Chapter – III

Corporate Financial Structure and firm Value- Theoretical View
CHAPTER III

CORPORATE FINANCIAL STRUCTURE AND FIRM VALUE: THEORETICAL VIEW

3.1 INTRODUCTION

In business there is no any decision making without financial implications, and any decision making that involves the use of money is a corporate financial decision. So, broadly speaking, everything that is done in a business fits under the rubric of corporate finance. The corporate finance suggests to many observers a focus on how large corporations make financial decisions and seem to exclude small and private businesses from its purview. All businesses either small, private or large corporations have to invest their resources wisely, find the right kind of finance mix between equity and debt, to fund these investments, and return cash to the owners (investors) leading to increase in value of firm in the market. Hence, in this chapter, a focus is made to explore the theoretical background of the corporate financial structure and firm value.

3.2 CONCEPT OF CAPITAL STRUCTURE

Capital is the permanent or long-term financing arrangements of the firm. Capital structure refers to the combination of debt and equity capital which a firm uses to finance its long term operations. Debt capital, therefore, is the firm’s long-term borrowings, and equity capital is the long-term funds provided by the shareholders. The firm’s owners’ capital structure is illustrated in chart.
Capital Structure

- Equity capital: eg. Ordinary shares, Retained earnings
- Debt Capital: eg. Bonds and debentures

**Chart No. 3.1: Shows Capital Structure**

Preference share is a hybrid financial instrument possessing some of the characteristics of both debt and equity. The reason being, reference shareholders receive a fixed rate of return, they are included with debt in calculating capital gearing - ratios.

Chart illustrates two firms with differing capital structures. Firm A’s assets are financed by a high proportion of borrowings, i.e., debt finance, whereas by comparison Firm B is low geared, its assets are financed largely by equity.

Gearing: \( \frac{MUo}{(MVo+MVE)} \)

**Comparative Capital-Structures**

<table>
<thead>
<tr>
<th>Firm A</th>
<th>Firm B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total assets</td>
<td>Debt Finance</td>
</tr>
<tr>
<td>Equity</td>
<td>Total assets</td>
</tr>
</tbody>
</table>

High geared structure | Low geared structure

**Chart No. 3.2: Shows Comparative Capital Structure**

2. Ibid; P.453
3. Jim Mc Menamin; op.cit; P.453
CAPITAL STRUCTURE MANAGEMENT

Profit maximisation is the objective of capital structure which ensures the minimum cost of capital and the maximum rate of return to equity holders. The amount of capital a firm needs is not its financial consideration, equally important is the capital mix, the kinds of capital that form the company’s financial base. The main problem is to choose the best mix of debt and equity⁴.

FINANCIAL STRUCTURE Vs CAPITAL STRUCTURE

Financial structure is the mix of all items that appear on the left-hand side of the company’s balance sheet. Capital structure is the mix of the long-term sources of funds used by the firm. In equation form, the relationship between financial and capital structure can be expressed as:

\[
\text{Financial structure} - \text{Current liabilities} = \text{Capital structure}^5
\]

Thus, the distinction, if any, between the two depends on the treatment of short-term borrowing⁶.

OPTIMUM CAPITAL STRUCTURE

The optimum capital structure may be defined as the relationship of debt and equity securities which maximises the value of a firm’s equity stock⁷. A firm should try to maintain an optimum capital structure with a view to maintain financial stability⁸.

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⁶ Bhabatosh Banerjee; “Financial policy and management accounting”; The world Press Pvt Ltd; 2nd Mn; Jan 19874 L534
⁷ Kulkarni. P.V; op cit; P. 647
⁸ Maheswari. S.N; “Financial Management and Corporate Planning 1 Edn; Sultan Chand & Sons; P.234
If the actual debt ratio is below the target level, expansion capital should generally be raised by issuing debt, whereas if the debt ratio is above the target, equity should generally be issued.\(^9\)

**PRACTICAL CONSIDERATIONS INFLUENCING CAPITAL STRUCTURE**

The theory of corporate capital structure is a complex and controversial topic in financial management with more practical consideration which is likely to influence a firm’s capital structure.\(^{10}\)

**a. Assets Structure**

Funds whose assets are suitable as security for loans tend to use debt rather heavily. General purpose assets that can be used by many businesses make good collateral, whereas special-purpose assets do not. Thus real estate companies are usually highly leveraged, whereas companies involved in technological research are not.\(^{11}\)

**b. Control**

Issues of ownership management control can affect long-term financing policy. If for example, existing shareholders are reluctant to see their current ownership position diluted by new equity issues they may act in favour of using debt when it comes to financing choices.

Alternatively managers may choose debt or equity depending on how vulnerable they view their current positions within the firm.\(^{12}\)

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\(^9\) F. Brigham, Joel F. Houston; “Fundamentals of Financial Management”; Harcourt Asia PTE ltd; 9thedn; P.602

\(^{10}\) Jim Me. Menamin; op. cit; PAP

\(^{11}\) Eugene F. Brigham; op. cit; P.630

\(^{12}\) Menamin; loc.cit
c. **Financial flexibility**

Some firms may wish to retain cash reserves and spare barrowing capacity to enable them to respond quickly to investment and market opportunities. For example, a firm with substantial cash reserves will probably find it easier to amount a successful takeover bid than a firm without cash reserves having cash reserves. Having cash reserves means that the firm can readily offer cash to the shareholders of the takeover target. This usually makes a takeover offer more attractive to the shareholders of the target company than a straight share swap and increase it chances of success.\(^{13}\)

d. **Growth rates**

The capital structures of firms are different at the various stage of their development. In the early years of rapid development, equity capital and short term growth are principal sources. As earnings improve, re-invested lendings and long-term debts constitute additional capital. As a firm grows in size, the rate of its internal expansion declines and retained earnings replace the sources of the bonded debts, probably through sinking fund payments. In each field of economic activity, the capital structure and the nature of debt are influenced by the size of a company and equity ratios tend to vary directly with the size.\(^{14}\)

e. **Risk attitudes**

The attitudes of managers and owners towards risk will influence corporate borrowing policies. As we know, managers and owners may be risk-averse, risk indifferent or positively risk seeking in which case this will influence their financing decisions.\(^{15}\) Some management tends to be more conservative than other, and thus use less debt than the avenge firm in their

\(^{13}\) Menamin; loc.cit

\(^{14}\) Kulkani P. V; op.cit, P.645

\(^{15}\) Menamin; loc cit.
industry, whereas aggressive-managements use more debt in the quest for higher profits\textsuperscript{16}.

