

CHAPTER - I

INTRODUCTION

1.1 Background of the Study

The study of capital structure occupies an important place in finance. Since the seminal work of Modigliani and Miller (1958), hereafter referred to as MM, the study of capital structure has received much attention in finance literature. Especially significant is Modigliani and Miller's important contribution to capital structure theory in 1958, which showed that, given a company's investment policy, and not taking taxes and transaction cost into account, the choice of financial policy does not affect the current market value of the company (Pardon, Caceres & Santana, 2005) Many studies indicated that firm's capital structure decisions are affected by several industry and firm related characteristics. The capital structure models have examined the firm's characteristics namely size, fixed asset, growth opportunities, non debt tax shield, volatility, profitability and liquidity among others as determining factors of capital structure.

In spite of decades of extensive research, the theory of capital structure remains one of the most controversial issues in modern corporate finance and Myer's (1984) eighteen years old questions "How do firms choose their capital structure?" still remains unanswered, It also appears from theories of capital structure that the optimal use of debt and equity result into reduction in overall cost of capital that maximizes the value of firm because of gain and cost to leverage. Thus, the firm should strive to use optimal level of capital structure as part of its value maximization objective.

Capital structure plays a vital role in the life of an organization. The term capital structure refers to the proportion of debt and equity capital. Equity provides ownership of the firm to shareholders. On the other hand the debt borrowed fund has fixed charge as an interest which is irrelevant to the earnings of the firm. A proper balance between debt and equity is necessary to ensure a tradeoff between risk and return to the shareholders. In other words, the point where the largest positive difference exists between expected rate of return and required rate of return is called optimal capital structure.

For an optimal capital structure, the analysis of risk and return on various leverage positions are essential. Thus, the optimal debt-equity mix depends on the nature of business and there on kinds of investments that the company makes (Solomon and Prinjal, 1978). But the capital structure decision in addition to these variables is influenced by several other variables viz nature of the company, capital market situation, interest of the management, and investors to control ,liquidity position and operating efficiency of the company, company and regulation etc.

If a Judicious decision of capital structure is made taking consideration all these factors, it will be a thing to maximize the value of the company. The leverage also affects on risk due to earning variability or bankruptcy cost. The prevailing market price of the securities of an enterprise determines the value of the enterprises. The expected earning and risk depends upon operating efficiency and financial leverage. In almost all public enterprises capital structure continued to remain a very indeterminate problem due to the lack of guided criteria that determines it (Shrestha, 1985:5-6). The various study reports and official documents relating to public enterprises streamline the maintenance of ad-hoc capital structure to the extent that neither the government nor public enterprises themselves have been serious in the appropriate determination of capital structure. Most of Nepalese companies do not seem to have been able to meet their objective because in most of the companies there is no existence of debt capital in their capital structure or equity capital is only the source of financing.

1.2 Statement of the Problem

How firms make their capital structure decisions has been one of the most extensively researched areas in corporate finance (Bancel & Mitto, 2004). MM concluded that there exists no optimal capital structure as such that affects the firm's cost of capital and there is no gain to leverage. With the relaxation of no tax world assumption, Modigliani and Miller concluded there is gain to leverage and value of the firm is attributed to the present value of operating cash flows generated by assets in place, by tax subsidy on debt, by growth potential and by firm size.

Capital structure is difficult issue to test empirically often, changes in capital structure are made simultaneously with new investment decision. Financial economists have not hesitated to give advice on capital structure, even though how firms actually choose their capital structures remains a puzzle as the theories developed did not seem to explain fully the actual financing behavior. The characteristics of firm that have been found to influence capital structure include: asset tangibility, size, profitability, growth, risk, non debt tax shields, and industrial classification. There are controversies about the determinants of capital structure.

Capital structure concept is not taken seriously by the Nepalese companies. Therefore optimal capital structure does not exist at all. Among the listed companies in the stock exchange very few are using the debt capital and contrary to this some of the companies are ruined by the excess burden of the cost of debt capital. Some company use only debt and some combine both equity and debt capital. Therefore determinants of capital structure depend up on company policy. Unfortunately there is no model for determining capital structure in the Nepalese business organization.

This study, therefore, attempts to study the nature of corporate capital structure and its determinants of corporate sectors of Nepal in the light of accelerating pace of development in financial and capital market. Specifically, this study would be focused on dealing with the following capital structure issues;

-) What is the capital structure pattern in Nepalese listed companies? W
-) Whether or not the capital structure is affected by size, risk, growth, profitability. W
-) How do firm characteristics such as firm's size, asset tangibility and growth explain the capital structure of non financial listed firms? H
-) What are the major determinants of capital structure in Nepalese listed companies? W

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ow much long term debt is used by Nepalese listed companies?

1.3 Objectives of the Study

The main objective of this study is to examine the major determinants of capital structure in context of Nepalese companies. The specific objectives of this study are as follows:

- J To study the relationship between different leverage measures and firm characteristics.
- J To study and examine the major determinants of capital structure.
- J To study the relationship among various form of characteristics.
- J To know about weight of long term debt in total asset.

1.4 Limitations of the Study

There are some limitations in undertaking this study. Among listed companies very few companies have been using the debt capital. Some companies have been selected as sample size due to the data problem. Beside these some of the major limitations are presented below;

- J This study is based on secondary data published by Nepal stock exchange and security board Nepal.
- J The calculation of dependent and independent variables are based on accounting data of the enterprises published by Nepal stock exchange and security board Nepal.
- J Due to the unavailability of necessary information it varies from company to company.
- J The closing market price of previous years are taken as market price of stock while calculating value of the firm where the actual market price of stock is not available and the calculations to fit the analytical mode are made by computer.
- J Focus is given only to analyze the determinants of capital structure.
- J Book value of equity is used instead of market value.

) The data and analysis is based on very limited periods of time.

1.5 Organization of the Study

This study has been organized into five chapters, each devoted to some aspects of study of capital structure and it's determinants.

Chapter one to five consists of introduction, review of literature, research methodology, presentation and analysis of data and: summary, conclusion and recommendation of the study.

Chapter one deals with introduction which consists of background of study, statement of problems, objectives of study, and limitations of study and organization of study.

Chapter two, Review of literature includes review of capital structure theories review from books, review of empirical studies and articles and review of dissertations.

Chapter three, Research methodology describes the methodology employed in the study and also includes research design, nature and sources of data, population and sample size, period of study, tools employed and description of variables.

Chapter four contains with presentation and analysis of data with their interpretations by using the statistical and financial tools.

Finally chapter five represents the summary, conclusion and recommendations of the study.

CHAPTER - II

REVIEW OF LITERATURE

In this chapter, review of various literatures has been done to clarify the concept of the topic as well as to examine the previous studies made by various researchers in the field of capital structure. This chapter has been divided into the following two sections.

1. R
Review of capital structure theories.
2. R
Review of empirical studies.

2.1 Review of Capital Structure Theories

Several theories have been emerged on capital structure. Those theories can be grouped into two schools of thought. One suggests that an optimal capital structure exists for a firm and the other hand holds the view that no such capital structure exists. The theories based on both versions have dominated the financial world. They are classified as follows:

-) **B**
Behavioral Theories
- a. N
Net Income (NI) Approach
- b. N
Net operating Income (NOI) Approach

c. Traditional Approach T

) Contemporary Theories C

a. -M Theory without Taxes M

b. -M Theory with Taxes M

2.1.1 Behavioral Theories

Behavioral theories were developed by David Durand (Durand, 1952) by considering the rational reaction of investors to firm's leverage risk, although his theories sound intuitively appealing, they are not found in a scientific base.

a) Net Income (NI) Approach

The Net income (NI) approach is also called as relevancy theory of capital structure because the capital structure decision is relevant to the valuation of the firm.

According to this approach, there is no change in the attitude of the both stockholders and debt holders regarding their required rate of return in response to a change in debt equity ratio of the firm. In other words, the cost of debt capital and the cost of equity capital remain unchanged when leverage ratio varies. Due to the limited degree of risk, the debt holder's required rate of return is relatively lower than that of equity holders. So the debt financing relatively cheaper than that of equity. In addition, at constant cost of equity (K_e) and cost debt (K_d), the overall cost of capital (K_o) declines with the increased proportion of debt in the capital structure or increment of debt results, lower overall cost of capital and higher value of the firm. The NI approach is based on following assumptions (Khan and Jain, 1996):

1. The corporate taxes do not exist.

2. The use of debt does not change the risk perception of investors as a result: K_e and K_d remain constant with increased use of debt.
3. The cost of debt (K_d) is less than the equity capitalization rate or cost of equity (K_e)

According to these assumptions, the increase in debt ratio magnifies the earning per share. On the given equity capitalization rate, the increase in EPS makes an increase in market price of stock, i.e.:

$$MPS = \frac{EPS}{K_e}$$

Where

MPS = Market price of stock

EPS = Earning per share.

K_e = Cost of Equity

In other words, the increase in debt ratio cause decline in overall cost of capital(K_o) and the decrease on K_o enhances the marked value of the firm or company i.e.

$$V = \frac{NOI}{K_o} = \frac{EBIT}{K_o}$$

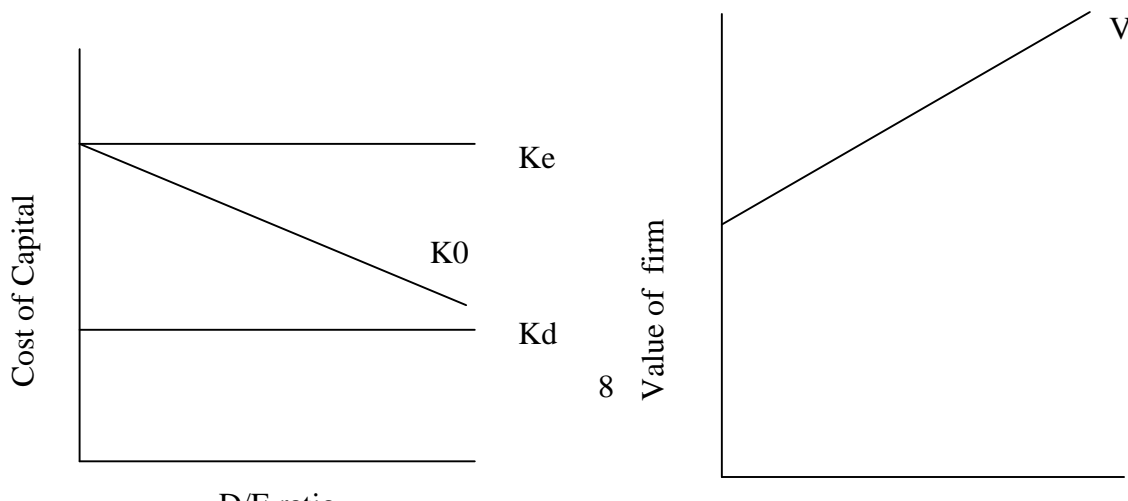
Where,

V = Market value of the company

NOI = Net operating Income

K_o = Overall cost of capital

Thus, a firm can maximize its market price of stock or value by achieving the optimal capital structure by making judicious mix of debt and equity. This theory or approach is graphically shown in the figures.



