the two companies of their own making or have they evolved on account of circumstances beyond their control?

.....

.....

.....

.....

- d) Do the companies regard their capital structures optimum? If not, what plans do they have or propose to have to set the capital structure right?

.....

.....

.....

.....

17.3 FEATURES OF AN APPROPRIATE CAPITAL STRUCTURE

Capital structure is usually planned keeping in view the interests of the ordinary shareholders. The ordinary shareholders are the ultimate owners of the company and have the right to elect the directors. While developing an appropriate capital structure for his company, the financial manager should aim at maximising the long-term market price of equity shares. In practice, for most companies within an industry, there would be a range of appropriate capital structures within which there are not many differences in the market values of shares. A capital structure in this context can be determined empirically. For example, a company may be in an industry that has an average debt to total capital ratio of 60 per cent. It may be empirically found that the shareholders in general do not mind the company operating within a 15 per cent range of the industry's average capital structure. Thus, the appropriate capital structure for the company ranges between 45 per cent to 75 per cent debt to total capital ratio. The management of the company should try to seek the capital structure near the top of this range in order to make maximum use of favourable leverage, subject to other requirements such as flexibility, solvency, etc.

A sound appropriate capital structure should have the following features:

Profitability: The capital structure of the company should be most advantageous, within the constraints. Maximum use of leverage at a minimum cost should be made.

Solvency: The use of excessive debt threatens the solvency of the company. Debt should be used judiciously.

Flexibility: The capital structure should be flexible to meet the changing conditions. It should be possible for a company to adapt its capital structure with minimum cost and delay if warranted by a changed situation. It should also be possible for the company to provide funds whenever needed to finance its profitable activities.

In other words, from the solvency point of view we need to approach capital structuring with due conservation. The debt capacity of the company which depends on its ability to generate future cash flows should not be exceeded. It should have enough cash to pay periodic fixed charges to creditors and the principal sum on maturity.



The above are the general features of an appropriate capital structure. The particular characteristics of a company may reflect some additional specific features. Further, the emphasis given to each of these features may differ from company to company. For example, a company may give more importance to flexibility than to retaining the control which could be another desired feature, while another company may be more concerned about solvency than about any other requirement. Furthermore, the relative importance of these requirements may change with changing conditions.

17.4 DETERMINANTS OF CAPITAL STRUCTURE

Capital structure has to be determined at the time a company is promoted. The initial capital structure should be designed very carefully. The management of the company should set a target capital structure and the subsequent financing decisions should be made with a view to achieve the target capital structure. Once a company has been formed and it has been in existence for some years, the financial manager then has to deal with the existing capital structure. The company may need funds to finance its activities continuously. Every time the funds have to be procured, the financial manager weighs the pros and cons of various sources of finance and selects most advantageous sources keeping in view the target capital structure: Thus the capital structure decision is a continuous one and has to be taken whenever a firm needs additional finance.

Generally, the factors to be considered whenever a capital structure decision is taken are: (i) Leverage or Trading on equity, (ii) Cost of capital, (iii) Cash flow, (iv) Control, (v) Flexibility, (vi) Size of the company, (vii) Marketability, and (viii) Floatation costs. Let it's briefly explain these factors.

Leverage or Trading on Equity

The use of sources of finance with a fixed cost, such as debt and preference share capital, to finance the assets of the company is known as **financial leverage** or **trading on equity**. If the assets financed by debt yield a return greater than the cost of the debt, the earnings per share will increase without an increase in the owners' investment. Similarly, the earnings per share will also increase if preference share capital is used to acquire assets. But the leverage impact is felt more in case of debt because (i) the cost of debt is usually lower than the cost of preference share capital, and (i i) the interest paid on debt is a deductible charge from profits for calculating the taxable income while dividend on preference shares is not.