Similarly the risk attitudes of lenders towards the firm and its management will influence their decisions whether to provide loans and under what terms and conditions. Lenders, for example, may insist on restrictive covenants and impose terms and conditions on loans which are considered so stringent by management as to make them seek an alternative form of financing\textsuperscript{17}.

\textbf{f. Sales Stability}

A firm with relatively stable sales levels - (e.g. utility companies) will have a steadier operating income from which to service debt, that is make interest and principal payments, than a firm with more volatile sales levels (eg. Construction Companies)\textsuperscript{18}.

**DETERMINANTS OF CAPITAL STRUCTURE**

The important determinants of corporate capital structure viz., the corporate tax rate, the growth rate, profitability and nature of the assets of the companies have been changed from period to period due to the various policy measures taken by the Government of India.

The agency problem and asymmetric information problem have increased due to the high fluctuations in the capital market. The trends in equity capital financing, bank credits have changed and the importance of trade credit as a short-term source of financing has increased. Thus, the financing pattern of the Indian corporate sector has changed\textsuperscript{19}.

\textsuperscript{16} Eugene F. Brigham and Joel F. Houston; op.cit; P.630
\textsuperscript{17} Menamin; loc cit.
\textsuperscript{18} Ibid P.472.
\textsuperscript{19} Jitendra Mahakud and L.M Bhole; “Determinants of corporate capital structure in India: A Dynamic PanelData Malysis” “The ICFAI Journal ofAyyliedFinancc”zVoI.9 No6; Sept. 2003;P.42.
The following are the various determinants of capital structure:

a. **Cost of Borrowing**

When the cost of borrowing increases, the dependence on borrowed funds is likely to decline. As a result, the leverage ratio is expected to have a negative relationship with the cost of borrowing. The cost of borrowing can be measured as total interest payment as percentage of total borrowings of the firm\(^{20}\).

b. **Cost of equity**

If the cost of equity increases, the firm is likely to depend more on debt than equity capital. Therefore, the leverage ratio can be expected to be on increasing function of the cost of equity. This variable can be measured as the ratio of dividend payment to share capital of the company\(^{21}\).

c. **Size of the firm**

The capital structures of firms are different at the various stages of their development. In the early years of rapid development, equity capital and short-term growth are principal sources. As earnings improve, re-invested endings and long term debts constitute additional capital. As a firm grows in size, the rate of its internal expansion declines and retained earnings replace the sources of the bonded debts, probably through sinking fund payments\(^{22}\).

d. **Profitability**

A firm with high earnings rate would maintain a relatively lower debt level because of its ability to finance itself from internally generated funds. This is consistent with the proposition that the management of firms desires

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\(^{20}\) Jitendra Mthakud and Bhole LM; op.cit P.44  
\(^{21}\) Jitendra Mthakud and Bhole LM; op.cit P.44  
\(^{22}\) Kulkarni P.V; op.cit; P 645
flexibility and freedom from excessive restrictions often associated with debt covenants.\textsuperscript{23}

e. Growth rate

The growing firms need more funds. The greater the future need for the funds, the more likely that the firm will retain earnings or issue debt.\textsuperscript{24} A firm is expected to rely on debt financing to maintain its debt ratio as its equity increases due to the large retention of earnings. Thus, the firm’s debt level and growth rate are expected to have a positive relationship. This variable can be measured as the annual growth rate of the total assets of the company.\textsuperscript{25}

f. Collateral value -of assets

By selling secured debt, firms increase the value of their equity by expropriating wealth from their existing unsecured debtors. Issuing debt secured by assets with known values also avoids higher interest costs. For this reason, firms with assets, which can be used as collateral, may be expected to issue more long-term debt and hence, total debt to take benefit of this opportunity.\textsuperscript{26}

g. Liquidity

Liquidity ratios are mostly used to judge a firm's ability to meet its short-term obligations. They provide information about the ability of the firm to remain solvent in the event of adversities. The liquidity ratio may have conflicting effects on the capital structure decision of the firm. First, the firm with higher liquidity ratios might have relatively higher debt ratios. This is due to greater ability to meet short-term obligations. From this view point,

\textsuperscript{23} Ran Kumar Kakani; “The determinants of Capital structure - A econometric analysis; “Finance JflCVo1.Xffl; No.1; March 1999;9.56.
\textsuperscript{24} Jitendra Mahakud and Bhole L.M; op. cit; P.45
\textsuperscript{25} Jitendra Mahakud and Bhole L.M; op. cit; P.46
\textsuperscript{26} Ram Kumar Kakani; op.cit; P.52
one should expect a positive relationship between the firm’s liquidity position and its debt ratio\(^\text{27}\).

**Non-debt tax shields**

The tax deductions for depreciation and investment tax credits are substitutes for the tax benefits of debt financing. As a result, firms with large non-debt tax shields relative to their expected cash flow include less debt in their capital structure\(^\text{28}\).

**THEORIES OF CAPITAL STRUCTURE**

Broadly three main strands of capital structure theory have evolved since work first began on analyzing modern capital structure in the early 1950s. The three main theoretical approaches to capital structure which have evolved are respectively referred to as

a. The Traditional Model;

b. The Modigliani and Miller [M and M] model; and

c. The Modern Tradeoff Model \(^\text{29}\)

**a. The Traditional Model**

The essence of the traditional capital structure model is that the value of the company and its capital structure are related and that an optimal capital structure exists at the point where the weighted average cost of capital \([W\text{ ACC}]\) is minimized. This is illustrated in Figure II.C where the cost of the equity is denoted \(K_e\) and the cost of the debt \(K_d\)\(^\text{29}\).

\(^{27}\) Jitendra Mohakud and Bhole L.M; Qp.cit. P.46.

\(^{28}\) Ram Kumar kakani; op.cit; P.53

\(^{29}\) Menamin; op cit; P. 454.
Chart illustrates that according to the traditional model an optimum level of gearing can be achieved. This is shown as point ‘m’ on the graph, the overall cost of capital of the firm is at its lowest and the value of the firm is at its highest\textsuperscript{30}.

