Chapter I
Introduction

1.1 Background of the study

The basic goal of a firm is to maximize the value of the firm or the shareholder's wealth. To achieve this goal, the company should have sound investment and financing policy. Company should acquire current assets such as inventory, marketable securities, etc. and fixed assets such as land and building, plant and machinery, equipments, vehicles etc. To finance these assets, a firm can use various sources of financing. These sources of financing may be short term and long term. Short-term sources of financing mature within one year or less whereas fund raised from long-term sources of financing can be used for several years or forever. Thus, when a firm expands its business or activity, it needs capital. The term capital denotes the long-term funds of the firm raised from long-term debt, preferred stock and common equity. All of the items on the liabilities side of firm's balance sheet, excluding current liabilities, are sources of capital. The total capital can be divided into two components: debt/borrowed capital and equity/ownership capital.

Debt capital includes all long term borrowing incurred by firm. Debenture/bond, long-term loan etc. are major sources of debt or borrowed capital. A firm employs substantial amount of debt capital because of tax deductibility of interest payment, flexibility and lower effective cost. However excess amount of debt exposes greater risk.

Equity capital consists of the long-term funds provided by the firm's owners, the stockholders. In other words, equity capital includes common stock, paid in capital (or share premium), reserve and surplus, and retained earnings. Joint Stock Company cannot be established without equity financing. In Nepal the promoters must hold at least one share for the incorporation of Joint Stock Company in accordance with Company Act 2063. Preferred stock is neither purely a debt nor equity. Since it contains the characteristics of both debt and equity, it is said to be a hybrid security. So there is no unanimous practice about the treatment of preferred stock. However, it is said to be equity from legal point of view since the company is not obliged to pay dividends on preference shares.

One should be clear about key differences between these two types of capital, relative to voice in management, claim on income and assets, maturity and tax treatment. Debt holder and preferred stock holders do not have voice in management. However, in

default they may receive a voice in management. Otherwise, only common stock holders have voting rights. Debt holders have a higher priority of claim against any earning or asset available for payment. Generally, life of debt is stated. But equity capital remains in the firm for an indefinite period of time. Tax can be saved in interest payment whereas payment of dividend is non tax deductible expenditure. Tax must be paid before the payment of dividend to the shareholder. Due to its secondary position (in income and asset) relative to debt, suppliers of equity capital take greater risk and therefore must be compensated with higher expected return than the suppliers of debt capital.

Capital structure refers to the combination of long-term sources of funds, such as, long-term debt, preference stock and common equity including reserves and surpluses (i.e. retained earnings). Capital structure represents the relationship among different kinds of long-term sources of capital and their amount. Normally, a firm raises long-term capital through the issue of common shares, sometimes accompanied by preference shares. The share capital is often supplemented by debt securities and other long-term borrowed capital. Capital structure of a firm can be shown in following equation:

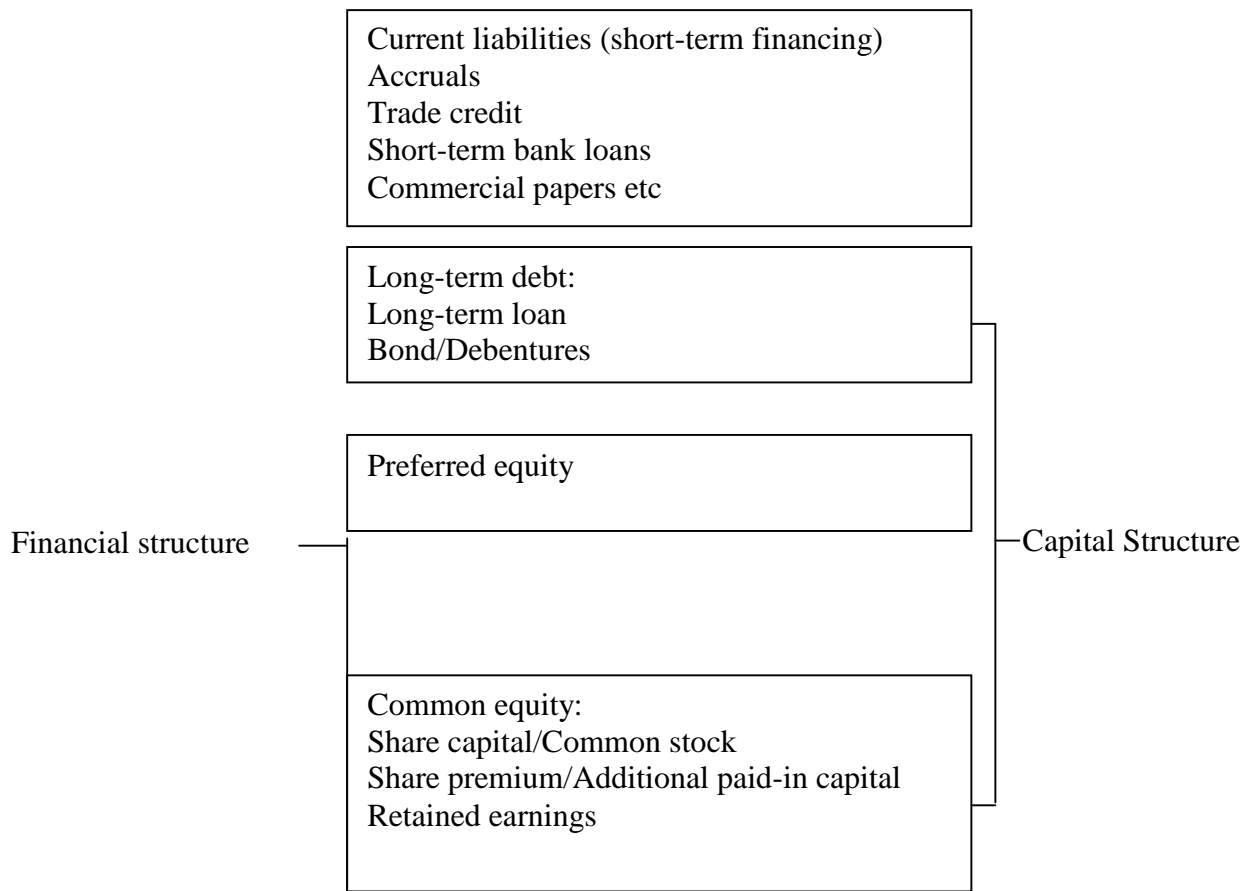**Capital structure=Long-term debt +Preferred stock +Common equity**

Financial structure refers to the composition of all sources and amount of funds collected to use or invest in business. In other words, financial structure refers to the 'Capital and Liabilities side of Balance Sheet'. Therefore, it includes shareholder's funds, long-term loans as well as short term loans. It is different from capital structure as capital structure includes only the long-term sources of financing while financial structure includes both long-term and short-term sources of financing. Thus, a firm's capital structure is only a part of its financial structure. The financial structure of a firm can be shown in following equation:

Financial structure=Current liabilities +Long-term debt +Preferred stock +Common equity

The relationship between financial and capital structure can be expressed in following equation:

Financial structure=Current liabilities +Capital structure

Figure*1.1:* Capital and Liabilities

Current liabilities (short-term financing)
Accruals
Trade credit
Short-term bank loans
Commercial papers etc

Long-term debt:
Long-term loan
Bond/Debentures

Preferred equity

Financial structure — ———Capital Structure

Common equity:
Share capital/Common stock
Share premium/Additional paid-in capital
Retained earnings

1.2 Concept of Public Limited Company

A company is a legal entity formed to conduct business or other activities in the name of the association. Since it is incorporated, it has a legal personality distinct from those of its members. There are four main types of company:

1.   Private company limited by share
2.   Private company limited by guarantee
3.   Private unlimited company
4.   Public limited company

Public limited company has a share capital and the liability of each member is limited to the amount unpaid on shares that a member holds. A public limited company may offer its shares for sale to the general public and may also be quoted on the stock exchange.

Clause 2(c) of Company Act, 2053 defines "Public Company" means any company incorporated under this Act. A minimum of seven members is required to constitute and register a public company. There is no restriction on the maximum number of

shareholders. The shareholders are free to sell their shares in the market. Public companies must issue a prospectus for inviting people to purchase their shares.