Because of its effect on the earnings per share, financial leverage is one of the important considerations in planning the capital structure of a company. The companies with high level of the Earnings Before Interest and Taxes (EBIT) can make profitable use of the high degree of leverage to increase return on the shareholders' equity. One common method of examining the impact of leverage is to analyse the relationship between Earnings Per Share (EPS) at various possible levels of EBIT under alternative methods of financing. The EBIT-EPS analysis is one important tool in the hands of the financial manager to get an insight into the firm's capital structure management. He can consider the possible fluctuations in EBIT and examine their impact on EPS under different financing plans.

You may refer to the section 'Effects of Financial Leverage' in Unit 13 (Leverage Analysis), particularly Table 13.3 for a recapitulation of the effects of financial leverage on earnings per share (EPS) under various financing plans with different mix of equity and fixed return securities, For your facility, we reiterate the demonstration of the effect of financial leverage on EPS by considering three alternative financing plans in Illustration 17.1.

**Illustration 17.1**

Plan A : No debt, all equity shares

Plan B : 50% debt (10%), 30% preference shares (12%), 20% equity shares

Plan C : 80% debt (10%), 20% equity shares

The face value of equity Shares is Rs. 10. The Rates in parentheses indicate the fixed return on debt and preference shares.

The total amount of capital required to be raised is Rs. 2,00,000. The company estimates its earnings before interest and taxes (EBIT) at Rs. 50,000 annually.

Table 17.1
Effect of Financial Leverage on EPS

	(in Rs.)		
	Financing Plan		
	A	B	C
Earnings before interest and taxes	50,000	50,000	50,000
Interest	-	10,000	16,000
Earnings before taxes	50,000	40,000	34,000
Income Tax (50%)	25,000	20,000	17,000
Earnings after taxes	25,000	20,000	17,000
Preference share dividend	-	7,200	-
Earnings available on equity shares	25,000	12,800	17,000
No. of shares	20,000	4,000	4,000
Earnings per share (EPS)	1.25	3.20	4.25

The effect of financial leverage (trading on equity) is presented in Table 17.1. It will be seen that Plan C is the most attractive from shareholders' point of view as the EPS of Rs. 4.25 is the highest under this plan. The lowest EPS is when the company does not use any debt or fixed return securities. You will note that the proportion of fixed return, securities under plans B and C is the same (80%). However, plan C gives a higher EPS for the reason that dividend on preference share is not deductible for income tax purposes while interest is a deductible charge. Assuming that the estimates about EBIT turn out to be correct, the shareholders would be benefited to the maximum if plan C is adopted. The shares of the company will command a high premium in the market and would be greatly in demand. The managements of companies sometimes intentionally want to make their equity shares very attractive and prized possessions. This they can achieve by the practice of trading on equity. The secret of the advantage in financial leverage lies in the fact that whereas the overall return (before tax) on capital employed is 25% the return on preference share and debt is only 12% and 10% respectively. The savings resulting from this difference enable the management to enhance the return on equity shares.

Although leverage increases EPS under favourable conditions, it can also increase financial risk to the shareholders. Financial risk increases with the use of debt because of (a) the increased variability in the shareholder's earnings and (b) the threat of insolvency. A firm can avoid financial risk altogether if it does not employ any debt in its capital structure. But when no debt is employed in the capital structure, the shareholders will be deprived of the benefit of increases in EPS arising from financial leverage.



Therefore a firm should employ debt to the extent the financial risk perceived by the shareholders does not exceed the benefit of increased EPS.

Cost of Capital

Measuring the costs of various sources of funds is a complex subject and needs a separate treatment. Needless to say that it is desirable to minimise the cost of capital. Hence, cheaper sources should be preferred, other things remaining the same.

The cost of a source of finance is the minimum return expected by its suppliers. The expected return depends on the degree of risk assumed by investors. A high degree of risk is assumed by shareholders than debt-holders. In the case of debt-holders, the rate of interest is fixed and the company is legally bound to pay interest, whether it makes profits or not. For shareholders the rate of dividend is not fixed and the Board of Directors has no legal obligation to pay dividends even if the profits have been made by the company. The loan of debt-holders is returned within a prescribed period, while shareholders can get back their capital only when the company is wound up. This leads one to conclude that debt is a cheaper source of funds than equity. The tax deductibility of interest charges further reduces the cost of debt. The preference share capital is cheaper than equity capital, but is not as cheap as debt is. Thus, in order to minimise the overall cost of capital, a company should employ a large amount of debt.