**Traditional Model of Capital Structure**

![Chart No. 3.3: Traditional Model of Capital Structure](chart)

Level of gearing

**Chart No. 3.3: Traditional Model of Capital Structure**

b. **Modigliani & Miller LM &MJ Model**

According to M & M, in the absence of corporate tax, the cost of capital and the market value of the firm remain invariant to change in the capital structure or degree of leverage\textsuperscript{31}.

**Proposition - I**

M-M argue that the total market value of the firm \([v]\) and its cost of capital \(K_o\) are independent of its capital structure.

\textsuperscript{30} Menamin; op cit;
\textsuperscript{31} Bhabatosh Banerjee; op cit; P.549
\[ V = \frac{EBIT}{K_o} \]

\[ K_o = \frac{EBIT}{V} \]

or, \( K_o = K_d \frac{D}{V} + K_e \frac{S}{V} \)

EBIT is calculated before interest and therefore it is independent of capital structure or leverage. Cost of capital, \( K_o \), is equal to the capitalization rate of a pure equity stream of its class and is independent of capital structure. If EBIT and \( K_o \), both are, independent of capital structure, \( V \) must also be a constant and independent of capital structure or leverage\(^{32}\).

**Proposition II**

M-M argue that the cost of equity, \( K_e \), is equal to a constant average cost of capital, \( K_o \), plus a risk premium \(^{11}\) that depends on the degree of leverage; i.e.,

\[ K_e = K_o + \text{Risk premium} \]

The premium for financial risk equals to the difference between the pure equity capitalization rate, \( K_o \) and cost of debt, \( K_e \), times the ratio \( D/S \), i.e.,

\[ K_e = K_o + [K_o + K_d] \frac{D}{S} \]

Proposition II states that the firm’s cost of equity increase in a manner to offset exactly the use of cheaper debt founds.\(^{34}\)

\(^{32}\) Bhabatosh Banerjee; op.cit; P.550.

\(^{33}\) Bhabatosh Banerjee; op.cit; P.550.

\(^{34}\) Bhalla Y.K; “Financial management and Policy” Anmooj publication Pvt Ltd; New Delhi (1997); p.845
Interpretation of M-M Hypothesis

When propositions I and II are combined, the M-M Hypothesis implies that although debt is less expensive than equity, inclusion of more debt in the capital structure of a firm will not increase its value because the benefits of cheaper debt capital are exactly off-set by the increase in the cost of equity. Thus, a firm cannot change its total value \([v]\) of its weighted average cost of capital \([K_0]\) by leverage\(^{35}\). Between two firms, levered and unlevered, the levered firm will have a higher value for the same reason\(^{36}\). More specifically, the value of levered firm \([L]\) will exceed that of unlevered firm \([V]\) by an amount equal to \(L\)'s debt multiplied by the tax rate.

\[
V_L = V_u + tD
\]

Where,

\[
V_L = \text{Value of levered firm;}
\]

\[
V_u = \text{Value of the unlevered firm;}
\]

\[
t = \text{Corporate tax rate;}
\]

\[
D = \text{Amount of debt in}\(^{37}\)
\]

t. The Modern Trade-off Model

The modern or current mainstream view prefers to explain capital structure in terms of a trade-off between agency-bankruptcy costs and the tax shield on debt interest\(^{38}\).

i. Agency costs

Agency costs were defined as those incurred in attempting to minimise the agency problem. The agency problem is potential for conflict in objective which exists in a principal-agent relationship\(^{39}\).

\(^{35}\) Bhabatosh Banerjee; op.cit; P.55


\(^{37}\) Bhabatosh Banerjee; op.cit; P.554

\(^{38}\) Jim Me. Menamin; op. cit; P.466
ii. Bankruptcy cost

The more debt a firm employs the greater its financial risk and the greater its fixed payment commitments in terms of interest and principal payments. Increasing levels of fixed payments will increase the demands on a firm’s cash flows. If a firm reaches the position where its cash flows are not sufficient to cover its financial commitments then it is likely to face bankruptcy or insolvency proceeding\(^{40}\).

iii. Financial distress -costs

While bankruptcy or liquidation may be viewed as the extreme and terminal case of financial distress, it is feasible for a firm to struggle through a period of financial distress or hardship without actually being wound up. Other “distress” scenarios would include a restructuring or refinancing of a firm, perhaps even government assistance, direct or indirect, if the company is a major employer\(^ {41}\).

OTHER MODELS OF CAPTIAL STRUCTURE

Two other models of corporate capital structure which have emerged in recent years are:

i. Pecking order model
ii. Information asymmetry and signalling models\(^{42}\),

I. Pecking order model

Myers has suggested that there may be no particular target capital structure. Myer’s packing order theory implies that firms prefer to finance internally. Myers argued that managers modify dividend payouts to avoid the

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\(^{39}\) Jim Me. Menamin; op. cit; P.467
\(^{40}\) Jim Me. Menamin; op. cit; P.468
\(^{41}\) Menamin; loc.cit
\(^{42}\) Jim M.c. Menamin; op.cit; P.469
need for external equity sales while avoiding major changes in the dividend amount. If external financing is required, Myers suggested that the safest securities are issued first. Debt tends to be the first security issued and external equity the security of last resort.\footnote{Myer’s S.C; “The capital structure Puzzle”; “Journal of Finance”; July, 1984; P.575.}

**ii. Information asymmetry and signalling theory**

Information asymmetry

This is in contrast to Modigliani and Miller’s model which assumed that information is symmetrical, i.e., that all investors have access to the same information and share the same expectation about a firm’s future as its managers.

In reality managers will possess intimate inside knowledge about the firm’s operations. As insiders they will have access to more information about a firm than its shareholders and they can share information with shareholders and other shareholders. The unequal access to and distribution of information between managers and owners are known as information asymmetry and it is an agency cost borne, by the shareholders.\footnote{Jim Mc. Menamin; op. cit; P.49}

**SIGNALLING MODEL**

By issuing debt the company would be signalling to investors and current shareholders that the future outlook for the company is bright. Issuing debt would be interpreted as a positive signal about the company’s future.