Features of Public Limited Company (according to Company Act 2053)

1. **Number of members:** In public company only minimum number of members is fixed, that is seven and there is no limit on maximum number.
2. **Subscription shares:** Public company invites subscription from public to its shares and debentures.
3. **Transfer of shares:** Transfer of shares is freely allowed.
4. **Incorporation:** An application signed by at least seven promoters with Memorandum, Articles of Association and prospectus must be submitted for incorporation.
5. **Allotment of shares:** Shares can be allotted only after the receipt of application money for minimum subscription.
6. **Commencement of business:** Public company can start business only after getting the certificate of commencement of business.
7. **Directors:** A public company must have at least three directors and maximum eleven. The term of office of the directors will be four years.
8. **Statutory meeting:** Meeting of the Board of Directors will be held at least six times in a year. The period of interval between such meetings should not exceed three months.
9. **Use of word 'limited':** For a public company it is sufficient to use the word 'limited' with its name.

1.3 Brief Overview of Bishal Bazaar Company Limited

Bishal Bazaar Company was established in the year 2026B.S. Its share capital in the fiscal year 2046/47 was Rs.14, 000,000 with a net profit of Rs.2,500,47/45. It had a fixed capital of Rs.4,48,83,747/43.

1.4 Focus of the study

The main purpose of this study is to evaluate the capital structure of the private public limited companies. Capital structure refers to the mix of equity share capital and long-term source of fund such as: debenture, long-term debt and preference share capital. In the lack of proper planning of the capital structure, the organization may face difficulties in raising funds to finance their activities, thus the firm cannot achieve their goal. The capital structure decision is a major decision, which affects the overall cost of capital, total value of the firm and earnings per share. The financial manager is responsible to plan on optimal capital structure. It's already stated that optimum

capital structure maximize the total value of firm and earnings per share and minimize the cost of capital. It does not affect the total operating earnings of the firm.

Bishal Bazaar Company is a public limited company. The sources of capital, the proportion of capital and the cost of the capital used by this company in the capital structure are the focus of the study. Because of these elements, capital structure determines the success of their company.

Hence, the focus of the study can be summarized as follows:
➢   The importance of the capital structure in the successful running of the public limited companies.
➢   The capital structure decision making of the public limited company, i.e, Bishal Bazaar Company.
➢   The composition of the equity capital and the debt capital in the capital structure of public limited companies.
➢   The return with respect to the capital used in the capital structure of the public limited companies.
➢   The capital structure of the public limited companies using the cost of the capital and the return on the capital.
➢   The correlation among the different elements, regression analysis for relationships between two variables and dimensions of the capital structure of the public limited companies.
➢   The capital structure of the Bishal Bazaar Company.

1.5 Statement of the Problem

A company cannot achieve its target objectives and profit due to different kinds of problems, which is related to both external and internal environment. So, concerned companies are also suffering from different problems by external environment as well as internal environment. External environment consists of those factors which are uncontrollable but a company can control internal environmental factors to some extent. Maintaining an optimal capital structure is a major challenge to firm. It helps to achieve targeted objectives because it affects the overall cost of capital, earning per share and total value of the firm primarily. But in long run it affects assets structure, profitability, growth rate of operating leverage, tax liability, market and internal condition, control position, management attitude and performance financial flexibility, timing and solvency, cash flow and sales stability.

It is already stated that due to sound mix of capital structure a firm it can achieve its target. But if the capital structure is inappropriate it can bear high cost of capital. If a company is earning profit without its optimal capital structure, it can increase the portion of profit while making its capital structure optimal. Some companies of private sector are also earning profit without optimal capital structure. It means all the profit earning companies may not have optimal capital structure. So this study includes public limited

companies. This study examines whether public limited companies are utilizing their optimal financial mix or not? Change in its financial mix cause fluctuation in the profit margin or not?