However, it should be realised that a company cannot go on minimising its overall cost of capital by employing debt. A point is reached beyond which debt becomes more expensive because of the increased risk of excessive debt to creditors as well as to shareholders. When the degree of leverage increases, the risk to creditors also increases. They may demand a higher interest rate and may not further provide loan to the company at all once the debt has reached a particular level. Furthermore, the excessive amount of debt makes the shareholders' position very risky. This has the effect of increasing the cost of equity. Thus, upto a point the overall cost of capital decreases with debt, but beyond that point the cost of capital would start increasing and, therefore, it would not be advantageous to employ debt further. So there is a combination of debt and equity, which minimises that firm's average cost of capital and maximises the market value per share.

The cost of equity includes the cost of new issue of shares and the cost of retained earnings. The cost of debt is cheaper than the cost of both these sources of equity funds. Between the cost of new issues and retained earnings, the latter is cheaper. The cost of retained earnings is less than the cost of new issues because the company does not have to pay personal taxes which have to be paid by shareholders on distributed earnings, and also because, unlike new issues, no floatation costs are incurred if the earnings are retained. As a result, between these two sources, retained earnings are preferable.

Thus, when we consider the leverage and the cost of capital factors, it appears reasonable that a firm should employ a large amount of debt provided its earnings do not fluctuate very widely. In fact, debt can be used to the point where the average cost of capital is minimum. These two factors taken together set the maximum limit to the use of debt. However, other factors should also be evaluated to determine the appropriate capital structure for a company.

Theoretically, a company should have such a mix of debt and equity that its overall cost of capital is minimum. Let us understand this concept by taking an Illustration.



Illustration 17.2

A company is considering a most desirable capital structure. The cost of debt (after tax) and of equity capital at various levels of debt equity mix are estimated as follows:

<i>Debt as percentage of total capital employed</i>	<i>Cost of debt (%)</i>	<i>Cost of equity (%)</i>
0	10	15
20	10	15
40	12	16
50	13	18
60	14	20

Determine the optimal mix of debt and equity for the company by calculating composite cost of capital?

For determining the optimal debt equity mix, we have to calculate the composite cost of capital i.e. K_o which is equal to $K_i p_1 + K_e p_2$

Where K_i = Cost of debt

p_1 = Relative proportion of debt in the total capital of the firm

K_e = Cost of equity

p_2 = Relative proportion of equity in the total capital of the firm

Before we arrive at any conclusion, it would be desirable to prepare a table showing all necessary information and calculations.

Table 17.2
Cost of Capital Calculations

K_i %	K_e %	p_1	p_2	$K_i p_1 + K_e p_2 = K_o$
10	15	0.0	1.00	$0 + 15.0 = 15$
10	15	0.2	0.8	$2.0 + 12.0 = 14$
12	16	0.4	0.6	$4.8 + 9.6 = 14.4$
13	18	0.6	0.5	$7.8 + 9.0 = 16.8$
14	20	0.6	0.4	$8.4 + 8.0 = 16.4$

The optimal debt equity mix for the company is at a point where the composite cost of capital is minimum. From Table 17.2 it is evident that a mix of 20% debt and 80% equity gives the minimum composite cost of capital of 14%. Any other mix of debt and equity gives a higher overall cost of capital. The closest to the minimum cost of capital is a mix of 40% debt and 60% equity where K_o is 14.4%. It can therefore be concluded that a mix of 20% debt and 80% equity will make the capital structure optimal.