In contrast the decision by a company to issue equity would generally be interpreted by shareholders and investors as a negative signal, indicating that the company’s future prospects are not so good and that its equity is currently overvalued.
Signalling theory argues that shareholders and the investing community understand these issues; that managers have more information about a firm’s prospects and use financing policy to signal this information to shareholders and investors\(^\text{45}\).

**EBIT - EPS ANALYSIS**

The use of EBIT-EPS analysis indicates to management the projected EPS (Earnings Per Share) for different financial plans. Generally, management wants to maximize EPS satisfies the primary goal of financial management - maximization of the owner’s wealth as represented by the value of business, i.e., the value of the firm’s equity\(^\text{46}\).

**Graphic analysis**

The EBIT-EPS analysis chart allows the decision maker to visualize the impact of different financing plans on EPS over a range of EBIT levels. The relationship between BPS and EBIT is linear\(^\text{47}\).

**Break-even EBIT level**

The break even EBIT for two alternative financing plans is the level of EBIT for which the EPS is the same under both the financing plans. It can be graphically obtained by plotting the relationship between EBIT and EPS under the two alternatives and noting the point of intersection\(^\text{48}\).

The EBIT indifference point between the two alternative financing plans can be obtained mathematically by solving the following equation for EBIT.

\(^{45}\) Ibid; P.470
\(^{46}\) Bhata V.K, op.cit; P.872
\(^{47}\) David F.Scott, JR; Johan D.Martin; William petty. J; Arthur J.Keown; op.cit; P.537.
\[
\frac{[\text{BIT} - I_1(1 - t)]}{n_1} = \frac{[\text{EBIT} - I_2 ](1 - t)}{n_2}
\]

Where EBIT = EBIT indifference point between the two alternative financing plans.

\[
I_1, I_2 = \text{Interest expenses before taxes under financing plan 1 and 2}
\]

\[
T = \text{income-tax rate}
\]

\[
n_1, n_2 = \text{Number of equity shares outstanding after adopting financing plans and 2.}^{49}
\]

### 3.3 THE PRINCIPLES OF CORPORATE FINANCING

All of corporate finance is built on three principles, viz., the investment principle, the financing principle, and the dividend principle. While the investment principle determines where business people invest their resources, the financing principle governs the mix of funding used to fund these investments whereas the dividend principle answers the question of how much earnings should be reinvested back into the business and how much returned to the owners of the business. These three core corporate finance principles are further explained as follows:

**Investment Principle**: Invest in assets and projects that yield a return greater than the minimum acceptable hurdle rate (hurdle rate is the minimum rate that a company expects to earn when investing in a project). The hurdle rate should be higher for riskier projects and should reflect the financing mix used: equity (Owners’ funds) or debt (borrowed money). Returns on projects should be measured based on cash flows generated and the timing of the cash flows. Those who make investments in assets and projects should also consider both positive and negative side effects of these projects.

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49 Chandra; loco cit.
**Financing Principle:** This principle involves choosing appropriate financing mix between debt and equity that maximizes the value of the investments made and matches the financing to nature of the assets being financed.

**Dividend Principle:** If there are not enough investments that earn the hurdle rate, return the cash to the owners of the business. In the case of a publicly traded firm, the form of the return is either dividends or stock buybacks which will depend on what stockholders prefer.

When making investment, financing and dividend decisions, the ultimate objective of corporate finance is maximizing the value of the business. The investment principles provide the basis for extracting the numerous models and theories about modern corporate finance. It is incredible conceit on our part to assume that until corporate finance was developed as a well-organized discipline starting just a few decades ago, business people tended to make decisions randomly without any principles to govern their thinking. At the same time, good business people through the ages have always recognized the importance of the investment principles and adhered to them, albeit in intuitive ways.

Any discipline to develop cohesively over time there should be a unifying objective. The growth of corporate financial theory can be traced back to its choice of a single objective and the development of models built around this objective. In conventional corporate financial theory, the objective is to maximize the value of the business or firm. Consequently, any decision either investment or financial or dividend that increases the value of a business is considered as a good one whereas a decision that reduces firm value is considered a poor one. Many of the disagreements between corporate financial theorists and others (academics as well as practitioners) can be traced to fundamentally different views about the correct objective for a
business. For example, there are some critics of corporate finance who argue that firms should have multiple objectives where a variety of interests of stockholders, labours and customers can be met. There are others (other critics) who run business firms with focus on what they view as simpler and more direct objectives, such as market share or profitability.

With the significance of this objective for both the applicability and development of corporate financial theory, it is important for one to examine it much more carefully and to address some of the very real concerns and criticisms it has garnered. It is assumed that what stockholders do in their own self-interest is also in the best interests of the firm. It is sometimes dependent on the existence of efficient markets and it is often blind to the social costs associated with maximization of firm values.

**The Investment Principle**

Firms always have scarce resources and only these available resources must be allocated among competing needs. In this scenario, the first and foremost function of corporate financial theory is to provide a framework for firms in order to make this investment decision wisely. Accordingly, one has to define investment decisions to include not only those that create revenues and profits such as introducing a new product line or expanding into a new market but also those that save money like building a new and more efficient distribution system. Furthermore, it is argued that traditionally categorized as working capital decisions how much and what type of inventory to be maintained, whether lend credit to customers and if it is so how much credit to grant to customers are ultimately investment decisions as well. Further, broad strategic decisions pertaining to which markets to enter and the acquisitions of other companies can also be considered as investment decisions.
Corporate finance tries to measure the return on a proposed investment decision and compare it to minimum acceptable level of hurdle rate to decide whether the project is acceptable or not. For riskier projects, the hurdle rate has to be set higher and has to reflect the financing mix (the owner’s funds (equity) or borrowed money (debt)) used.

In analyzing projects, three alternative ways of measuring returns, viz., conventional accounting earnings, cash flows, and time-weighted cash flows (where we consider both how large the cash flows are and when they are anticipated to come in) are to be evaluated. Further, one needs to consider some of the potential side costs that might not be captured in any only of these three measures, including costs that may be created for existing investments by taking a new investment, and side benefits, such as options to enter new markets and to expand product lines that may be embedded in new investments, and synergies, especially when the new investment is the acquisition of another firm while analyzing the projects.