The problems can be stated by pointing out the following issues in the summarized form.
- ➢ Is the company's capital structure planned?
- ➢ What is the cause of the financial inefficiency?
- ➢ What is the existing capital structure position of the company under study?
- ➢ Is there an effort to maximize value through capital structure?
- ➢ Have sampled company been able to maintain appropriate capital structure?
- ➢ How far has this company been able to utilize the debt efficiency for income generation?

1.6 Objectives of the Study

The main objective of the study is to identify, analyze, interpret and pinpoint the right picture of the capital structure of selected public limited company in Nepal. The overall objective of a business is to earn a satisfactory return on the capital invested by maintaining a sound financial position.

The specific objectives of the study are as follows:
- ➢ To know the composition and characteristics of capital structure of the sampled company.
- ➢ To make financial analysis of selected sample company.
- ➢ To compute the correlation between long-term debt and capital.
- ➢ To analyze the impact of debt financing on profitability.
- ➢ To provide recommendations on the basis of the study.

1.7 Significance of the Study

Majority of the Nepalese firms do not take the concept of capital structure decision seriously which plays vital role in the firm. Despite less than satisfactory capital

structure, some Nepalese firms are earning profit. But they are taking burden of higher cost of capital and it may affect the value of the firm, and earnings per share, as a result the company fails to achieve its objectives. So this study believes that public limited companies and also other companies will be benefited hence the study is conducted on the basis of annual reports of the company. This study has been conducted on the basis of five financial reports using various financial tools and statistical tools. The study is based on the comparison of concerned firm's financial performance in terms of capital structure, which helps the companies to formulate strategies. It is also believed that it will provide valuable inputs for future researchers. The study of capital structure provides the information about the types of the sources of capital used by such type of companies. Because of the sources of capital in the capital structure reflects the financial policies of the company. The study of the capital structure also gives the prior knowledge of the possibility of the success of the industry. Hence, the study of the capital structure of the public limited company is important to assess the present and future contributions of this industry to the national economy. The reasons for the need of the study can also be summarized by the following points:

➢ This study will help to understand the capital structure of the Nepalese public limited companies.

➢ This study provides the knowledge about capability of the Nepalese public limited companies and their financial sources.

➢ This study provides the information to the stakeholders of the company.

➢ This study will provide the comparative knowledge of the return on the capital, cost of capital in the capital structure, correlation among the elements, relationships between two variables through regression analysis and dimensions of the capital structure.

1.8 Limitations of the Study

Every study has its own limitations. This is the study capital structure of selected public limited company and selection of company is based on the quick availability of data and different other reasons. These factors are the circumstances that the researchers have to face to conduct the study. Some of the limitation of this study has been mentioned below:

➢ Secondary data which are collected from books, financial statements, reports of the relevant company and websites based on this learning. So the secondary data and primary data are not accurate.

➢ This study covers only seven years i.e. from year 2058/59 to 2064/65 and deals with only one public limited company in Nepal and results from the study may or may not be appropriate to other company.

➢ Some of the data and information are taken from telephone enquiries and the personal communication. So it may not reflect the accurate analysis.

➢ The study may be incomplete because frequent visit to the company was difficult.

➢ This study gives emphasis to the capital structure of concerned company and due to shortage of necessary data, this study does not analyze all determining factors of capital structure.

➢ This study has not used all the financial and statistical tools due to the various constraints. This may a cause for not covering the total study and analysis.

➢ Another limitation of the study is time and resources constraints, many effective factors have been more detailed and shortened in order to tie the study to its time boundary and limited resources.

1.9 Organization of the Study

This study has been categorized into five chapters. The titles of each these chapters have been summarized and the contents of each of these chapters of this study are briefly defined below:

Chapter I: Introduction
Chapter II: Review of Literature
Chapter III: Research Methodology
Chapter IV: Presentation and Analysis of Data
Chapter V: Summary, Conclusion and Recommendations

The first chapter deals with the subject matter consisting introduction which includes the background of the study, concept of public limited company, brief overview of Bishal Bazaar Company, focus of the study, statement of the problem, objectives of the study, significance of the study, limitations of the study and organization of the study. This chapter covers general explanation about the thesis.

The second chapter is the review of literature which deals with the conceptual thoughts and related study with capital structure. It also includes the definitions, viewpoints, explanation of the capital structure of different personalities and critics. Hence in this chapter, all the dimensions like leverage, financial ratios, cost of capital, etc are well defined.