Where,

D/E = Debt Equity ratio

V = Value of firm

From the above figures, it is clear that cost of debt (K_d) and cost of equity (K_e) are constant but overall cost of capital (K_o) is declining as increasing level of debt, whereas the value of the firm is maximum with higher level of debt. Therefore the optimum capital structure would occur at the point where the value of firm is maximum and overall cost of capital is minimum. It will have the maximum value of the firm and lowest cost of capital when it is all debt financed or has much debt as possible.

b) Net operating Income (NOI) Approach

The NOI approach is also known as irrelevancy theory of capital structure because capital structure decision is irrelevant to the valuation of the firm. It implies that the total value of the firm is unaffected by its capital structure. According to this approach, The equity holders feel higher degree of risk and demand higher rate of return for higher debt equity ratio. In addition, the cost of equity increases with debt levels and higher cost of equity offsets the benefit of cheaper debt financing. There is no effect at all on overall capitalization rate of the firm. In other words, the overall cost of capital (K_o) as well as cost of debt (K_d) remain constant regardless of the degree of leverage. Therefore this approach argues that the capital structure decision of the firm is irrelevant. Any change in leverage in will not lead to any change in the total value of the firm. The NOI approach is based on the following assumptions (Pandey, 1993):

1.

Corporate taxes do not exist.

C

- | | | |
|----|--|---|
| 2. | Cost of debt remains constant. | C |
| 3. | Cost of equity increases with increase in debt use. | C |
| 4. | Overall cost of capital remains constant. | O |
| 5. | The market capitalizes the value of the company as a whole. Thus the split between debt and equity is not important. | T |

According to this approach, both the earning per share (EPS) and equity capitalization rate (Ke) increases on same proportion with the increasing debt ratio. So, market price of stock remains unchanged on any leverage,. The total market value of the company also remains unchanged, since as previously said that the net operating earnings as well as overall cost of capital do not vary with the leverage. The market value of the company is obtained as below:

$$V = \frac{NOI}{K_0}$$

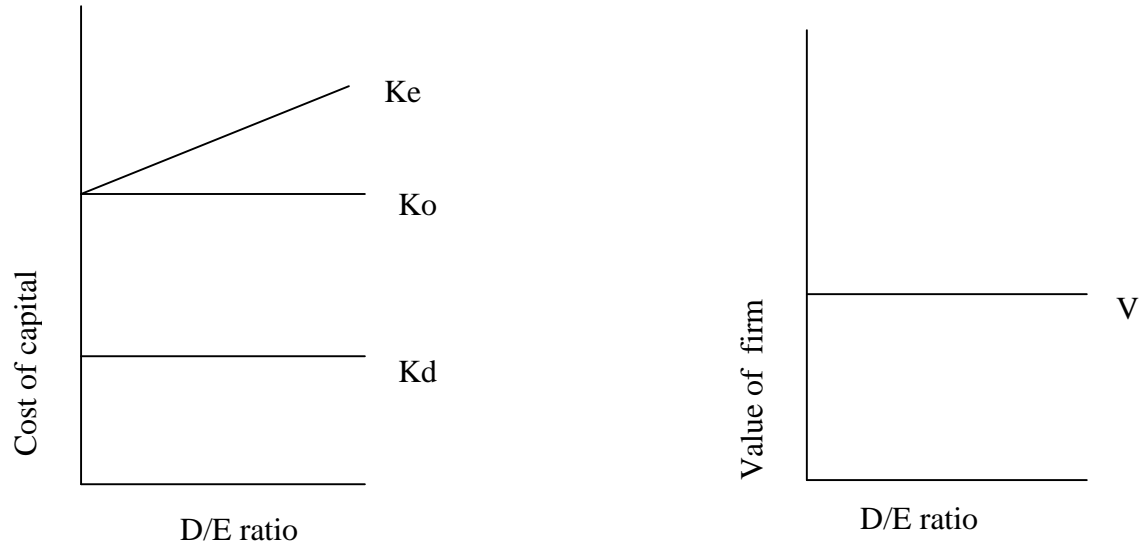
Where,

V = Value of the firm

NOI = Net operating income

Ko = Overall capitalization rate

The NOI approach is shown in figures below:



The above figures show that the cost of debt (K_d) and overall cost of capital (K_o) remain constant and the cost of equity (k_e) is increasing with higher level of debt use. A part from these, the value of firm (V) is also constant with leverage. “ At the extreme degree of financial leverage, hidden costs become very high and hence the firm’s cost of capital and its market value is not influenced by the use of additional cheaper debt fund” (Gitman and Pinchase, 1988). Thus, this approach suggests that there is no optimal capital structure.

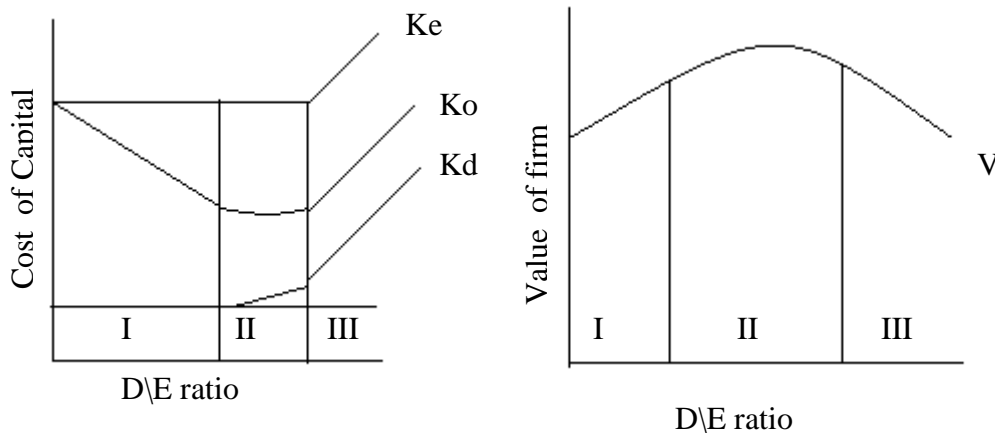
c) Traditional Approach

The traditional approach was developed by Ezra Solomon. It is also known as intermediate approach between Net Income (NI) approach and Net operating Income (NOI) approach. The traditional approach assumes that there exists an optimal capital structure and that a firm can increase its total value through the judicious use of leverage (Van Horn, 2000:). In other words, the value of the firm can be maximized or overall cost of capital can be minimized through proper mix of debt and equality capital. Due to the fact that (Van Horn, 2000). The debt increases the fixed obligation to the company and so increases the financial risk, the investors raise the required rate of return on equity (K_e).

The increase in cost of equity (K_e) does not offset entirely the benefits of using cheaper debt funds. Thus, overall cost of capital (K_o) decreases upto certain level of debt use and then after, It begins to increase. In other words the cost of equity increases at lower rate and cost of debt (K_d) remain constant up to certain level of debt use. At that time, the overall cost of capital is also minimized and the value of firm (V) is maximized. After that cost of equity (K_e), cost of debt (K_d) and overall cost of capital (K_o) increases rapidly and the value of firm will also decreases., The optimal capital structure exists at that point where overall cost of capital (K_o) is minimum and the value of firm (V) is maximum . The assumptions of this approach are as follows:

-) equity holders adjust their required rate of return proportionately for every unit of debt inclusion. E
-) debt holders do not really care for the level of debt inclusion and do not demand any premium for the leverage risk at least in the beginning. D
-) the expected outcome of the behavior of equity holders is the benefit of cheaper debt financing causes the cost of equity and debt, increases. T

According to this approach (Solomon, 1969:), the manner in which the overall cost of capital reacts to change in capital structure can be divided in to three stages.



Stage : I

The first stage traditional approach begins with the introduction of debt in the total capital. Initially (Pandey, 1981), the cost of equity (K_e) remains constant or rises slightly with the use of debt fund and it does not increase fast enough to offset the advantage of low cost debt. During this stage, the cost of debt (K_d) remains constant or rises negligibly since the market views the use of debt as a reasonable policy. As a result, the value of the firm (v) will increase or the overall capitalization rate (K_o) falls with increase in leverage. This implies that, within acceptable limit of debt, the average cost of capital will decline with leverage.

Stage : II

Once the firm has reached a certain degree of leverage, further application of debt have a negligible affect on the value of the firm or the overall cost of capital to the firm. This is because the increase in cost of equity offsets the advantage of low cost debt. Within the range of such debt level or at a specific point, the value of the firm will be maximum or the cost of capital will be minimum (Pandey, 1981).

Stage : III

Beyond the acceptable limit of leverage, the value of the firm decreases with leverage or the overall cost of capital increases with leverage. This happens because the cost of equity increases by more than enough to offset the advantage of low cost debt (Pandey, 1981).

The overall effect of these three stages suggests that the cost of capital and the value of the firm are the functions of leverage and there exists optimal capital structure.

2.1.2

Contemporary Theories

A comprehensive analysis of capital structure was revealed in 1958 when Franco Modigliani and Merton Miller (M-M) published an article on the issue of capital structure

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relevancy. The article is considered to be the most significant work in financial research ever published. The major aspects of their theory are discussed below:

a) Modigliani and Miller Theory (In the World Without Taxes)

Modigliani and Miller (M-M) support the relationship between leverage and cost of capital that explained by NOI approach. They argue that in the absence of taxes, total market value and cost of capital of the firm remain invariant to the capital structure change. “they make a formidable attack on the traditional position by offering behavioral justification for having the cost of capital (K_0) remains constant through out all degree of leverage” (Solomon, 1969). M-M contained that the cost of capital is equal to the capitalization rate of pure equity stream of income and the market value is ascertained by Capitalization rate of pure equity stream of income and the market value is ascertained by capitalizing its expected income at the appropriate discount rate for its risk class. The M-M cost of capital hypothesis can be best expressed in terms of their propositions 1 and 2. However the following assumptions regarding the behavior of the investors and capital market, the action of the firm and the tax environment are crucial for the validity of the M-M hypothesis.

-) Securities are traded in perfect capital market situations.
-) Firms can be grouped in the homogeneous risk class.
-) Dividend payout ratio is 100 percent.
-) Corporate income tax does not exist.
-) Investors have homogeneous expectations about expected future corporate earnings also the riskiness of there earnings.
-) The variance of return may differ from investor to investor.

Proposition I

The M-M proposition I states that the market value of a firm is independent of its capital structure. It is because the value of the firm is determined by capitalizing the net operating income (NOI or EBIT) at rate appropriate for the firms risk class accordingly; the value of firm is obtained by:

$$V = \frac{NOI}{K_0}$$

Where,

V= value of the firm

NOI = Net operating income

Ko =Risk adjusted capitalization rate

The M-M proposition I also implies that the weighted average cost of capital (Ko) to any firm (i.e. levered or unlevered) is completely independent of its capital structure and equal to the cost of equity (Ke) to an unlevered firm in the same risk class. Thus there is no relationship between the value of a firm and the way its capital structure is made up, nor there is any relationship between the average cost of capital and the capital structure, It is identical to the NOI approach.

Proposition II

The proposition II states that the cost of equity rises proportionately with the increase in the financial leverage in order to compensate in the form of premium for bearing additional risk arising from the increased leverage. In other words, for any firm (i.e. levered or unlevered) in a given risk class the cost of equity (Ke) is equal to the constant average cost of capital (Ko) plus a premium of financial risk which is equal to debt equity ratio times the spread between constant average cost of capital (Ko) plus a premium of financial risk which is equal to debt equity ratio times the spread between constant average cost of capital (Ko) and interest rate (Kd). It can be expressed as follows:

$$K_e = K_o + (K_o - K_d)D/E$$

Where,

Ke = cost of equity

Ko = Average cost of capital

Kd= Cost of debt or interest rate

D/E =Debt Equity ratio

The validity of proposition II depends up on the assumptions that Kd will not increase for any degree of leverage but in practice Kd increases with leverage beyond a certain

acceptable level. However, M-M mention that even if K_d is functions of leverage, K_o will remain constant, as K_e will increase at a decreasing rate of compensate (Pandey, 1981:). Thus, taking both the propositions I and II together, the M-M theory in the absence of taxes contends that the over all cost of capital as well as the value of the firms are independent of capital structure. The theory in a tax free world is identical to the NOI approach. In other worlds, the value of levered firm (V_L) is equal to the value of an unlevered firm (V_U) in the same risk class i.e. $V_L = V_U$ (Pradhan, 1992).

b) M-M Theory (In the world with Taxes)

At first, M-M assume that the corporate tax do not exist and said that cost of capital and the value of firm are independent to the capital structure decision. This assumption was not valid. In reality, there exist corporate taxes and interest on debt is deductible for the purpose of the tax calculation. It means the after tax net income increased by the amount of tax benefit resulting in an increase in the value of firm by the same amount. It can also be shown in the proposition I and II.