**The Financing Principle**

Every business, irrespective of how large and complex, is ultimately funded with a mix of debt (borrowed money) and equity (owner’s funds). With a public firm, debt may be in the form of bonds and equity is usually common stock. In a private firm, debt is more likely to be bank loans and equity is from owner’s savings. Though the existing mix of debt and equity and its implications for the minimum acceptable hurdle rate are considered as part of the investment principle, question arises about whether the existing mix is the right one in the financing principle section.

The discussion of financing methods is begun by looking at the range of choices that exist for both private and publicly traded firms between debt and equity. The question of whether the existing mix of financing used by a business is optimal, given the objective function of maximizing firm value
also arises. Although the trade-off between the benefits of borrowing and costs of borrowing are established in qualitative terms, it is necessary to look at two quantitative approaches to arrive at the optimal mix. In the first approach, we examine the specific conditions under which the optimal financing mix is the one that minimizes the minimum acceptable hurdle rate. In the second approach, the effects on firm value of changing the financing mix are looked.

When the optimal financing mix is different from the existing one, one needs to map out the best ways of getting from the current mix of financing to the optimal financing mix, keeping in mind the investment opportunities that the firm has and need for timely responses, either because the firm is a takeover target or under threat of bankruptcy. After outlining the optimal financing mix, one should turn his / her attention to the type of financing a business should think, whether the financing is long-term or short-term, whether the payments (interest) on the financing should be fixed or variable. Using a basic proposition that a firm will minimize its risk from financing and maximize its capacity to use borrowed funds, if it can match up the cash flows on the debt to the cash flows on the assets being financed, one has to design the perfect financing instrument for a firm. Hence, there should be additional considerations relating to taxes and external monitors to arrive at strong conclusions about the design of the financing.

**The Dividend Principle**

Most businesses, either public or private would undoubtedly like to have unlimited investment opportunities that yield returns exceeding their hurdle rates, but all businesses grow and mature. As a consequence, every business that prosper reaches a stage in its life when the cash flows generated by existing investments is higher than the funds needed to take on good investments. At this stage, every firm has to figure out ways to return the
excess cash to owners. In private firms, this may just involve the owner withdrawing a portion of his or her funds from the business whereas in a publicly traded corporation, this will involve either paying dividends or buying back stock. In the discussion of dividend policy, we introduce the basic trade-off between whether cash should be left in a business or taken out of it. Finally, we consider the options available to a firm to return assets to its owners—dividends, stock buybacks and spin-offs—and investigate how to pick between these options.

**Corporate Financial Decisions, Firm Value, and Equity Value**

If the objective of corporate finance is to maximize firm value, the firm value must be linked to the three corporate finance decisions outlined earlier, viz., investment, financing, and dividend decisions. The link between these decisions and firm value can be made by recognizing that the value of a firm is the present value of its cash flows expected in the future, discounted back at a rate that reflects both financing mix and the riskiness of the projects of the firm. Investors form expectations about future cash flows based on observed current cash flows and expected future growth, which in turn depend on the quality of the firm’s projects (its investment decisions) and the amount reinvested back into the business (its dividend decisions). So, the financing decisions affect the value of a firm through both the discount rate and potentially through the expected cash flows.

These formulations of value for firms is put to test by the interactions among the investment, financing, and dividend decisions and also between the conflicts of interest that arise between stockholders and lenders to the firm, on one hand, and stockholders / managers of the firms, on the other. We introduce the basic models available to value a firm and its equity, and relate them back to management decisions on investment, financial, and dividend
policy. In the process, we examine the determinants of value and how firms can increase their value.

**Some Fundamental Propositions about Corporate Finance**

There are several fundamental arguments about corporate finance that it is internal consistent, integrated as whole, matters to everybody, fun and solve real world problems. The corporate finance has an internal consistency that flows from its choice of maximizing firm value as the only objective function. Moreover, it depends on following bedrock principles: Rewarding the risk, cash flows matter more than accounting income, markets are not easily fooled, and every decision a firm makes has an effect on its value.

Corporate finance is an integrated aspect as whole, rather than a collection of decisions. Investment decisions generally affect financing decisions and vice versa whereas financing decisions often influence dividend decisions and vice versa. Although there are circumstances under which these decisions may be independent of each other, but this is seldom in practice. It is unlikely that firms that deal with their problems on a piecemeal basis will ever resolve these problems because a firm that takes poor investments may soon find itself with a dividend problem due to insufficient funds and a financing problem because of the drop in earnings that may make it difficult for them to meet interest expenses.

Corporate finance matters to all involved in the business. There is a corporate financial aspect to almost every decision made by a business (though not everyone will use all the components of corporate finance, everyone will use at least some part of it). Marketing managers, human resource managers, corporate strategists and information technology managers all make corporate finance decisions every day but often do not
realize it. Therefore, an understanding of corporate finance will help them make better decisions.

Corporate finance is fun, which may seem to be the tallest claim of all. Most people associate corporate finance with numbers, accounting statements, and hard-headed analyses even though corporate finance is quantitative in its focus. There is a significant component of creative thinking involved in coming up with solutions to the financial problems that business firms do often encounter. In these circumstances, it is not coincidence that financial markets remain breeding grounds for innovation and change.

The best way to learn corporate finance is by applying models and theories related to it to real-world problems. Although theories on corporate finance developed over the past few decades are impressive, the ultimate test of any theory is its application. It is argued that much (though not all) of the theories of corporate finance can be applied to real companies.

3.4 CORPORATE FINANCIAL STRUCTURE THEORIES

Since the publication of the Modigliani and Miller’s 50 (1958) “irrelevance theory of capital structure”, the theory of corporate capital (finance) structure has been a study of interest to finance economists. Over the years three major theories of corporate finance structure emerged with divergence from the assumption of perfect capital markets. The first is the trade-off theory. This theory assumes that firms trade-off the benefits and costs of debt and equity financing and find an “optimal” capital structure after accounting for market imperfections such as taxes, agency costs and bankruptcy costs. The second one is the pecking order theory as postulated by

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Myers\textsuperscript{51} (1984). This theory argues that firms follow a financing hierarchy to minimize the problem of information asymmetry between the firm’s managers-insiders and the outsiders-shareholders. The third one is new theory of capital structure: “market timing theory of capital structure” as suggested recently by Baker and Wurgler\textsuperscript{52} (2002). This theory states that the current capital (financial) structure is the cumulative outcome of past attempts to time the equity market. Market timing implies that firms issue new shares when they perceive they are overvalued and that firms repurchase own shares when they consider these to be undervalued. This market timing issuing behaviour has also been well established empirically by others already. But they (Baker and Wurgler) show that the influence of market timing on corporate capital (financial) structure is highly persistent.