The third chapter describes the research methodology adopted in carrying out the present research. It deals with the research methodology, which consists of research design, sources of data and information, types of data as well as different analytical tools used in the study.

The fourth chapter is the core of the study which deals with the data collection procedure and presentation of the data with different financial tools like leverage, financial ratios, and cost of capital, capital structure theories etc. and the statistical tools like coefficient of correlation, probable error and regression analysis. This chapter also includes the analysis and interpretation of the study.

The fifth or the final chapter is concerned with the suggestive framework that consisting of overall findings, conclusions and recommendations of the study.

The bibliography and appendices are incorporated at the end of the study.

CHAPTER TWO
REVIEW OF LITERATURE

Literature review is basically a 'stock taking' work of available literature. To make the research more realistic- review of literature is required. It provides significant knowledge in the field of research. Thus, the review of various books, research studies and articles have been used to make clear about the concept of capital structure as well as to recall the previous studies made by various researchers. This chapter is comprehensive study on the conceptual framework review of books, journals and various researches regarding the capital structure of concerned manufacturing companies of Nepal.

This part of the thesis specifies the review of literature about the capital structure of the firms. "Capital structure or capitalization of a firm is the permanent financing represented by long term debt, preferred stock and shareholders equity. Thus a firm's capital structure is only the part of its financial structure (Weston and Copeland, 1990:565). Review of Literature can be studied by dividing it in the following ways:

1.   Conceptual Framework
2.   Review of Related Studies

2.1. Conceptual Framework

The conceptual framework is the framework of the literature of the research study, which includes concept and theories of capital structure and the different variables related to the capital structure of the company. This provides the concept of the various determinants of capital structure of the company.

2.1.1. Concept of Capital Structure

"Capital is an important factor of a new and existed company or capital is the lifeblood for the existence of company. A new business requires capital for production and expansion. Capital is a scarce source and much more essential to maintain smooth operation of any firm. The required funds can be raised from different sources and many different firms. The available capital and financial resources should be utilized so effectively that it could generate maximum return. However all capital can be classified into two basic types- debt and equity." (Bringham, Gapenski and Ehrhardt, 2001: 579).

"Capital Structure is the permanent financing of the firm represented preliminary by long term debt, preferred stock and common equity, but excluding all the short-term credit" (Western and Bringham, 1978:555).

The capital structure involves long-term loan financing decision or choice between debt and equity capital. Selection of appropriate mix of debt and equity tends to minimize cost of capital and maximize value of the firm or shareholders wealth. The cost of capital and value of the firm varies with changes in capital structure. The cost of capital and capital structure are interrelated and has a joint impact upon the value of the firm.

Capital Structure refers to the combination of long-term sources of funds, such as debentures, long-term debt, preference share capital and equity share capital including reserves and surpluses. Capital structure represents the relationship among different kinds of long-term sources of capital and their amount. Normally, a firm raises long-term capital through the issue of common shares, sometimes accompanied by preference shares. The share capital is often supplemented by debt securities and other long-term borrowed capital. In some cases, the firm accepts deposits. In a going concern, retained earnings or surpluses form a part of capital structure. Except for the common shares, different kinds of external financing i.e., preference shares as well as borrowed capital carry fixed return to the investors.

The capital structure of the firm, defined as the mix of financial instruments use to finance the firm, is simplified to include only long-term interest bearing debt, common stock and preferred stock. "Capital structures is the combination of long-term sources of financing i.e. debt preferred stock and common stock that are used to finance the firm." (Steven and Robert, 1981:348) The nature of capital structure vary from company to company, which is directly guided, regulated and controlled by the management of the company. However, a reasonable satisfactory capital structure can be determined by considering relevant factors and analyzing the impact of alternative financing proposals on the earning per share."(Chandra, 1985:176).