Proposition I

As per proposition I, the value of a firm is determined by capitalizing the net operating income before tax at a rate that is appropriate to its risk class. Where tax is considered, Interest payment on debt makes a tax saving since interest is deducted from net income for the tax calculation. Thus the value of levered firm will be more by the present value of debt tax shield than that of unlevered firm. In other words, the value of levered firm is equal to the value of unlevered firm plus present value of debt tax shield. This can be shown in equation.

$$V_L = V_U + TB$$

Where,

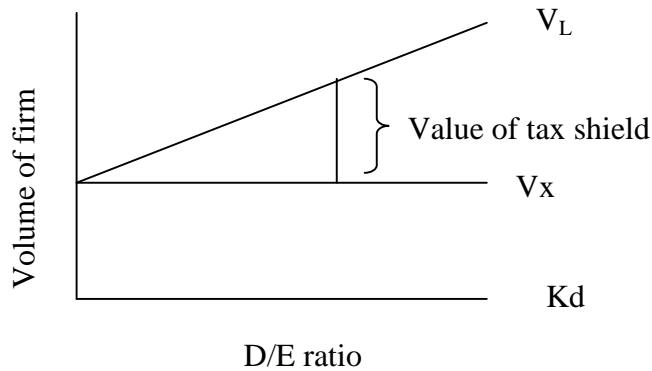
V_L = Value of levered firm.

V_U = Value of unlevered firm.

T = Tax rate

B =Amount of debt

Thus, M-M proposition I with taxes indicates that $V_L > V_U$ and suggests that a firm's value rises continuously as it moves from zero debt to 100% debt. It can also be presented through the figure below.



Proposition II

“The M-M proposition II states that the cost of equity of levered firm (K_{eL}) rises with leverage ratio to compensate for the additional leverage risk while the cost of debt remains constant because the debt is assumed to be risk less “ (Pradhan, 1992). Accordingly the cost of equity is calculated as follows:

$$K_{eL} = K_{eU} + (K_{eU} - K_d) (1-t) D/E$$

Where,

K_{eL} = Cost of equity of levered firm.

K_{eU} = Cost of equity of unlevered firm.

K_d = Cost of debt

T = Tax rate

D/E = Debt equity ratio

It indicates that the cost of equity increases with D/E ratio. On the other hand, the tax deductibility of interest on debt lowers the cost of debt but still remains constant irrespective of debt equity ratio. This reduction in the cost of debt as result of tax saving outweighs the increased cost of equity, forcing the average cost of capital (K_o) to decline with every unit of additional debt financing. As a result, the weighted average cost of capital of the firm does not remain unchanged when there is a change in D/E ratio. This can be seen from below equation.

$$K_{oL} = K_{eL} (E/V) + K_d (1-t) D/E$$

Where,

K_{OL} = Overall cost of capital of levered firm.

K_{eL} = Cost of equity of levered firm.

E = Equity amount

V = Total value

T = Tax rate

D/E =Debt equity ratio

From the above equation it is clear that the cost of equity increases with D|E ratio, the average cost of capital decreases continuously until it reaches to the level of cost of debt at 100% debt financing.

Thus it can be concluded that the M-M theory with taxes is identical to NI approach, which says that the value of firms increases with every additional unit of debt financing. As such, the theory suggests that it is always better to have maximum debt financing.

“Whether or not, the capital structure of any firm affects its value?” This is the matter of controversy which was begun in the late 1950’s and there is as yet no perfect solution. Different scholars have been expressed different views in respect to the topic. So, this section is devoted to review of some books which are related to the topic.

According to western and Brigham, capital structure is the permanent financing of the firm, representing primarily by long term debt, preferred stock and common stock, but excluding all short term credit (Weston and Brigham, 1981). Thus a firm’s capital structure is only a part of its financial structure. The capital structure of the firm, defined as the mix of financial instruments used to finance the firm, is simplified to include only long term interest bearing debt and common stock, excluding short term liabilities.

The value of a firm depends upon its expected earning streams and the rate used to discount this stream. The rate used to discount the earning stream is the required rate of

return or cost of capital (Pandey, 1993). Thus, the capital structure decision can affect the value of the firm either by changing the expected earnings or the cost of capital or both.” In the opinion of Bolton and Conn as the proportion of debt in the capital structure increases, both the cost of equity and the cost of debt begin to rise, reflecting the increased financial risk but the two do not necessarily rise in the same proportion (Bolton and Conn, 1981). Thus with the increasing use of debt, the overall cost of capital begins to fall because the after tax cost of debt is typically cheaper than the cost of equity. After a point, while the financial markets consider to the signs of excessive use of debt and too much financial risk, completely offsets the advantage of using the lowers cost of debt. So they agree with the statement that the Judicious mix of long term debt and equity can lower the total cost of capital for the company, resulting in higher profits and stock price.

The cost of debt is less than that of equity but it increases the probability of financial distress. Thus, and effect of leverage depends very much on the relationship between the firm’s ability to earn and its rate of return on assets and interest cost of debt. They conclude that the judicious use of debt enhances expected return and as well as the value of the firm (Solomon and Prinjal, 1978).

Optimal capital structure can be defined as that mix of debt and equity which will maximize the market value of the company (Solomon,1963). If such an optimum does exist it is two fold. It maximize the value of company and hence the wealth of it’s owners: it minimizes the company’s cost of capital which in turn increases its ability to find new wealth creation investment opportunities.

2.2 Review of Empirical Studies

There are numerous studies carried out on capital structure. So, it is out of the scope of this study to empirical studies. Therefore, some important and related studies are reviewed in this section.

2.2.1 Review of Foreign Studies

Literature Related to Testing the MM Hypothesis

In their article, MM showed that, given a company's investment policy, and not taking taxes and transaction costs into account, the choice of financial policy does not affect the current market value of the company that means in an idealized world without taxes, the value of a firm is independent of the debt equity mix. In order to prove their first and second irrelevance proposition. They have used the data of 43 large electric utility and 42 oil companies that has been used by previous researches Allen (1954) and Smith (1958). MM proved the first proposition i.e. market value of any firm is independent to its capital structure and is given by capitalizing its expected return at the rate of appropriate to the risk class and the second proposition i.e. the expected rate of return on stock of any company belonging to the same class is linear function of leverage.

There are some studies related with the testing MM hypothesis. In 1958, MM studied about MM independent hypothesis. His major finding was acceptance of MM hypothesis. Donaldson(1961) studied about debt capacity theory. He found that the financing hierarchy similar to pecking order. Barges (1963) tested MM hypothesis. His conclusion was rejection of MM hypothesis. Weston also tested the MM hypothesis in 1963, his conclusion was also the rejection of Mm hypothesis. MM focused on the study of test of tax advantage on leverage in1963, he accepted the tax advantage on leverage. Wippen (1966) tested the capital structure theory. At last he accepted traditional theory of capital structure. In 1969, Gupta carried out his study on test of effects of size, growth and industry classification on financial structure. He found that there is significant effect of size and industry classification and insignificant effect of growth. Peterson (1969) tested the relationship between business risks and capital structure. His conclusion was that capital structure varies with the business risks. Sharma and Rao tested MM hypothesis in1969, his major finding was rejection of MM hypothesis. Hamada (1972) tested MM hypothesis he accepted the MM hypothesis. In 1980 Flath and Knoeber tested MM hypothesis at last he found the rejection of MM hypothesis.

However, their studies have been criticized on many grounds. The unrealistic assumption was criticized much. Beside, the selection of firms i.e. Oils companies and electric utilities display diverse characteristics which violate the assumption of same risk class

required by both assumptions. The biasness toward irrelevance proposition by use of same denominator in both dependent and independent variables has also been pointed out by Barges (1963). Further biasness may also occur from the exclusion of other variables in their regression model in their study. Aftermath the study of MM (1958), many researches concentrated on testing the MM's proposition the results of which supported or rejected the MM proposition. The inclusion and recognition of other industrial and firm characteristics in the capital structure decision was seen in other successive researches. MM (1963) corrected their original proposition. Their second study tested the effect of leverage and other variables on the cost of capital by taking sample of 63 electric companies for the year 1954 1957 and 1956. With relaxation of assumption of no tax world, they recognized that the value of firm and its cost of capital would increase and decrease with the leverage, due to the tax deductibility of the interest charges.

2.2.2 Review of Related Literature during 1960s and 1970s

Donaldson (1961) conducted a study of the debt capacity by selecting 25 selected American manufacturing companies from the industries: (1) Machine Tools, (2) Baking and biscuits, (3) Rubber, (4) Chemical, and (5) Drugs. His study drew the conclusion on financing behavior of the firm that is more valid in the real world situation. According to his conclusion firms prefer financing through internally generated funds first. Myers (1984) theory of pecking order has its root to Donaldson's conclusion. The implication of the Donaldson's finding is that profitability, dividend, investment plan, the capital market conditions, and structure of firm's asset affect the capital structure of the firm which is against the MM proposition. A study devoted to test the relationship between business risks and the capital structure in the manufacturing firms was conducted by Peterson (1969). Based on the data of 1947-56, the study found that the capital structure, as measured by the ratio of senior to junior capital at book value, then by ratio of senior to junior capital at market value and finally by ratio of fixed charges to earning power, directly varies with the risks, as measured by the coefficient of variation of the rate of return on total capital. Gupta in 1969 conducted a cross sectional study of American manufacturing companies for the period 1961-1962. His study found significant effect of industrial class and firm size on the financial structure of the manufacturing companies

and no significant effect of growth variable on leverage. Most of the studies have examined the effect of various industrial and firm characteristics on the capital structure. The studies carried out during the 1970s concentrated on cross sectional characteristics of individual firm and characteristics of firms as fundamental determinants of financial structure. The variables used as determinants of the capital structure with their hypothesized and observed signs are presented in the table 2.1

Table 2.1
Fundamental Factors Affecting Capital Structure Design

Factors	Hypothesized signs	Observed signs
Growth	+	+
Profitability	±	-
Firm size	+	+
Earning volatility	-	±
Bankruptcy costs	-	-
Market power	+	-

Adapted: Martin (1988) the theory of finance Evidence and Application

The table 2.2 clearly indicates that there exists no agreement between theoretical and empirical results of some of the variables since hypothesized signs of some variables do not agree with the empirically observed results. More empirical studies that focused on examining the various determinants of capital structure during the 1960s and 1970s and their major findings are presented in the table 2.2.