Trade-Off Theory

Different authors have used the term trade-off theory to describe a family of related theories. In all the theories, a decision maker of a firm evaluates the various costs and benefits of alternative leverage (financing the capital by debt) plans. The original version of the trade-off theory grew out of the debate over the Modigliani-Miller theorem. The corporate income tax was added to the original irrelevance to create such benefit for debt that serve to shield earnings from taxes. Since the firm's objective function is always linear and there is no offsetting cost of debt in, turn implying 100 per cent debt financing. Therefore several aspects of Myers' definition of the trade-off theory deserve discussion.

First, different papers add that corporate financial structure in different ways. Second, the tax code is much more complex than that assumed by the


theory. Depending on which features of the tax code are included, different conclusions regarding the target can be reached. Third, bankruptcy costs should be deadweight costs rather than transfers from one claimant to another. Haugen and Senbet\textsuperscript{53} (1978) provide a clear discussion of bankruptcy costs. Fourth, transaction costs must take a specific form for the analysis to work. For the adjustment to be gradual rather than abrupt, the marginal cost of adjusting must increase when the adjustment is larger. Leary and Roberts\textsuperscript{54} (2005) describe the implications of alternative adjustment cost assumptions.

**Static trade-off theory**

The static trade-off theory states that firms have optimal capital structures, which firms determine by trading off the costs against the benefits of the use of debt and equity. However, there are benefits and disadvantages of using debt. The benefits of the use of debt are the advantages of a debt tax shield whereas disadvantages of debt are the cost of potential financial distress, especially when the firm relies on too much debt. This leads to a trade-off between the tax benefit and the disadvantage of higher risk of financial distress. But there are more cost and benefits involved with the use of debt and equity. One such cost is agency costs. Agency costs stem from conflicts of interest between the different stakeholders of the firm due to expost asymmetric information (Jensen and Meckling\textsuperscript{55} (1976)). Hence, for a firm, incorporating agency costs into the static trade-off theory is to determine its capital structure by trading off the tax advantage of debt against the financial distress cost arising out of too much debt and the agency costs of debt against the agency cost of equity. Therefore, it is asserted that an


important prediction of the static trade-off theory is that firms target their capital structures (financing the capital).

**Dynamic Trade-off Theory**

In a dynamic model, the correct financing decision typically depends on the financing margin that the firm anticipates in the next period. Some firms expect to pay out funds in the next period, while others expect to raise funds. If funds are to be raised, they may take the form of debt or equity. More generally, a firm undertakes a combination of these actions. An important precursor to modern dynamic trade-off theories was Stiglitz\(^{56}\) (1973). He examined the effects of taxation from a public finance perspective and his model is not a trade-off theory since he took the drastic step of assuming away uncertainty.

Dynamic trade-off models can also be used to consider the option values embedded in deferring leverage decisions to the next period. Goldstein, Ju and Leland\(^{57}\) (2001) have observed that a firm with low leverage today has the subsequent option to increase leverage. Under their assumptions, the option to increase leverage in the future serves to reduce the otherwise optimal level of leverage today. Again, if firms optimally finance only periodically because of transaction costs, then the debt ratios of most firms will deviate from the optimum most of the time.

**Pecking Order Theory**

The pecking order theory does not take an optimal capital structure as a starting point, rather it asserts the empirical fact that firms prefer using internal finance (as retained earnings or excess liquid assets) over external


finance. If internal funds are not sufficient enough to finance investment opportunities, the firms may opt for external financing. If they do so, they will choose among the different external finance sources in such a way as to minimise additional costs of asymmetric information. The resulting pecking order of financing is as follows: internally generated funds first, followed by respectively low-risk debt financing and then share (equity) financing.

In Myers and Majluf model\textsuperscript{58}, outside investors rationally discount the firm's stock price when managers issue equity instead of riskless debt. To avoid this discount, managers avoid equity whenever possible. The Myers and Majluf model predicts that managers will follow a pecking order, using up internal funds first, then using up risky debt, and finally resorting to equity. In the absence of investment opportunities, firms retain profits and build up financial slack to avoid having to raise external finance in the future.

The pecking order theory regards the market-to-book ratio as a measure of investment opportunities. With this interpretation in mind, both Myers \textsuperscript{59} (1984) and Fama and French \textsuperscript{60} (2002) have noted that a contemporaneous relationship between the market-to-book ratio and capital structure is difficult to reconcile with the static pecking order model. Iteration of the static version also suggests that periods of high investment opportunities will tend to push leverage higher toward a debt capacity.

**Market timing theory**

The market timing theory of corporate finance structure (capital structure) argues that firms time their equity issues in the sense that they issue new stock when the stock price is perceived to be overvalued, and buy back

\textsuperscript{58} Myers, S.C., and N.S. Majluf, (1984), \textit{op.cit.}
own shares when there is undervaluation. Consequently, fluctuations in stock prices affect firms’ capital structures. There are two versions of equity market timing that lead to similar capital structure dynamics.

The first version assumes economic agents to be rational. That is, companies are assumed to issue equity directly after a positive information release which reduces the asymmetry problem between the firm’s management and stockholders. The decrease in information asymmetry coincides with an increase in the stock price. In response, firms create their own timing opportunities.

The second version of market timing theory assumes the economic agents to be irrational as observed by Baker and Wurgler\(^\text{61}\) (2002). Due to this irrational behaviour there is a time-varying mispricing of the stock of the company. Managers issue equity when they believe its cost is irrationally low and repurchase equity when they believe its cost is irrationally high. It is important to know that the second version of market timing does not require that the market actually be inefficient. It does not ask managers to successfully predict stock returns. The assumption is simply that managers believe that they can time the market.