Capital structure refers to the combination of debt and equity capital, which a firm uses to finance its long-term operations. Capital in this context refers to the permanent or long-term financing arrangements of the firm. Debt capital therefore is the firm's long-term borrowings and equity capital is the long-term funds provided by the shareholders, the firm's owners. Capital structure is illustrated in following figure: (MEMENAMIN, 1999:452)
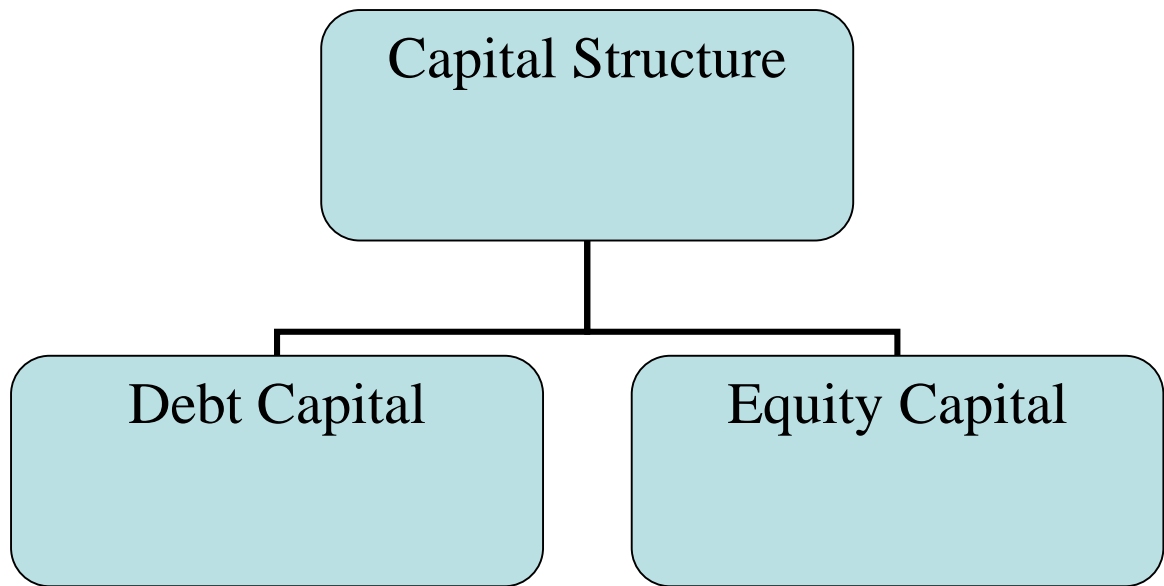
Figure No. 2.1: Combinations of capital structure

Therefore, capital structure can be defined as the combination of long-term source of funds i.e. preference share capital, equity share capital and long-term capital. The capital structure mix affects the total value of the firm, its earnings per share and overall or weighted average cost of capital. It should well plan. It should aim to maximize the value of the firm, earning per share by minimizing the overall cost of capital without affecting the operating earning of the firm. So, firms always tend to maintain the appropriate capital structure, which is advantageous for the firm. A sound or appropriate capital structure should have the following features. (Johnson and Pandey, 1973:45).

1. **Risk**: The use of excessive debt threatens the solvency of the company. To the point debt does not add significance risk it should be used, otherwise its use should be avoided.
2. **Return**: The capital structure of the company should be most advantageous. Subject to other considerations, it should generate maximum returns to the shareholders without adding additional cost to them.
3. **Control**: The capital structure should involve minimum risk of loss of control of the company. The company should use debt to avoid the loss of control. But a very excessive amount of debt can also cause bankruptcy, which means a complete loss of control.
4. **Flexibility:** The company should adapt its capital structure with a minimum cost and delay is warranted by changed situation. The company should be able to raise funds, without undue delay and cost, whenever needed to finance the

profitable investments that's why capital structure of the company should be flexible.

5.   **Capacity:** The capital structure should be determined within the debt capacity of the company, and its capacity should not be exceeded. The debt capacity of the company depends on its ability to generate future cash flows. It should have enough cash to pay creditors' fixed charges and principle sum.