Table 2.2
Empirical Studies and Their Findings Regarding the Determinants of the
Capital Structure

Studies	Determinants	Findings
Gupta(1969)	Size, growth and Industrial Classification	Significant effect of size and industry classification and insignificant effect of growth
Peterson(1969)	Business risks	Capital structure varies with the Business risks
Scott(1972)	Industrial influence	Found to be significant
Toy, et al. (1974)	Earning rates, growth Rate and earning risks	Found to be important Determinants of capital Structure in industrial countries
Taub (1975)	Size, business risks, Taxes and solvency	Found to important Determinants of capital structure
Remmers, et al.(1974)	Industrial influence	No industrial influence in the USA, Norway, Netherlands But significant influence in the France and Japan
Belkaoui(1975)	Industrial influence	Found to be insignificant
Scott and Martin (1975)	Industrial influence	Found to be insignificant
Carleton and Silberman (1977)	Rate of return	Negative relations between Earning variance and leverage
Ferri and Jones (1979)	Industrial class, size, Earning variability, Operating leverage	Existence of relationship Between industrial class, size , Earning variability, operating Leverage and the capital structure

This empirical evidence on the determinants of capital structure decision has generated contradictions in the theory of capital structures. For examples, Remmers, Stonehill, Wright and Beckhisen (1974) shows insignificant industrial influence on the capital structure in the United states , Norway, and Netherlands whereas they find significant industrial influence on the capital structure in France and Japan. Insignificant industrial influence on the leverage was also observed by Belkauoi (1974). In his study of 155 firms from 13 industries for the period 1968-1973, he concluded that debt ratio does not vary significantly by industries. Conversely, Scott (1972) and Scott and Martin (1975) provided evidence on support of significant industrial influence on the capital structure.

The similar disagreement can be observed in case of the profitability, size, earning variability or risks, and others as the determinants of capital structure.

According to the pecking order theory (Myers, 1984), the profitability is expected to be negatively related to capital structure level since the internally generated funds serves as the sources of capital for profitable firms. As opposed to pecking order theory, profitability may also be negatively related to capital structure since profitable and growing firms need more capital to exploit the opportunities. Accordingly studies have also provided the mix evidences. Toy, Stonehill, Remmers, Wright and Beekhuisen (1974) finds negative and significant relationship between capital structure and profitability in Norway, USA, Netherlands and Japan, and Negative and insignificant in France. The negative relations observed in the study in these five countries support the pecking order hypothesis. The similar result has been found by Carleton and Silberman (1977) in their study of 705 US companies of 81 industries.

Firm size has been studied as one of the fundamental determinants of the capital structure. Theoretically larger firms said to have easier access to financial markets and have high collateral value of the assets which allows such firms to borrow more compared to the smaller firms. Therefore, the theoretically positive relation is expected between capital structure and the firm size. Consistent with the theoretical expectation, Taub (1975) provided evidence of positive relationship between the leverage and the capital structure implying that large firm employs more debt in their capital. Contrary to the theoretical relation, Gupta (1969) found negative and insignificant relationship between the sizes of the firm leverage in terms of debt to total assets. This theoretical relation was also observed insignificant in the study of Remmers et al. (1974). It indicates that there is no consensus in the studies regarding relationship of leverage and size of firms.

The negative relationship between the earning variability and capital structure has also been theorized on logic that increase in leverage increases the probability of bankruptcy and high volatility of earnings increases the uncertainty in meeting its obligations. But the empirical studies have shown the contradictory results. Peterson (1969) has shown the

positive relation of leverage and business risks. Toy et al. (1974) finds positive and highly significant relation between risks and leverage in case of Norway, Japan and US and positive but insignificant relation in case of Netherlands. However, consistent with the theory, the studies of Taub (1975) and Carleton and Silberman (1974) found negative relation between risks and leverage. Such contradiction among the different researchers some showing positive and some showing negative relationship between risks and leverage have left this theory inconclusive. Besides, there exist contradictions on the findings of other studies as to how these variables are related to capital structure.

2.2.3 Review of Related Literature during 1980s and 1990s

The contradictions in the results are even stronger in the empirical studies conducted during the 1980s and 1990s. The many of the empirical research during this 1980s were conducted under agency costs theory of Jensen and Meckling (1976), the incentive signaling approach of Ross (1977) and Lyland and Pyle framework. Beside, the studies have also been carried out to examine the various determinants of capital structure at the same time. The results of the studies presented in the table shows the contradictions regarding the direction of the relationship between determinants of capital structure and capital structure of the firm.

The empirical researches presented in the table 2.2.4 contradict to each other except in the relationship established between fixed assets and leverage. The positive relationship between firm size and capital structure was found by Marsh (1983), Friend and Lang (1988), and Friend and Hasbrouck (1988) while negative relationship was found by Kester (1986), Kim and Soren (1986) and Titman Wessels (1988). Friends and Lang (1988) examined the determinants of capital structure of 984 sample US firms for the periods 1974-1983. Likewise, a study devoted to examine the capital structure determinant of sample of 1470 US Non financial and non utility firms for the year 1983, was carried out by Friend and Hasbrouck in 1988. Similar disagreement in case of relationship of growth opportunities with leverage was observed by the studies. Auerbach (1985) and Kester (1986) and Titman and Wessels (1988) find negative relationship between growth opportunities and leverage.

Table 2.3
Capital Structure Determinants Examined during 1980s

	Size	Grow	Prof	Ndts	Vol	FA	R&D	Uni	AEx
Marsh(1982)	+					+			
Bradley,et al.(1984)				+	-		-		-
Long and Maliz(1985)			+			+	-		-
Auerbach(1985)		+		+	+				
Kester (1986)	-	+	-		-				
Kim and Soren(1986)	-	-		-	+				
Titman and Wessels(1988)	-	-	-	-	-	+		-	
Wedig,et al.(1988)				-	-	+			
Friend and Lang (1988)	+		-		-	+			
Gonedes, et al(1988)			-			+			
Friend and Hasbuouck (1988)	+		-		-	+			

- Grow : Growth Opportunities
- Prof : Profitability
- Ndts : Non Debt Tax Shield
- Vol : Volatility
- FA : Fixed Assets
- R&D : Research and Development
- Uni : Uniqueness
- AEx : Advertising Expenses

The relation with of profitability with leverage is controversial. Pecking order theory contends negative relation while the trade of theory contends the positive relation of profitability with leverage. Supporting the pecking order theory, these studies seem to have general agreement on the relationship between profitability and leverage

(Kester,1986; Titman & Wessels,1988; Friend &Lang, 1988; Gonedes, Lang, & Chinkoanda (1988); and Friend &Hasbrouck, 1988). DeAngelo and Masulis (1980) developed the developed a model of optimal capital structure which incorporated the impact of corporate and personal tax; and the non debt related tax shields. They argue that firms can use other non interest item such as depreciation, tax credit and pension fund to reduce corporate tax payments. These are the substitutes for the tax benefits of debt financing. Therefore, firms that have higher non debt tax shields are likely to use less debt. In support of the arguments of DeAngelo and Masulis (1980), the studies of Kim and Soren (1986), Titman and wessels (1988) and wedig et al. (1988) find negative relations of non debt tax shield with leverage. However, the findings of Bradley et al. (1984) and Aubach 1985) did not support this argument. Therefore the empirical findings are mixed regarding the effect of non debt tax shield on capital structure. Since the firms with volatile earning are regarded as riskier, it is argued that the firms with high earning volatility should not be highly levered as they tend to default its obligations. As a result, the negative relationship between the earning variability and capital structure may be expected. This logic has been supported by the findings of Bradley et al. (1984), Kester (1986), Titman and wessels (1988), Friend and Lang and Friend and Hasbrouck (1984), Kester (1986), Titman and wessels (1988). But, the results of the Aubach (!985) and Kim and Soren (1986) contradict with this logic. Marsh (1983) found the negative effect of bankruptcy probability on the capital structure indicating the firms with higher bankruptcy possibilities to have lesser amount of debt in their capital. Bradley, et al. (1984) and Long and Maliz (1985) have found research and development expenditure; and advertising expenditure to be negatively related with the capital structure. Similarly Titman and Wessels (1988) has found the uniqueness of the firm's product to be negatively related to the capital structure. The number of empirical studies conducted during the decades of 1990s has also examined the traditional firm and industry related characteristics as determinants of capital structure. Most of these studies were based on the agency costs, information asymmetry and corporate control theory of capital structure. The summary of studies which has focused on examining the determinants of capital structure during this period is presented in the table 2.4

Table 2.4
Capital Structure Determinants Examined in Studies of 1990s

	SZ	GR	PR	ND	VL	FA	LI
Chang and Rhee(1990)		+	-	+	+		
Chaplinsky and Niehaus (1990)	-	-		+			
Kale et al. (1991)	-	-		-	+		
Thies and Klock (1992)		+	-		-	+	
Jensen et al (1992)			-	-	-	+	
Chairella et al. (1992)	+	+	-	-		ns	Ns
Dawns (1993)	+	+	-	+	-	+	
Lowe et al. (1994)	+	-	+		+	+	-
Chatrath(1994)	-	+					?
Chawdhury et al. (1994)	+		+				
Barclay et al. (1995)	-	-					
Rajan and Zingales (1995)	+	-	-			+	
Hussain (1995)	+		+		-		
Chehab(1995)		+	-		-	+	
Shenoy and Koch (1996)	+			-	+	ns	-
Munro (1996)	-	-					
Cornelli et al. (1996)	+		-			-	
Berger et al. (1997)	+		-				
Jordan et al. (1998)	+	+	+		+	+	-
Barclay and Smith (1999)	+		-				
Michael et al. (1999)		-	-				
Hirota (1999)	+	-	-	-	-	+	

- SZ : Size of the Firm,
GR : Growth Opportunities,
PR : Profitability,
ND : Non Debt Tax Shield,
VL : Risk of the Firm Represented by Earning Volatility,
FA : Fixed Assets to Total Asset also known as Asset Tangibility,
IO : Investment Opportunities,
ns : Not Significant,
? : Indeterminate Relationship

The empirical studies presented in the table 2.2.5 are based on the data of different observations, periods and countries. For example, Chatrath (1994) used the data of sample of 151 US non financial firms covering the period of 1973-1990 while Chehab (1995) analyzed the data of 304 US firms for the period 1978-1991 to examine the determinants of capital structure. The study conducted by Jordan et al. (1998) analyzed the samples of 275 UK Firms covering 10 Year period of 1983-1993. Lowe, Naughton and Taylor (1994) in their study selected the samples of 176 Australisan firms for the period 1984-1988. Similarly, the study conducted by Hussain (1995) is based on the sample of 179 Indonesian firms for the period 1988-1993 while the study by Hirota (1999) is based on the sample of 407 and 506 Japanese firms in four cross section years 1977, 1982, 1987 and 1992. Hirota seeks to explain the determinants of leverage by combination of firm characteristics and institutional variables. The differences in the sample taken, period covered and countries selected could have caused the variations in the findings of these studies.

Rajan and Zingales (1995) carried out a comparative study of G-7 countries capital structure determinants in. In an attempt to find out whether capital structure in other countries related to the factors similar to those appear to influence the capital structure of US firms, Rajan and Zingales (1995) investigated on the determinants of capital structure choice by analyzing the financing decision of public firms in the G-7 countries. For the study, they used the database of Global Vantage for the year 1987-1991 Focusing on the largest economies where there are sufficient firms to make comparison meaningful. The firms selected for the study were non financial firms of the G-7 countries. They found that the factors identified by previous studies as correlated in the cross section with firm leverage in the United States, are similarly correlated in other countries as well. However, despite the findings of similarity in leverage across the G-7 countries, researchers are skeptic about the findings and suggest for the further researches in this area.

The specific firm characteristics that have been found to influence capital structure included the asset tangibility, size of the firm, its profitability, growth, risk, amount of

non –debt tax shields, and liquidity position of the firm. The determinants of capital structure examined by the number of empirical studies during 1990s clearly portray inconsistencies in the empirical results. For example, in an attempt to establish relationship between firm size and leverage, Chaplinsky and Niehaus (1990), Chatrath (1994), Munro (1996) and Barclay, Smith and watts (1995) find negative while Dawns (1993), Rajan and zingales (1995), Hussain (1995), among others, find positive relationship between these two variables.