Cash Flow

One of the features of a sound capital structure is conservation. Conservation does not mean employing no debt or a small amount of debt. Conservatism is related to the assessment of the liability for fixed charges, created by the use of debt or preference capital in the capital structure in the context of the firm's ability to generate cash to meet these fixed charges.

The fixed charges of a company include payment of interest, preference dividend and principal. The amount of fixed charges will be high if the company employs a large amount of debt or preference capital. Whenever a company thinks of raising additional debt, it should analyse its expected future cash flows to meet the fixed charges. It is obligatory to pay interest and return the principal amount of debt. If a company



is not able to generate enough cash to meet its fixed obligations, it may have to face financial insolvency. The companies which expect large and stable cash inflows can employ a large amount of debt in their capital structure. It is somewhat risky to employ sources of capital with fixed charges for companies whose cash inflows are unstable or unpredictable.

Control

In designing the capital structure, sometimes the existing management is governed by its desire to continue control over the company. The existing management team may not only want to be elected to the Board of Directors but may also desire to manage the company without any outside interference.

The ordinary shareholders have the legal right to elect the directors of the company. If the company issues new shares, there is a risk of loss of control. This is not a very important consideration in case of a widely held company. The shares of such a company are widely scattered. Most of the shareholders are not interested in taking active part in the company's management. They do not have the time and urge to attend the meetings. They are simply interested in dividends and appreciation in the price of shares. The risk of loss of control can almost be avoided by distributing shares widely and in small lots.

Maintaining control however could be a significant question in the case of a closely held company. A shareholder or a group of shareholders could purchase all or most of the new shares and thus control the company. Fear of having to share control and thus being interfered by others often delays the decision of the closely held companies to go public. To avoid the risk of loss of control the companies may issue preference shares or raise debt capital.

Since holders of debt do not have voting right, it is often suggested that a company should use debt to avoid the loss of control. However, when a company uses large amounts of debt, lot of restrictions are imposed on it by the debt-holders to protect their interests. These restrictions curtail the freedom of the management to run the business. An excessive amount of debt may also cause bankruptcy, which means a complete loss of control.

Flexibility

Flexibility means the firm's ability to adapt its capital structure to the needs of the changing conditions. The capital structure of a firm is flexible if it has no difficulty in changing its capitalisation or sources of funds. Whenever needed the company should be able to raise funds without undue delay and cost to finance the profitable investments. The company should also be in a position to redeem its preference capital or debt whenever warranted by future conditions. The financial plan of the company should be flexible enough to change the composition of the capital structure. It should keep itself in a position to substitute one form of financing for another to economise on the use of funds.

Size of the Company

The size of a company greatly influences the availability of funds from different sources. A small company may often find it difficult to raise long-term loans. If somehow it manages to obtain a long-term loan, it is available at a high rate of interest and on inconvenient terms. The highly restrictive covenants in loans agreements of small companies make their capital structure quite inflexible. The management thus cannot run business freely. Small companies, therefore, have to depend on owned capital and retained earnings for their long-term funds.



A large company has a greater degree of flexibility in designing its capital structure. It can obtain loans at easy terms and can also issue ordinary shares, preference shares and debentures to the public. A company should make the best use of its size in planning the capital structure.

Marketability

Marketability here means the ability of the company to sell or market particular type of security in a particular period of time which in turn depends upon -the readiness of the investors to buy that security. Marketability may not influence the initial capital structure very much but it is an important consideration in deciding the appropriate timing of security issues. At one time, the market favours debenture issues and at another time, it may readily accept ordinary share issues. Due to the changing market sentiments, the company has to decide whether to raise funds through common shares or debt.

If the share market is depressed, the company should not issue ordinary shares but issue debt and wait to issue ordinary shares till the share market revives. During boom period in the share market, it may not be possible for the company to issue debentures successfully. Therefore, it should keep its debt capacity unutilised and issue ordinary shares to raise finances.