2.1.2. Optimum Capital Structure

The optimal capital structure is the structure or the combination of debt and equity that maximizes the price of the firm's stock. Optimum capital structure maximizes the value of the company or shareholders' wealth and minimizes the company's cost of capital. The value will be maximized or the cost will be minimized when the marginal cost of each source of the funds is same. The optimal capital structure is the combination of debt, preferred stock and common equity that minimizes the weighted average cost of
capital. Optimal capital structure is defined as the combination of debt and equity where the value of the firm's securities or the value of the firm is maximized and which minimize the cost of capital.

"A firm's optimal capital structure is that mix of debt and equity, which specific target capital structure to make presumably the optimal one, although this target may change over time. (Brigham and Houston, 1986:55)."

"An optimal capital structure would be obtained at the combination of debt and equity that maximize the total value of the firm or minimize the weighted average cost of capital.:"Pandey, 675:77)

The optimum capital structure may be defined as the relationship of debt and equity securities that maximizes the value of firm's equity stock. There should be balance between risk and return borne by equity shareholders. The objectives of optimal capital structure are as follows.
➢   Maximize the return on equity capital.
➢   Minimizing the cost of capital.
➢   Maintaining the control power.
➢   Minimize the risk.
➢   Increasing the flexibility.
➢   To employ high-grade securities.

2.1.3 Factors Affecting Capital Structure

Capital structure of a firm is affected by various internal and external factors. These factors are also known as the determinants of capital structure. The macro-economic variables of a country like tax policy, inflation rate, capital market condition are major external factors that affect the capital structure of a firm. The characteristics of an individual firm, which are firm specific, also affect the capital structure of the firm. Hence, financial manager should consider following factors while designing the capital structure of the firm.

1. **Component cost of capital:** Capital structure is the composition of long-term sources of financing viz. long-term debt, preferred stock and common equity. There is cost associated with each source of financing. The component cost of capital comprises using cost of issuing costs. We know that optimal capital structure should be less costly. Therefore, financial manager prefers to use larger amount of less costly component. Generally, cost of debt is less than cost of other sources of long-term financing. Hence, financial manager use significant size of debt capital in capital structure.

2. **Nature and size of the firm:** Nature and size of the firm also influences its capital structure. A public utility firm may employ relatively larger amount of debt as compared to other manufacturing and trading companies. Because a public utility company generally have stable and regular earnings. Similarly, small companies have to depend mainly upon ownership capital because they cannot arrange debt capital easily. But large scale and credit worthy firm can raise debt capital at reasonable rate and terms and use significant amount of debt in their capital structure.

3. **Growth and stability of sales:** Firms whose sales are relatively stable can use higher amount of debt and take higher risk. Stability of sales ensures that the firm will not face any difficulty in meeting its fixed commitments of interest payment. As far as growth is concerned, other things remaining the same, faster growing firms must rely heavily on external capital. Future growth rate of sales is a measure of the extent to which the EPS of a firm likely to be magnified by leverage. The firm is likely to use debt financing with limited fixed charge only when the return on equity is to be magnified. Thus, we can conclude that rapidly growing firms tend to use somewhat more debt than slower growing companies.

4. **Flexibility:** Capital structure of a firm should be flexible i.e., it should be such that it is capable of being adjusted according to the needs of the changing conditions. It should be possible to raise additional funds without much of

difficulty and delay whenever it is needed. A firm should arrange its capital structure in such a manner that it can substitute one form of financing by another. Generally, use of debt and preferred stock increases the flexibility in the capital structure of a firm. Because these sources of financing may have call features, conversion feature and maturity period. Hence, company should use sufficient amount of debt and preferred stock to increase flexibility in its capital structure.

5. **Management attitudes:** The management attitude most directly influences the choice of financing. Aggressive management prefers higher debt ratio to earn higher profit. But some management tends to be more conservative than others and use less debt than the average firm in their industry.

6. **Corporate tax rate:** Companies whose marginal tax rate is high prefer debt financing. Since interest is a tax deductible expense, companies with higher tax are benefited from higher tax shield.

7. **Legal requirements:** A company should also fulfill the legal requirements. The government has also issued certain guidelines for the issue of shares and debentures. Being a legal person, company should design its capital structure within the legal framework.