The studies provide contradictory evidences regarding the growth influence on the capital structure. Chang and Rhee (1990), Thies and Klock (1992), Chiarella, Pham, Sim and Tan, (1992), Dawns (1994), Chatrath (1994) and others concluded that growth variable is positively related to the firm's leverage whereas Chaplinsky and Niehaus (1990), Lowe et al. (1994), Rajan and Zingales (1995), and Michael, Chittenden, and Poutziouris, (1999) and other concluded that growth variable is negatively related to the leverage. The similar disagreement has also been found on the influence of profitability on capital structure. Supporting the pecking order hypothesis, the negative relationship between profitability and leverage as been reported by Rajan and Zingales (1995), Barclay and smith (1999) Michael et al. (1999), Hirota (1999) and others. The studies of Lowe et al. (1994), Chowdhury, Green and Miles (1994), Hussain (1995) and Jordan, Lowe and Taylor (1998), reported the positive relationship between the profitability and leverage.

In support of the hypothesis of DeAngelo and Masulis (1980), the studies of Kale, Noe, and Ramirez (1991), Jensen, Solberg and Zorn (1992), Chairella et al. (1992), Shenoy and Koch (1996), and Hirota (1999) found negative relationship between non debt tax shield and leverage while the opposite evidences have been provided by Chaplinsky and Niehaus (1990), Chan and Rhee(1990)and Dawns (1993).The risk variable, as represented by the Volatility of earnings of the firm. Influence on capital structure has also been contradictory. Some of the evidences reported that higher the risk or earning volatility higher is the debt ratio of the firm (Chang &Rhee, 1990; Lowe et al.,1994; Jordan et al.,1998; & Kale et al., 1998). Conversely, the studies provided the evidences

that leverage decreases as the risk or the earning volatility increases (Thies & Klock, 1992; Jensen et al., 1992; Dawns, 1994; Chehab, 1995; & Hirota, 1999).

The effect of fixed asset (the asset tangibility) on the capital structure is found to be positive by numbers of studies (Thies & Klock, 1990; Jensen, 1992; Dawns, 1993; Lowe et al., 1994; Rajan & Zingels, 1995; Jordan et al., 1998; & Hirota, 1999). It seems that there is an agreement among studies on the positive influence of asset tangibility on the leverage, except the study of Cornelli, Portes and Schaffer (1996). This kind of agreement has also been observed in the empirical studies summarized in the table 2.2.4. Such agreement seems to support the trade of theory, which claims higher asset tangibility (asset collateral) increases the level of debt. According to the trade off theory, the tangible asset act as collateral and provide security to lenders in the event of financial distress. The collaterality also protects lenders from moral Hazard problem caused by the shareholders-lenders conflict (Jensen & Mekling, 1988). Contrary to the evidences of positive relationship between fixed asset and leverage, the relationship between liquidity and leverage may be expected to be negatively related. In this light, the studies, (Lowe et al., 1994; Shenoy & Koch, 1996; & Jordan et al., 1998) found negative relation of liquidity with the leverage. This relationship was found not significant by Chairella et al. (1992) while indeterminate by Chatrath (1994).

The empirical literatures on capital structure have remained divided on the issue of determinants of capital structure during 1980s and 1990s also. No consensus can be found among the studies as to what really the determinants of capital structure are and how the capital structure of a firm is affected by them.

2.2.4 Review of Recent Empirical Works

In addition to the above studies, there has been considerable number of empirical studies undertaken in recent year, which examined traditional capital structure determinants. The summary of those studies, their sample size and period covered, and factors determines the capital structure in Indian firms. Those studies have been able to explore to some

extent into some of the traditional firm related characteristics as determinants of capital structure.

2.3 Review of Nepalese Studies

In Nepalese context, the empirical research on capital structure issues has not been undertaken with the view to analyze the determinants of capital structure and decision regarding capital structure.

Shrestha (1983 & 1985) focused on analyzing the financing issues of public enterprises on Nepal. These studies basically involved in analyzing the trends of capital structure in Nepalese Public enterprises. Baral (1989) Explored the trends of capital structure in large Nepalese private companies. These studies conducted before liberalization period has remained mainly focused on the descriptive part of capital structure in limited number of public enterprises and some private companies. Later, K.C. (1994), Paudel (1994), and Baral (1996) conducted study on capital structure of Nepalese firms, which to some extent examined the variables affecting capital structure in Nepalese context. A study by Pradhan (2003) to analyze the financial management practices among various firms in Nepal, attempted to highlight the financing behavior and practices by Nepalese firms. His study has exposed some insights into debt financing practices to some extent. His findings are –working capital management is the most important finance function followed by planning long term financing needs; bank is the major source of finance followed by retained earning source; the short term loan of less than one year and one to five year loan is most used and preferred; the most preferred source of finance at current level of debt is retained earning; retained earning and stock issues is more preferred at higher level of debt with low preference to bank loan; and there is definite preferences for bank financing at lower level of debt. K.C. (1994) undertook a case study on the financing of corporate growth in Nepal. Based on the data of 37 companies, his study found growth, age and tangible asset of firm to be positively related to the long term debt. Similarly, study of 15 Nepalese Listed companies and 20 public enterprises covering 10-year period from 1982/83 to 1991/92 (Paudel, 1994) also tried to examine the effects of

company characteristics size, profitability, growth, collateral value, and variability of earning on the corporate capital structure. His study concluded that size, profitability, growth, collateral value, and variability of earning have negative influence on capital structure in Nepalese listed companies. His conclusion regarding the impact of these variables on capital structure of Nepalese public enterprises is that size and growth variables have positive impact while risk, profitability, and collateral value have negative impact. Regarding the significance, he found that growth , risk and profitability have no significant effect on capital structure of both type of companies. Similarly, the collateral value has significant effect on capital structure of both samples and size has significant effect on capital structure of public enterprise while it does not have in case of listed companies.

A study entitled “capital structure and cost of capital in public sector enterprises” (Baral, 1996) was based on the 26 public enterprises as the total sample. The sample was divided into three industry group viz. manufacturing, trading and financial institutions that covered 12 year period (from 1080/81 to 1991/92). The purpose of this study was to find out the trends and determinants of capital structure in Nepalese Public enterprises, among others. The study found size, growth, profitability, non debt tax shield, debt servicing capacity, and cash flow positively related to the capital structure in the Nepalese public manufacturing and trading enterprises. However, the relationship between these variables and the capital structure are found to be insignificant in all cases except profitability and debt servicing capacity, which are found significant for trading enterprises. In the study, the researcher with such observation concluded that the capital structure of Nepalese Public enterprises is not determined by these empirical determinants rather by the deliberate government decisions. This study remained focused on analysis of the capital structure of public enterprises only. The determinants of capital structure examined in the Nepalese context (paudel, 1994 and Baral,1996) have been presented in tabular form in the table 2.5

Table 2.5
The Capital Structure and Its Determinants in the Nepalese Context

Variables	Paudel(1994)		Baral (1996)
	Listed companies	Public companies	Public companies
Size	-ve ^b	+ve ^a	+ve ^c
Growth	-ve ^b	+ve ^b	+ve ^c
Risk	-ve ^b	-ve ^b	
Profitability	-ve ^b	-ve ^b	+ve ^{c,d}
collateral value	-ve ^a	-ve ^a	
Nondebt tax shield			+ve ^c
Debt service capacity			+ve ^{c,d}
Cash flow			+ve ^{c,d}
a.			in
indicates statistically significant at 1%			
b.			in
indicates statistically significant at 1%			
c.			in
indicates statistically significant at 5%			
d.			in
indicates statistically significant at 5% for trading enterprises.			

(Source: Sherpa, 2007)

Most of these studies in Nepalese context are based on the data of only preliberalization period during which Nepalese corporate sector was state owned dominated. Before 1991, the Nepalese listed corporate sector did not experience growth both in number and size. However, the development in stock exchange regulation and mechanism after 1991 created a favorable industrial environment which caused the increased number of listed companies a stock exchange. These listed companies started operation with new management and environment, causing new scenario in the Nepalese corporate sector. Due to the liberalization and privatization, many of the government enterprises were privatized since then. Many corporate sectors emerged and listed their shares at Nepal stock Exchange (NEPSE). In this scenario, these studies based on the data of preliberalization period and mostly of public enterprises, may not give the true picture of capital structure and its determinants in the Nepalese context. Therefore, the present

study examines the likely determinants of capital structure in the Nepalese manufacturing listed firms.

Sherpa (2007) had conducted an empirical study on “*Corporate Capital Structure and Its Determinants: A Case Study of Nepal*”. He took 29 manufacturing and non manufacturing companies of Nepal for the study purpose. His study was focused on conceptual base, capital structure pattern and its determinants. His study is basically focused on providing the conceptual base, analyzing capital structure and its determinants and finally he had suggested maintaining balance between long term debt and short term debt to maximize value and minimize risk. He had suggested employing more long term debt by a company which have a lot of fixed asset. He had also suggested that larger size firms should increase long term debt, which may result to optimal debt ratio for firm value. He had recommended that Nepalese corporate executives should be given some training on strategic capital structure management. On the basis of survey, he found that most of the CEOs of public enterprises don’t have the knowledge of optimal capital structure.

To conduct his study he had used descriptive and inferential statistics. The correlations among the variables have been examined by deriving the Pearson’s correlation matrix. The study has estimated OLS regression equation to show how firms characteristics VIZ size, growth, Profitability, Volatility, or the risks, asset collateral, non debt tax shield and liquidity cause firm’s capital structure level to vary. He had concluded that the Nepalese non financial listed firms on an average had used highest total debt in their capital structure. Manufacturing industry had more debt than the hotels and trading industry. Nepalese firms having more liquidity had used the less debt of all kinds in their capital structure. In Nepalese context, top executives are the main decision maker to decide about capital structure. He concluded the Nepalese executives recognized the financial flexibility, sufficiency of internal funds, and earnings and cash flow volatility as major debt financing factors with firm’s size changes, credit rating, tax rate, industry debt level as moderate debt factors and also the macro variable such as political instability, interest

rate changes, capital market and national economic performance are considered as debt factors.

CHAPTER - III

RESEARCH METHODOLOGY

This study is devoted to the examination of the determinants of capital structure in Nepalese non financial listed firms. The research methodology followed for study purpose has been presented under this chapter, which aims at answering the research questions raised and accomplishing the research objectives set in the first chapter. The term research methodology refers to the various sequential steps to be adopted by researcher in studying a problem with certain objectives in a view. It describes the methods and process applied in the entire aspect of study (Kothari, 1994). The Chapter has been divided into two sections. First section presents the research design, the nature and sources of data employed for the study, and selection of firms for this study. The second section discusses on the method of data analysis. It deals with multi variants tools of data analysis. Presented in this section are also the priori hypothesis of the study and the measurement of the variables.

3.1 Research Design

This study is designed to describe and analyze capital structure policy using the pooled cross sectional data of the Nepalese listed non financial firms and opinion of the Nepalese corporate executives. In order to gain general insight, the exploration into the capital structure issues has been made by reviewing the capital structure theories, pertinent literature and the secondary data. The study employs descriptive design that is intended in describing general pattern of the capital structure. Beside, examination of the correlation of the variables has also been made in the current study. Further in order to examine the determinants of the capital structure, the multiple linear regression analysis has been employed on the sample data that investigates the cause and effect relation between dependent and independent variables published annual reports of the selected listed non financial firms and the reports compiled by the securities board of Nepal are used for extracting the data needed for each variable under consideration.