3.5 FIRM

In corporate finance, the word ‘firm’ generically refer to any business, large or small, manufacturing or service, private or public. Thus, a corner grocery store and the giant car manufacturing company, Maruti Udyog Limited are both firms and investments of a firm are generically termed assets. Though assets are often categorized by accountants fixed assets (which are long-lived) and current assets (which are short-term and so short-lived), a different categorization of the assets is preferred.

\(^{61}\) Baker, M., and J. Wurgler, (2002), \textit{op.cit.}
The assets that the firm has already invested in the business are called assets in place, whereas those assets that the firm is expected to invest in the future are called growth assets. Though it may seem strange that a firm can get value from investments that has not made yet, high-growth firms can get the bulk of their value from these yet-to-be-made investments. To make investments in the business, i.e., to finance the assets required for the business, the firm can raise money from two sources, viz., funds from individuals (through debentures) or from financial institutions (through debentures / secured borrowings) by promising investors a fixed claim (interest payments) on the cash flows generated by the assets, with a limited or no role in the day-to-day running of the business, which is categorized as debt financing. On the other hand, the financing by individual investors which is eligible for a residual claim on the cash flows (i.e., investors can get what is left over after the interest payments have been made) and a much greater role in the operation of the business is called as equity.

3.6 FIRM VALUE

The value of a firm is the present value of the firm’s current and future profits. The value of a firm is linked to profit maximization. A firm looking to maximize their profits is actually concerned with maximizing its value. As such, it is important for a firm to be able to determine its present value accurately. Firm value depends upon expected earnings stream of the firm and the rate used to discount this stream. The rate used to discount earnings stream is the firm’s required rate of return or the cost of capital. Capital structure decision can thus affect the value of the firm either by changing the expected earnings or the cost of capital or both.

The value of a firm can be simplified using time value of money principles. Thus, the value of a firm is defined as the present value of expected future cash flows plus current cash flows. In this case, we will
assume the expected cash flows to be equal to the expected profits for the
firm. In this study the value of a firm is represented by two proxies Market
Value Added (MVA) and Tobin’s Q. Both measures based on the valuation of
a firm’s security in the market based on its future growth, but the first one is
relative to its book value and next one relative to replacement cost.

**Market Value Added (MVA)**

Market Value Added (MVA) is a tool to measure shareholder’s value
at a particular moment which was introduced by Stewart in 1991. Market
Value Added (MVA) is the valuation of the shares in the market over and
above the book value of equity, which helps to identify the firm value. From
an investor’s point of view, MVA is the best final measure of a company’s
performance.

Stewart\(^62\) (1991) states that MVA is a cumulative measure of corporate
performance and that it represents the stock market’s assessment from a
particular time onwards of the net present value of a Company’s past and
projected capital projects. MVA is calculated at a given moment, but in order
to assess performance over time, the difference or change in MVA from one
date to the next can be determined to see whether value has been created or
destroyed.

The Market Value Added (MVA) measure is based on the assumption
that the total market value of a firm is the sum of the market value of its
equity and the market value of its debt. Stewart\(^63\) (1991) defines Market Value
Added (MVA) as the excess of market value of capital (both debt and equity)
over the book value of capital. If the Market Value Added (MVA) is positive,
the company has created wealth for its shareholders. If it is negative, then the


firm has destroyed value. The capital is the amount that is put in the company by the shareholders.

In order to calculate the market value of a firm, we have to value the equity part at its market price, on the date the calculation is made. The total investment in the Company, since day one is then calculated as the interest-bearing debt and equity, which includes retained earnings. Present market value is then compared with total investment. If the former amount is greater than the latter, the Company has created wealth.

The capital structure theories developed later (trade-off theory, pecking order theory, signalling theory, agency theory, market timing theory) demonstrated that firm value can be affected by capital structure decisions. For determining the optimal capital structure, these modern theories take into account taxes and financial distress costs (trade-off theory), agency costs (agency theory), information asymmetry (signalling theory, pecking order theory) and effects of market imperfections (market timing theory).

3.7 TOBIN'S Q

Tobin's Q is the ratio between a physical asset's market value and its replacement value. It was introduced in 1968 by James Tobin and William Brainard. The market value of capital is priced in the stock market and it is the number of shares outstanding, times their market price. The replacement cost of capital depends on the situation in the capital goods sectors. If the demand for capital goods is strong, the price of capital goods will rise. If Q>1, then firms have an incentive to increase their capital stock because capital once installed and producing goods and services is priced more highly than it’s cost. If Q < 1, then the firms scrap capital, close plants, etc.

Thus, the numerator of the Q equation provides a correct indication of the current worth and likely prospects for the business. If a firm faces a Q>1,
then this is a signal that it should buy additional capital because the present value of the future earnings from such capital will be greater than its cost. If a firm is well regarded by the markets, then q will rise and the firm should increase its capital stock. This can be achieved by either purchasing capital equipment or by taking over the assets of other firms.

**Equity and Firm Value**

Equity unlike long-term debt includes paid-up share capital, share-premium, reserves and surplus or retained earnings. Igben\(^{64}\) (2004) defines paid-up capital as the portion of the called-up capital which has been paid-up by the shareholders. He also describes reserves as amounts set aside out of profits earned by the company, which are not designed to meet any liability, contingency, commitment or diminution in value of assets known to exist at the balance sheet date. Reserves may be voluntarily created by directors or statutorily required by law. Share premium is the excess amount derived from the issue of shares at a price that is above its par value. And lastly, retain earnings are profit plough back into a company in order to create more resources for operations and invariably increase in the value of the firm.

The relationship between capital structure and firm’s value can best be explained by a brief review of the different theories on capital structure. The traditionalist theories believe that capital structure is relevant in determining a firm’s value. But the irrelevance theory of Modigliani and Miller\(^{65}\) (1958), posit that there is no relationship between capital structure and firm’s value. However, their position changed when they considered the effect of tax shield and other imperfection in the capital market. They revise their earlier statement and opine that capital structure is very much related to firm’s value.