Floation Costs

Floation costs are incurred when the funds are raised. Generally, the cost of floating a debt is less than the cost of floating an equity issue. This may encourage a company to use debt rather than issue ordinary shares. If the owner's capital is increased by retaining the earnings, no floation costs are incurred. Floation cost generally is not a very important factor influencing the capital structure of a company except in the case of small companies.

Activity 17.2

You have just read about several factors that affect the determination of capital structure in a company. In this context, meet the finance manager of a large company and ascertain which of these factors had bearing on their capital structure and to what extent.

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....



17.5 SUMMARY

Capital structure is the composition of various sources of long-term finance in the total capitalisation of the company. The two main sources are ownership and creditorship securities. Both types of securities as well as the long-term loans from financial institutions are used by most of the large industrial companies.

Capital structure planning, initially and on continuing basis, is of great importance to any company as it has a considerable bearing on its profitability. A wrong initial decision in this respect may prove quite costly for the company.

While taking a decision about capital structure, due attention should be paid to objectives like profitability, solvency and flexibility. The choice of the amount of debt and other fixed return securities on the one hand and variable income securities, namely equity shares on the other, is made after a comparison of the characteristics of each kind of securities and after careful consideration of internal and external factors related to the firm's operations. In real life situations compromises have to be made somewhere on the line between the expectations of companies seeking funds and the expectations of those that supply them. These compromises do not change the basic distinctions between debt and equity. Generally, the decision about financing is not of choosing between equity and debt but is of selecting the ideal combination of the two. The decision on debt-equity mix is affected by considerations of suitability, risk, income, control and timing. The weights assigned to these factors will vary from company to company depending on the characteristics of the industry and the particular situation of the company. There cannot perhaps be an exact mathematical solution to the decision on capital structuring. Human judgement plays an important role in analysing the conflicting forces before a decision on appropriate capital structure is reached.

17.6 KEY WORDS

Capital Structure (also known as Financial Structure) is the mix of various types of long-term sources of funds, namely debentures, bonds, loans from financial institutions, preference shares and equity shares (including retained earnings).

Cost of Capital is the (weighted) average cost of various sources of finance used by a company.

Financial Leverage (or Trading on Equity) is an aspect of financial planning which enables the company to enhance the return on equity shares by using debt with lower fixed cost which is less than the overall return on investment. Financial leverage magnifies the effect of changes in EBIT (Earnings Before Interest and Taxes) on EPS (Earnings Per Share).

17.7 SELF-ASSESSMENT QUESTIONS/ EXERCISES

- 1) What is capital structure? Explain the importance of capital Structure and planning?
- 2) What are the features of an appropriate capital structure?
- 3) What are the determinants of capital structure? Explain briefly.
- 4) Do you think that different factors affecting capital structure decision will be viewed differently by different companies? Support your answer with suitable examples.
- 5) Make a comparative assessment of different types of securities from the point of view of capital structuring. Under what conditions different types of securities would be considered more suitable?



- 6) Write notes on the following:
- Trading on equity
 - Cost of capital
 - Flexibility in capital structure
 - Closely held company
- 7) A company wishes to determine the optimal capital structure from the following information. Determine the optimum capital structure from the viewpoint of minimising the cost of capital.

Financing Plan	Debt Amount	Equity Amount	After tax Cost of debt Ki%	Cost equity Ke%
A	8,00,000	2,00,000	14	20
B	6,00,000	4,00,000	13	18
C	5,00,000	5,00,000	12	16
D	2,00,000	8,00,000	11	18

17.8 FURTHER READINGS

Khan M.Y. and Jain P.K. 2002. *Cost Accounting and Financial Management*, Tata McGraw Hill (Part-4).

Kulkarni, P.V. Sathya B.G. 1999. *Financial Management*, (ninth revised edition), Himalaya Publishing : Bombay.

Gitman, L.J. 1985. *Principles of Managerial Finance*, Harper & Row : New York (Chapters 12 and 13).

James C., Van Horne and John M. Wachowicz 1985. *Fundamentals of Financial Management*, Prentice-Hall of India : New Delhi (Chapter 17).