3.2 Nature and Sources of Data

This study employed secondary sources of data in order to study the determinants of capital structure. Mainly the published corporate annual reports and complied reports of SEBO|N are used as sources of secondary data. Data utilized for estimating the regression model constituted 40 pools cross sectional observations from eight different non financial listed firms for different time periods. These data are also collected from annual reports of respective companies, websites, previous research studies, dissertations, articles and so on.

3.3 Selection of Firms

Few criterions have been employed in selecting the sample firms for this study. The first criterion in selecting the sample was based on the use of debt capital. Generally the financial firms such as banks, finance companies and insurance companies do not usually employ debt in their capital structure. So the analysis of the debt in such firms may not be worthwhile.

Sample firms were from manufacturing and non manufacturing. The mandatory financial information disclosure in the form of annual report and | or disclosure to SEBO|N were considered as the second criteria for selecting the firms. The company which did not submit the annual reports to SEBO|N or published the annual reports. Because of this reason I have selected 8 companies. The sample firms and the respective pooled cross sectional observation with years cross sectional observation with years covered are present in table 3.1

Table 3.1
Selection of sample firms

	SN	Company name	Years	Study period
Manufacturing	1	Bottlers Nepal ltd	2061-2065	5
	2	Khadhya udhyog ltd	2061-2065	5
	3	Nepal lube oil ltd	2061-2065	5
	4	Nepal Banaspati ghee udhyog ltd	2061-2065	5
	5	Unilever Nepal ltd	2061-2065	5
Non manufacturing	1	Soaltee hotel ltd	2061-2065	5
	2	Oriental hotels ltd	2061-2065	5
	3	Tara Gaon reGENCY ltd	2061-2065	5

3.3 Period of the Study

The periods of the study for selected companies are not homogenous due to the data problem. The study periods varies company to company. The table 3.1 have shaped sample companies and their study period.

3.4 Method of Analysis

To get the solution of the objectives which are set in chapter 1 appropriate statistical and financial tools are employed. In this study, simple correlation simple regression and multiple regression models are used as analytical tools. Attempts have been made to show how firm's characteristics (independent variables) are related to the firms capital structure (dependent variables) by deriving the correlation matrix and estimating the OLS regression Model.

a) The Model Estimation

In analyzing the secondary data, this study uses descriptive and inferential statistics. The correlations among the variables have been examined by deriving the pearson's correlation matrix. Beside, the study has estimated OLS regression equation to show how firm's characteristics Viz size, growth, risk, profitability, fixed asset, liquidity causes firm's capital structure level to vary. The estimated model of OLS regression is:

$$Y = \beta_0 + \beta_1 \text{SIZE} + \beta_2 \text{GROWTH} + \beta_3 \text{RISK} + \beta_4 \text{FIXEDASSET} + \beta_5 \text{PROFITABILITY} + \beta_6 \text{LIQUID} + E_i$$

Where,

Y = Dependent variables (Dv) measured in following way

LTDR = Long term debt ratio measured as total debt of the firm divided by total book value of assets .

STDR = Short term debt as measured as short term debt divided by total book value assets.

β = Coefficient of independent variables

SIZE = Natural log of total sales

GROWTH = Growth in sales

RISK = The variation in the *EBIT*

FIXED ASSET = Fixed asset

LIQUID = Liquidity of the firm

PROFITABILITY = EBIT

E_i = Residual

The variables included in the estimation of the model and their casual relationships with the dependent variables have been discussed in the following subsection. A definition of the variables and their likely relationship has been presented as the priori hypothesis in table 3.2 together with explanation of how they are related. The analysis of the secondary data and the estimation of the above model have been carried out by application of SPSS data analysis software.

b) The priori Hypothesis and Variable Definition

Above model also assumes the reasonable priori hypotheses. It is expected that the priori expected signs of the different independent variables with the dependent variables are either positive, or negative or both. In order words the coefficients of the independent variables can be less than zero, greater than zero or less or equal or greater or equal to zero. The theoretical explanation and the expected signs of independent variables are discussed here. The summary of priori hypotheses has been presented in the table 3.2

Table 3.2

Priori Hypothesis: Related to Leverage

Explanatory variables	Positive	Negative
Natural log of total sales(size)	✓	
Fixed assets	✓	
Growth in sales(Growth)	✓	
The variation in EBIT (risk)		✓
Liquidity of firm (LIQUID)		✓
Profitability (EBIT)		✓

Different measures of capital structure such as long term debt to total asset (LTDR), short term debt to total assets (STDR), and total debt to total asset (TDR) are used as dependent variables. While some studies used market value measure for studying the leverage this study uses book value measure for the dependent variables. The theoretical definitions of the independent variables are presented here:

Size of the Firm

Firm size (SIZE) has been studied as one of the fundamental determinants of the capital structure in most of empirical studies. The rationale for the belief that size is influential with respect to capital structure lies in the evidence that the larger firm may be more diversified enjoys easier access to capital markets, have larger asset collateral, receive high credit rating for their debt issue, it is plausible that the size of the firm is positively related to the firm's capital structure. This study has used natural log of total sales of the firm as the measure of size of firm.

Fixed Assets

Fixed assets have been studied as the one of the independent variables affecting capital structure. Assets act as collateral and provide security to lenders in the events of financial distress. The firms with higher fixed asset are expected to have high level of debt. The effect of fixed asset on the capital structure is found to be positive by number of studies.

Profitability

The profitability of the firm has been another independent variable extensively examined in the empirical studies. It is commonly believed that higher the profitability, higher would be the proportion of equity than debt in capital structure of a firm. This is because there is strong tendency for reserves to be large in case of profitable firm. So it seems that firms with higher profit will be able to finance projects with internally generated funds (retained earnings) rather than depending on debt financing. Many studies showed that there is a negative relationship between profitability and capital structure. EBIT has been taken as the proxy variable for profitability.

Growth

Growth (GROW) of the firm may also have influence on the capital structure level of a firm. Many studies have examined growth variables as one of the important independent variables of capital structure. Growing firms need to expand their fixed assets. Fast growing companies rely more heavily on external capital, especially on the use of debt. Many studies concluded that growth variable is positively related to the firm's leverage. Empirical studies have measured the growth variable in different ways. Among the various measures of growth of a company, some important ones are rate of change in earnings, sales, dividends, and assets and retained earnings. However, this study measures growth of the firm as the percentage change in total sales from the last year's sales figure.

Risk

The risk (RISK) of the firm, as presented by higher earnings variability, has also been considered as an important determinant of capital structure in many empirical studies. Theoretical literature argues that the greater the risks (earnings variability) faced by a firm, the lower its debt level. There is a negative relationship between risk and capital structure. Although different studies have used such as changes in EBIT and variance, standard deviation or coefficient of variations of earnings as measures of risk. It is measured as the percentage change in EBIT from last year to this year divided by last year's EBIT.

Liquidity

Liquidity (LIQUID) of the firm may also have an impact on the capital structure decision. Contrary to the evidences of positive relationship between fixed asset and leverage, the relationship between Liquidity leverage may be expected to be negatively related. The higher liquidity of firm may imply that companies with higher level of unutilized and un-invested fund may avoid use of debt in their capital. In addition not only they avoid use of debt, rather tend to retire the existing debt and other short term obligation with the unutilized funds. Beside, funds in the form of excess liquidity may be used by the firms to finance new projects. This avoids the debt borrowing for new projects. Empirical studies have also shown the negative relation of liquidity with the debt level. The liquidity for this purpose has been measure by dividing the current assets by current liabilities. This study hypothesizes the negative relationship between liquidity and leverage.

CHAPTER - IV

DATA PRESENTATION AND ANALYSIS

The previous three chapters including introduction, review of literature and research methodology have already provided an explanation to justify the study of this kind to show how capital structure is determined by various variables. In order to find out the determinants of capital structure of the Nepalese listed companies data are taken from the seven different companies have been empirically analyzed. They are manufacturing sector and non manufacturing sector include hotels. As mentioned in third chapter correlation and regression models have been applied to analyze data.

4.1 Descriptive Statistics Analysis of the Variables

The means and standard Deviation of the all variables used are presented in table 4.1. Capital structure of different seven companies has been shown in table 4.1. Capital structure is measured by two ways. One is long term debt to asset and another is long term debt to equity. The variation and average of capital structure are shown in table 4.1. Risk is measured by standard deviation. Large scale data are analyzed by mean and standard deviation statistical tools. Mean and standard deviation of all variables which affects the capital structure are analyzed in table 4.1. Manufacturing and non manufacturing Nepalese listed companies are taken to analyze the impact of different variables on capital structure.

Table 4.1
Means and Standard Deviation of Variables of Selected Firms

Name of Company		LTD/ TA	LTD/ Eq	EBIT/ TA	CA/ CL	FA/ TA	RISK	Log Sales	Grow S
Nepal Banaspati Ghee Udhyog Ltd	Mean	0.038	0.156	-0.002	0.129	0.377	-0.706	5.937	-0.504
	S.D	0.045	0.187	0.079	0.008	0.032	1.897	1.296	0.479
Bottlers Nepal Ltd	Mean	0.077	0.103	0.060	2.189	0.470	-0.075	8.818	0.037
	S.D	0.137	0.180	0.026	1.389	0.240	0.925	0.034	0.096
Khadhya Udhyog Ltd	Mean	0.026	0.046	-0.177	0.309	0.842	0.267	6.598	4.356
	S.D	0.018	0.032	0.118	0.413	0.162	1.486	0.895	10.769
Nepal Lube Oil Ltd	Mean	0.000	0.000	0.015	1.264	0.119	0.519	8.132	0.160
	S.D	0.000	0.000	0.010	0.022	0.029	1.897	0.135	0.199
Soaltee Hotels Ltd	Mean	0.200	1.067	0.060	0.596	0.535	0.504	8.587	0.151
	S.D	0.153	0.443	0.030	0.068	0.186	0.472	0.150	0.447
Oriental Hotels Ltd	Mean	0.852	2.035	0.073	0.588	0.896	0.301	8.452	0.098
	S.D	0.024	0.078	0.034	0.067	0.018	0.704	0.097	0.171
Taragaon Regency Hotel Ltd	Mean	0.695	1.875	0.038	0.320	0.957	0.189	8.570	0.082
	S.D	0.152	0.586	0.014	0.290	0.013	0.228	0.079	0.150
Total	Mean	0.270	0.755	0.009	0.771	0.599	0.143	7.871	0.626
	S.D	0.344	0.886	0.096	0.849	0.314	1.207	1.194	4.017
N	35	35	35	35	35	35	35	35	35

The above table 4.1 clearly shows that the mean value of long term debt ratio depicts the capital structure pattern. Long term debt ratio of total sample firm representing 26% indicates that 26 percent of total asset of the total sample firms have been financed through the use of long term debt. Long term debt to equity of total sample representing 75 % indicates the public limited company use long term debt in compare to equity. We know that capital structure is the composition of debt and equity. Standard deviation of long term debt to total asset is 0.343 and standard deviation of long term debt to equity is 0.886.

Examining the patterns of mean value of the size of firm as measured by taking the natural log of total sales, One can observe that size of Bottlers Nepal Ltd is larger

compared to the size of other company. Above data show that Khadhya Udhyog Ltd to have higher growth rate than other company. Nepal Banaspati Ghee Udhyog Ltd to have higher risk than other company. In an average the profitability of the total sample measured by EBIT is 0.009.