Miller\textsuperscript{66} (1977), came up with another argument and showed that capital structure is unrelated to firm’s value because the tax benefit which is adduced for the relevance of capital structure in relation to a firm’s value is offset by the fact that shareholders pay more tax than bondholders. In addition, the pecking order theory of Myers and Majluf\textsuperscript{67} (1984), state that there is a correlation between capital structure and a firm’s value. This is because a firm’s value can increase if the right form of capital is used. This theory advocates that firm’s value can be affected positively if a capital structure hierarchy is followed. That is, financing with internal fund when available instead of financing with external fund. And when internal fund is completely depleted, debt should be preferred to equity because of the low transaction cost, tax benefits and other advantages attached to it. The trade-off theory also states that there is a relationship between capital structure and a firm’s value. This is because a firm’s value can increase if the proper debt equity mix is used in the firm.

\textbf{Long-term Debt and Firm Value}

Leland and Toft\textsuperscript{68} (1991) state that, the value of a firm is the value of its assets plus the value of tax benefits enjoyed as a result of debt minus the value of bankruptcy cost associated with debt. The value of a firm is the sum of its debt and equity and this depends only on the income stream generated by its assets. Pandey\textsuperscript{69} (2004) opines that the value of a firm is the sum of the values of all its securities. That is, the sum of its equity and debt if it’s a leverage firm and the value of only its equity, if it is an unleveraged firm. The value of the firm’s equity is the discounted value of its shareholders earnings called net income. That is, the net income divided by the equity capitalization

\textsuperscript{67} Myers, S. C. and N. S. Majluf (1984), \textit{op.cit.}
rate or expected rate of return on equity. The net income is obtained by subtracting interest on debt from net operating income. On the other hand, the value of debt is the discounted value of interest on debt.

Consistent with agency costs theory, prior literature indicate that debt is value reducing for high growth firms and it is value enhancing for low-growth firms. Jensen\textsuperscript{70} (1986) posits that when firms have more internally generated funds than positive net present value projects; debt forces the managers to pay out funds that might otherwise have been invested in negative net present value projects. This over-investment problem can be lessened if managers are forced to pay out excess funds for servicing debt, therefore enhancing the firm’s value. Myers\textsuperscript{71} (1993) suggests that, a firm with outstanding debt may have the incentive to reject projects that have positive net present value if the benefits from accepting the project accrue to the bondholders without also increasing shareholders’ wealth. This under – investment problem can harm the value of firms, especially for the firms with high levels of future investment opportunities. Building on Jensen’s (1986) over-investment discussion and Myer’s (1993) under-investment discussion, Stulz\textsuperscript{72} (1988) argues that debt can have both positive and negative effect on the firm value.

Aggarwal and Kyaw (2006) also posit that, debt can have both positive and negative effects on the value of the firm so that the optimal debt structure is determined by balancing the agency costs and other costs of debts as a means of alleviating the under and over-investment problems. Specifically, when firms have surplus cash flows, debt will force managers to pay out funds that might otherwise have been invested in negative net present value


projects. However, firms with outstanding debt may have incentives to reject projects that have positive net present value if the benefit from accepting the project accrues to the bondholders without also increasing shareholders’ wealth. Therefore, the common message behind the arguments by Jensen (1986), Myers (1993) and Stulz (1988) is that debt can have positive or negative effect on the value of the firm depending on the firm’s future investment opportunities.

In addition, McConnell and Servas\textsuperscript{73} (1995) posit that, the seeds of under-investment problem lie in the solution of over investment problem. They investigate the relationship between corporate values, leverage and equity ownership of U.S. firms. They discover that for firms with high P/E ratios or for high-growth firms, value is negatively related to leverage and that in firms with low P/E ratio or low-growth firms, value is positively related to leverage. Their evidence supports the contention that for low-growth firms, leverage act as a monitoring mechanism to enhance a firm value, whereas for high-growth firms, leverage causes under investment and destroys the value of a firm.

3.8 CHAPTER SUMMARY

In this chapter, theoretical aspects of corporate financial structure (corporate capital structure) and firm value along with theories pertaining to relationship between corporate financial structure and firm value is exposed. It is understood that the investment principle specifies that businessmen invest only in projects that yield a return that exceeds the hurdle rate. The financing structure principle suggests that the right financing mix between debt and equity for a firm is one that maximizes the value of the investments made. The dividend principle requires that cash generated in excess of good project

needs be returned to the owners. These principles are the core for corporate finance structure.

Regarding firm’s financial (capital) structure, the Modigliani-Miller theorem opened a literature on the fundamental nature of debt and equity. The capital structure of a firm is the result of the transactions with various suppliers of finance. The various theories of capital structure differ in their interpretation of various factors of corporate financial structure. Each emphasizes some cost and benefits of alternative financing strategies. According to the standard trade-off theory, taxes and bankruptcy account for the corporate use of debt. According to the standard pecking order theory, adverse selection accounts for the corporate use of debt. Both theories having weak parts, it is not surprising that there is active research on this matter. In the market timing theory, there is no optimal capital structure, so market timing decisions accumulate over time into the capital structure outcome.

Regarding firm value, it is understood, the value of a firm is linked to profit maximization because a firm looking to maximize its profits is actually concerned with maximizing its value. Firm value is stated to depend upon expected earnings stream of the firm and the rate used to discount this stream. The rate used to discount earnings stream is the firms required rate of return or the cost of capital. Capital structure decision can thus affect the value of the firm either by changing the expected earnings or the cost of capital or both. The MVA, as a tool to measure shareholder’s value at a particular moment, is the valuation of the shares in the market over and above the book value of equity and it helps identify the firm value. The MVA measure is based on the assumption that the total market value of a firm is the sum of the market value of its equity and the market value of its debt. While positive MVA indicates the creation of wealth and its negative values reveals the wealth destruction to the shareholders.
The relationship between capital structure and firm’s value can best be explained by a brief review of the different theories on capital structure. The traditionalist theories believe that capital structure is relevant in determining a firm’s value. It is argued that capital structure is unrelated to firm’s value because the tax benefit which is adduced for the relevance of capital structure in relation to firm’s value is offset by the fact that shareholders pay more tax than bondholders. Further, there is a correlation between capital structure and firm’s value according to pecking order theory. The trade-off theory also stated relationship between capital structure and firm’s value. Debt is stated to be having both positive and negative effects on the value of the firm so that the optimal debt structure is determined by balancing the agency costs and other costs of debts as a means of alleviating the under and over-investment problems.