According to above table, Oriental hotels Ltd seems to have higher profit than others when one consider growing and riskier firms should have higher profitability then the observed result may contradict this contradiction may be due to measurement differences since the growth has been measured as changes in sales and risks as changes in EBIT only. The percentage of assets tangibility as measured by ratio Fixed asset to total asset is highest in Taragaon Regency hotels Ltd. Liquidity is measured by current asset to current liabilities is highest in bottlers Nepal Ltd. The average size of the company is log 7.870. Standard deviation of the size of sample firm is 1.194. Mean value of profitability is 0.009 and standard deviation of it is 0.096. Likewise the average liquidity position is 0.770 times. Standard deviation of it is 0.849. The percentage of asset tangibility as measured by ratio of fixed asset to total asset is 0.599. Standard deviation of it is 0.314. Similarly the average growth rate of sample firms is 0.625 and standard deviation of it is 4.017. The average earning variability, which measures the business risk, is 0.142 in sample firms and standard deviation is 1.207.

4.2 Capital Structure and Its Determinants

In this section, we analyze the determinants of capital structure relating with different variables. For this we make the correlation analysis, simple regression and multiple regression analysis for public limited companies.

4.2.1 Analysis of Relationship among the Variables

Correlation coefficients between different variables are shown in below table 4.2. The Pearson's correlation coefficients of the capital structure measures, namely the long term debt to asset and long term debt to equity and the independent variable size, growth, asset tangibility, profitability, risk, liquidity have been derived and analyzed . The coefficients of Pearsons correlation of dependent and independent variable are presented in table 4.2.

Before reporting the results of model estimation, it is useful to determine the degree of correlation between the variable as it would facilitates analysis of regression. However, the precaution is needed in the analysis of the correlation as the pearsons correlation assumes the variables to be linearly related higher the non linear relation higher would be the chances of misinterpretation of the association between variables. Thus, no cause and effect relationship may be indicated by higher coefficient of correlation.

Table 4.2
Correlation of Dependent and Independent Variables

	LTD/TA	LTD/Eq	EBIT/TA	CA/CL	FA/TA	RISK	Log Sales	Grow S
LTD/TA	1	.891(**)	.372(*)	-.239	.701(**)	.050	.406(*)	-.101
LTD/Eq		1	.392(*)	-.309	.633(**)	.094	.436(**)	-.108
EBIT/TA			1	.294	-.186	.224	.358(*)	-.532(**)
CA/CL				1	-.452(**)	.173	.394(*)	-.137
FA/TA					1	-.085	.100	.156
RISK						1	.104	-.057
LogSales							1	-.020
GrowS								1

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

It is apparent from the Pearsons correlation matrix that Long term debt ratio is significantly correlated with Long term debt to equity ratio at 1 percent level. The negative correlation between Long term debt and liquidity, growth of the firm indicate that the firms with larger liquidity, higher growth prospect use lower level debt in their capital structure. However correlation is not significant which matches priori hypothesis. Long term debt to asset is positively correlated with risk which indicates that firm with risky nature use more debt than other which do not match priori hypothesis.

The correlation is positive between long term debt ratio and profitability, size of the firm at 5 percent level, which indicates that firms with higher profitability and larger sales tend to use higher debt. Long term debt ratio is positively correlated with asset tangibility at 5 percent level which suggests that the firm with higher fixed assets use more debt,

which matches priori hypothesis. The relationship of long term debt to equity with liquidity and growth of sales is negative suggesting lesser dependency on debt by the firm with higher liquidity and higher growth of sales. Risk is positively correlated with the long term debt equity. Long term debt to equity positively correlated with assets tangibility, size at 1 percent level which indicates that the firm with higher assets and sales uses higher long term debt. Long term debt to equity positively correlated with EBIT at 5 percent level. Which indicates that the firm with higher profit uses higher long term debt which do not matches priori hypothesis.

Size of firm affects the capital structure of firm. It is also the main determinants of capital structure. Long term debt to total asset is negatively correlated with growth in sales. When there is growth in business that firm doesn't use the debt capital. Long term debt to equity is positively correlated with EBIT, fixed asset, risk, sales. Long term debt to equity is negatively correlated with Liquidity and growth in sales. Profit of the company is positively correlated with liquidity it means where is profitability there is liquidity. Profit of company is negatively correlated with fixed asset. EBIT of company is positively correlated with risk. The risky firm can make profit than other firm. Sales is also positively correlated with EBIT. If there is a lot of sales in company that company makes a lot of profit but there is negative relationship between growth of sales and profit. Liquidity is negatively correlated with fixed asset. If there is a lot of fixed asset in company that company has low liquidity. Liquidity is positively correlated with profit. Firm having the quality of liquidity that firm can make profit. Sales are positively correlated with Liquidity. Firm having a lot of sales has a lot of liquidity.

Fixed asset is negatively correlated with risk. Risky business cannot retain fixed asset. Sales and growth in sales is positively correlated with fixed asset. Risk is positively correlated with sales.

4.2.2 Determinants of Capital Structure

To examine the impact of each variable on capital structure of company, we use simple and multiple regression models. The below table 4.3 shows the regression results for public limited companies. Capital structure is as measured by Long term debt to asset.

Model I

$$Y = a + bx$$

$$LTD/TA = a + b \text{ Profitability}$$

$$LTD/TA = a + b \text{ Size}$$

$$LTD/TA = a + b \text{ Assets Tangibility}$$

Table 4.3

Result of Simple Regression Analysis (Model I)

Simple Regression Model – I							
Dependent variable for this model is LTD/TA							
Predictors (Independent variables)	Constant	Beta Coefficient	R- Square	Adjusted R-square	S. E. of estimate	t- value	Sig. (p-value)
EBIT/TA (Profitability)	0.257	1.326	0.139	0.113	0.323	2.305	0.028*
CA/CL (Liquidity)	0.344	-0.097	0.057	0.029	0.338	-1.414	0.167
FA/TA (Asset tangibility)	-0.190	0.766	0.492	0.477	0.248	5.654	0.000**
RISK (earning variability)	0.268	0.014	0.002	-0.028	0.348	0.286	0.776
Log Sales (Size measure)	-0.649	0.117	0.165	0.140	0.318	2.552	0.016*
Grow S (Growth measure)	0.275	-0.009	0.010	-0.020	0.346	-0.586	0.562

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

The regression coefficient of profitability against the long term debt to total asset (capital structure) is positive which shows that capital structure is positively affected by profitability. It means the firm with higher profitability has higher debt capital. The coefficient of multiple determination is 0.139 which indicates that 13.9 percent variation in long term debt to total asset (capital structure) is defined by profitability.

As far as we concern with T value, the beta coefficient is statistically significant at 5 percent level of significance. Therefore this result is against our expectation. The regression coefficient of liquidity is negative and the coefficient of multiple determination is 0.057, which defines that only 5.7 percent of variation in long term debt to total asset, T value is -1.414 and sig.(p-value) is 0.167. Hence we can say that liquidity

has negative impact on the capital structure. It means the firm with higher liquidity has lower long term debt, which matches our assumption. The beta coefficient of assets tangibility is positive and significant at 1 percent level. Coefficient of multiple determination is 0.492. So we can say that only 49.2 percent fluctuation in Long term debt to total asset is determined by asset tangibility factor. Hence we can say that asset tangibility has positive impact on the capital structure. Which is also matched by our expectation.

The regression coefficient for the risk is positive. The coefficient of multiple determination is 0.002. So we can conclude that only 0.2 percent fluctuation in long term debt to total asset is determined by risk factor. We can say that risk has positive impact on the capital structure. It is the against of our assumption. The regression coefficient for the size is positive and significant at 5 percent level of significance. The coefficient of multiple determination is 0.165. It means 16.5 percent fluctuation in long term debt to total asset of the company is explained by size. It agrees with our expectation. T-value is 2.552 and sig.(p-value) is 0.016*. The regression coefficient of growth is negative but not significant and multiple determination value is 0.010. It means 1 percent fluctuation in long term debt to total asset is explained by growth factor. Which do not match our assumption.

The model I is obtained by regressing long term debt ratio on independent variables as specified in the model. Only liquidity and growth of the firm are found to be negatively related to long term debt ratio. Which implies that the firm with higher liquidity and higher growth of sales has lower level of long term debt in their capital structure. Consistent with the priori expectation, the negative relation of liquidity on total debt may imply that the firms with unutilized funds may avoid use of new debt funds and more over may retire the existing debt. Positive relation of asset tangibility, size variables with leverage measures as measured by long term debt ratio are consistent with the priori expectation while positive relation of profitability, risk variables with leverage measures as measured by long term debt ratio are not consistent with the priori expectation.

Table 4.4

Result of Multiple of Regression (Model II)

Equation LTD/TA=

$$\beta_0 + \beta_1\text{SIZE} + \beta_2\text{GROWTH} + \beta_3\text{FIXED ASSET} + \beta_5\text{PROFITABILITY} + \beta_6\text{LIQUID}$$

Multiple regression model – II					
Dependent variable for this model is LTD/TA					
	Model Summary	Beta Coefficients	Std. Error	t	Sig. (P value)
(Constant)		-0.663	0.218	-3.037	0.005
EBIT/TA (Profitability)		1.711	0.413	4.145	0.000**
CA/CL (Liquidity)		-0.061	0.045	-1.344	0.190
FA/TA (Asset tangibility)		0.760	0.114	6.661	0.000**
RISK (earning variability)		0.002	0.025	0.067	0.947
Log Sales (Size measure)		0.064	0.031	2.081	0.047*
Grow S (Growth measure)		0.003	0.009	0.285	0.778
R	0.890				
R Square	0.791				
Adjusted R Square	0.747				
Std. Error of the Estimate	0.172				
F	17.691				
Sig. (Overall model significance)	0.000**				

** Correlation is significant at the 0.01 level (2-tailed)

* Correlation is significant at the 0.05 level (2-tailed)

From the above table, it can be seen that the regression result shows that the coefficient of multiple determination is 0.791 which indicates that 79.1 percent variation in long term debt to total asset is determined by the explanatory variables undertaken in this study. The beta coefficient of profitability is positive and significant at 1 percent level of significance. It indicates that capital structure is affected by profitability. The result is totally out of our expectations. Again, the beta coefficient of liquidity is negative it shows that the firm with higher liquidity uses less debt capital. The result matches our expectation. The beta coefficient of assets tangibility is positive and significant at 1 percent level of significance. It means that the firm with higher proportion of fixed

assets uses more debt in capital. It agree our expectation. The beta coefficient of earning variability is positive but not significant. The beta coefficient of sales is positive and significant at 5 percent level of significance. Which suggest that the firm with larger sales uses more long term debt. The beta coefficient of growth sales is positive but not significant. It agrees our expectation.

The below table 4.5 and 4.6 shows the regression results for public limited companies when capital structures are as measured by long term debt to equity.

Model III

Y= a+bx

LTD/ Equity=a+b Profitability

LTD/Equity= a+b Size

LTD/Equity= a+b Asset Tangibility

Table 4.5
Result of Simple Regression Analysis (Model III)

Simple Regression Model – III							
Dependent variable for this model is LTD/equity							
Predictors (Independent variables)	Constant	Beta Coefficient	R- Square	Adjusted R-square	S. E. of estimate	t-value	Sig. (p-value)
EBIT/TA (Profitability)	0.721	3.601	0.154	0.128	0.827	2.449	0.020*
CA/CL (Liquidity)	1.003	-0.322	0.096	0.068	0.855	-1.867	0.071
FA/TA (Asset tangibility)	-0.315	1.785	0.401	0.383	0.696	4.701	0.000**
RISK (earning variability)	0.745	0.069	0.009	-0.021	0.895	0.540	0.593
Log Sales (Size measure)	-1.792	0.324	0.190	0.166	0.809	2.783	0.009**
Grow S (Growth measure)	0.769	-0.024	0.012	-0.018	0.894	-0.622	0.538

** Correlation is significant at the 0.01 level (2-tailed)

* Correlation is significant at the 0.05 level (2-tailed)

The regression coefficient of profitability against the ratio of long term debt to equity is positive which shows that capital structure is positively affected by profitability. The coefficient of multiple determination is 0.154. It indicates that 15.4 percent of variation in long term debt to equity is explained by profitability. The T-value is significant at 5 percent level. The relationship between long term debt to equity and profitability is again against our expectations as before in model I.

The beta coefficient of liquidity is negative. The coefficient of multiple determination is 0.096 which explains that 9.6 percent of fluctuation in the long term debt to equity is determined by liquidity factor. It means the firm with higher liquidity uses less debt capital. It agrees with our expectation. T-value is -1.867.

The beta coefficient of asset tangibility is positive and significant at 1 percent level. The coefficient of multiple determination indicates that 40.1 percent fluctuation in long term debt to equity is determined by asset tangibility. This result matches our expectation. Regression coefficient for risk is positive but not significant. Therefore the conclusion of coefficient of multiple determination value i.e. 0.9 percent variation in long term debt to equity explained by risk. It is against our expectation. The beta coefficient of size is positive and significant at 1 percent level of significance. The coefficient of multiple determination is 0.190 which explains that 19 percent of fluctuation in the long term debt to equity is determined by size factor. It matches our expectation.

The beta coefficient of growth sales is negative. The coefficient of multiple determination is 0.012 which explains that 1.2 percent of fluctuation in the long term debt to equity is determined by growth factor. It is against our expectation. The model II uses the leverage measure long term debt to equity ratio as the dependent variable. Among the explanatory variables, profitability is found to be positive and significant at 5 percent level whereas asset tangibility and size are found to be positive and significant at 5 percent significance level. It is consistent with the priori expectation. This would entail that the firm with the larger proportion of size and fixed asset tend to employ higher level of long term debt. Observed negative sign of liquidity and positive sign of risk variable are not consistent with the priori hypothesis.

Table 4.6

Result of Multiple of Regression (Model IV)

Equation LTD/Equity=

$$\beta_0 + \beta_1\text{SIZE} + \beta_2\text{GROWTH} + \beta_3\text{FIXED ASSET} + \beta_5\text{PROFITABILITY} + \beta_6\text{LIQUID}$$

Multiple regression model – IV					
Dependent variable for this model is LTD/Equity					
	Model Summary	Beta Coefficients	Std. Error	t	Sig.
(Constant)		-1.943	0.576	-3.372	0.002
EBIT/TA (Profitability)		4.283	1.089	3.934	0.001**
CA/CL (Liquidity)		-0.369	0.120	-3.077	0.005**
FA/TA (Asset tangibility)		1.485	0.301	4.933	0.000**
RISK (earning variability)		0.044	0.067	0.657	0.517
Log Sales (Size measure)		0.259	0.082	3.180	0.004**
Grow S (Growth measure)		0.004	0.024	0.189	0.851
R	0.884				
R Square	0.782				
Adjusted R Square	0.735				
Std. Error of the Estimate	0.456				
F	16.712				
Sig. (Overall model significance)	0.000				

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed)

From the above table, we can know that the coefficient of multiple determination is 0.782 which indicates that 78.2 variation in long term debt to equity is explained by the variables undertaken in the study. The beta coefficient of profitability is again positive as before in model III. As concerning T-value, it is also significant at 1 percent level of significance. It indicates that long term debt to equity is positively affected by profitability. This result does not match with our assumption. The beta coefficient of liquidity is negative and significant at 1 percent level of significance. It indicates that liquidity has negative impact on capital structure. The beta coefficient of asset tangibility

is positive and significant at 1 percent level of significance. Again the beta coefficient of risk is positive. Risky firm uses more long term debt than others company. Beta coefficient of size is positive and significant at 1 percent level of significance. Again the beta coefficient of growth is positive but not significant.

4.3 Major Findings of the Study

The analysis of association of variables has been made by deriving the pearsons correlation coefficients. The analysis of OLS multiple regressions estimated for each models has been made to study about the determinants of capital structure. Based on the analysis of historical and survey data, this study uncovered following major findings

-) The listed firms in Nepal are found to be using long term debt as 27 percent in their capital structure. Long term debt to equity is 75 percent.
-) The relationship of long term debt to total asset with long term debt to equity is positive and significant at 1 percent level of significance. Profitability is found positively and significantly related to Long term debt to total asset and long term debt to equity at 5 percent level of significance. Asset tangibility and size are found positive and significant with long term debt to total asset and long term debt to equity. Profitability is positively correlated with the size at 5 percent level of significance. Profitability is negatively correlated with growth of sales at 1 percent level of significance. Liquidity is negative and significant with asset tangibility but positive with size.
-) Long term debt of the total sample firms has long term debt to equity, profitability, asset tangibility, size as significant explanatory variables.
-) The simple regression model (model I) shows that the beta coefficient of profitability and size is positive and statistically significant at 5 percent level of significance. The beta coefficient of asset tangibility is positive and statistically significant at 1 percent level of significance.
-) The multiple regression model (model III) also shows positive relationship of profitability with long term debt to total asset at 1 percent level of significance. The beta coefficient of asset tangibility is positive and statistically significant at 1

percent level of significance. Size has positive relation with long term debt to total asset.

-) Multiple regression model (model IV) has taken dependent variable as LTD|Equity. According to this model, profitability, asset tangibility, size has positive relationship with long term debt to equity at 1 percent level of significance but liquidity has negative relationship with long term debt to equity at 1 percent level of significance.
-) As concerned with the relation of long term debt with liquidity, risk and growth, the simple regression model (model I) shows that there exist negative relationship between long term debt and liquidity but not significant. Likewise there exist positive relationship between long term debt and risk which is also not significant. There is negative relationship of growth with long term debt.
-) The multiple regression coefficients (model III) of liquidity are negative but not significant. The beta coefficient of risk and growth is positive but not significant.
-) The simple regression coefficient (model II) of profitability is positive and significant at 5 percent level of significance. The beta coefficient of asset tangibility is positive and significant at 1 percent level of significance. The beta coefficient of asset tangibility is positive and significant at 1 percent level of significance. The beta coefficient of size is positive and significant at 1 percent level of significance. There exist negative relationship of liquidity and growth with long term debt to equity. But there exist positive relationship of risk with long term debt to equity.

CHAPTER - V

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary

The concept and review of capital structure theories as well as empirical studies have been presented in chapter one and chapter two respectively. Likewise research methodology and presentation and analysis of data from selected listed companies are also have been streamlined in the chapters three and four respectively. Now, a brief reviews and the finding as well as recommendations are presented in this chapter.

This study focus on capital structure and its determination. The main objective of this study is to test the capital structure and its determinants which affect capital structure and to study the relationship between different leverage measures and firm characteristics. The theory of corporate capital structure has remained controversial despite number of studies appeared in the finance literature since the work of MM in 1958. Most of the theoretical accounts of how these variables explain corporate capital structure have been developed from the developed market context. Some other explanations are also from the developing market but very limited from least developed markets. However, none of these have been able to provide the uniform theoretical explanations on determining factors of capital structure. What determines the capital structure of firms in Nepal, a least developed market, may be rewarding subject of empirical investigation. Thus, this study has been carried out with the main purpose of examining the various issues of capital structure theories and practices and determinants of capital structure in Nepalese non financial listed firms.

This study is based on the historical data collected from the financial statement of the firms and reports maintained at the SEBON and corporate annual reports. The study analyzed 35 pooled cross sectional observation of 7 listed non financial firms for various time periods ranging from 2061 to 2065. The leverage measures, as dependent variable namely long term debt to total asset and long term debt to equity ratios have been

computed and regressed on the explanatory variables size, growth, profitability, risk, asset tangibility and liquidity of the firm. These variables have been measured as ratios and percentage changes, expected size is measured as natural log of sales.

5.2 Conclusion

From the above finding, it is clear that the correlation coefficient, simple and multiple regression coefficients of profitability, asset tangibility and size is positive and significant. It means profitability, asset tangibility and size affects on capital structure positively. We can say that these are main determinants of capital structure. The T-values are also statistically significant. In an attempt to analyze corporate capital structure and its determinants, this study has unearthed some facts about capital structure in Nepalese context. Base on these major findings several conclusions have been drawn and discussed here. The proportion of long term debt in their capital structure is far less than short term debt. Among of sample firms oriental hotel ltd use highest long term debt than other company. Oriental hotel ltd has more profit than other company. Bottlers Nepal ltd has more liquidity than other company. Taragaon Regency hotel ltd has more assets than other company. Nepal lube oil ltd has more risk than other company. Bottlers Nepal ltd has more sales.

Nepalese firms having more liquidity have used the less debt in their capital structure. The firms with high profitability, assets, and sales have used more long term debt. The coefficient of correlation indicates that firm with large size as measured by log sales has less growth opportunities, more risk, more asset tangibility more liquidity.

Determinants of leverage that seem to influence cross sectional variation in capital structure in other market context also seemed to influence the capital structure in Nepal. However, the manner these determinants have influence various leverage measures differ in many respect. Such differences in empirical finding in relation to previous study may be attributed to the variation in sample size, study period and measurement of variables. Long term debt is positively and significantly determined by profitability, asset tangibility and size of firms. Long term debt is negatively determined by liquidity and

growth. Long term debt is positively influenced by risk. Of the total sample firms, all with significance of 5 percent profitability and size have positive influence on long term debt. The firm with higher sales volume has higher risk and less growth opportunities. The firm with higher fixed asset has low risk and growth opportunities. These types of firms have higher volume of sales. The firm with higher liquidity has low fixed asset but higher risk and sales volume. Liquidity and profitability have positive relationship with each other. Profitability has negative relationship with asset tangibility and growth opportunities.

5.3 Recommendation

After identifying the issues and constraint as derived from finding some practicable recommendation have been suggested. These guide lines would helps in taking prompt decisions in relation to capital structure and its determinants to meet the above constraints. Recommendation is made for the future research direction as well.

-) Nepalese public limited company should pay more attention to balance between long term debt and equity.
-) The proportion of long term debt is quite low. Some companies have no long term debt at all and some have heavy debt. So, such unsound capital structure should be avoided by maintaining some target that maximizes the value and minimizes the risks as part of strategic financing.
-) As the relationship between long term debt and asset tangibility is significant and positive. The firms with fixed assets should employ more long term debt.
-) Since the long term debt is positively related to profitability, the firms should employ long term debt to improve profitability.
-) The size has positive influence to the long term debt. Therefore. The larger size firms should increase long term debt.
-) Other factors should also be kept in mind while making capital structure decision such as financial flexibility, availability of internal funds, credit rating, earning and cash flow volatility.

-) This study has focused in analyzing the traditional determinants of capital structure. However, future research can focused on looking into macro variables, industry and firm level strategic variables, corporate governance.
-) In most of the companies, management is not paying attention to capital structure and its determinants. It can be improved by developing professionalism in management. Professional management will consider about the determinants of capital structure. Then it will help to make optimal capital structure.
-) Nepalese listed companies lack practical knowledge regarding capital structure and its determinant. Different training should be given to management board to make optimal capital structure. While we are deciding about capital structure, we should consider about its determinants. These determinants will play important role on capital structure. Only optimal capital structure maximizes the value of firm and minimizes the cost of firm.