8. **Control:** If present management wants to maintain existing control power, it should go for debt financing. Issue of new shares in the market may dilute existing shareholders' control power. But large companies whose stock is widely owned may choose additional sales of common stocks because such sales will have little influence on the control of the company.

9. **Period of finance:** The period during which the finances are required is also an important factor to be kept in the mind while selecting an appropriate capital mix. If the finances are required for a limited period say seven years, debentures should be preferred to shares. In vase funds are needed on permanent basis, equity share capital is more appropriate.

10. **Asset structure**: Firms whose assets are suitable as security for loans tend to use more debt. General-purpose assets, which can be used by many businesses, make good collateral, whereas special purpose assets do not. Thus, real estate companies are usually high leveraged, whereas companies involved in technological research employ less debt.

11. **Lender attitudes**: Lender attitudes frequently influence capital structure decision. Lenders emphasize that excessive debt reduces the credit standing of the borrower and the credit rating of the securities previously issued. The corporation discusses its financial structure with lenders and gives much weight to their advice. If management wants to use leverage beyond norms of the industry, lenders may be unwilling to accept such debt increases.

12. **Debt covenants:** Debt covenants (terms of contract) may restrict the company to use excess amount of debt. Indenture mentions such terms and conditions which may affect capital structure decision.

13. **Operating leverage:** There is negative relationship between operating leverage and debt level in capital structure. When company employs higher operating leverage, it should try to reduce financial leverage by reducing level of debt in capital structure. Otherwise, total risk which is measured by degree of combined leverage will be extremely high.

14. **Cash flow stability:** Cash flow stability and debt ratio are directly related. If company's cash flow is stable and regular, it can use larger amount of debt. With a regular cash flow stream, a company can meet its fixed payment of interest and principal without any difficulties. In other words, if firm's cash flow is stable, its debt servicing capacity increases. As a result company can take advantage of leverage using significant amount of debt.

15. **Profitability:** Generally high profitable firms that have very high rates of return on investment do not need to do much debt financing. Their high rates of return enable them to do most of their financing with internally generated funds.

16. **The firm's internal condition:** A firm's own internal condition can also have a bearing on its target capital structure.

17. **Market condition:** Conditions in the stock and bond markets undergo both long and short run changes that can have an important bearing on a firm's optimal capital structure.

Although it is theoretically possible to determine the optimal capital structure, as a practical matter we cannot estimate this structure with precision. Accordingly, financial executive generally treat the optimal capital structure as a range for example: 40 to 50percentage debts rather than as a precise point such as 45 percent (Weston and Brigham,1982; 719).

2.4 Capital Structure Theories

Capital structure of a firm is a mirror in which one can see the actual image of the firm. The study of the leverage cannot be possible without the study of the capital structure. So, the capital structure of a company plays a vital role with regard to leverage. The leverage and the capital structure concepts are closely related linked to cost of capital and capital budgeting decisions.

In fact, the long term debt and equity maintained by the firm for its investment is known as capital structure, where as leverage is the study of fixed charges, i.e. debt and preference share capital, of the firm's capital structure. So, the study of leverage and study of the capital structure are complementary, which is the analysis of proportionate relationship between debt and equity. "However, the capital structure can affect the value of a company by affecting either its expected earnings or cost of capital or both" (Khan and Jain, 1998:488).

As being the crucial in the process of financial decision making, capital structure concept and its effective analysis could be the basis for a company's future. Some companies do not make plan about their capital structure. Because they use to take the financial decisions without the formal planning. They collect the essential capital from different sources but they have to face considerable difficulties in raising fund to operation. Due to this reason, company may bear a loss in the long run. So, the capital structure decisions should be well planned and the financial manager should try to plan the optimal capital structure for a company.

In practice, the determination of capital structure is a necessary and responsible task. As being not an easy task to make the optimal capital structure, capital structure theories help to make the capital structure decision by its detailed study. Capital structure theories are the principles given by some finance experts about the financial decision making process.

The two principal sources of long-term financing are equity and debt capital. The composition of these two long-term financing is known as capital structure. Under normal economic condition, the earning per share can be increased using higher leverage. But leverage also increases the financial risk of shareholders. As a result, it cannot be said whether or not the value of the firm will increase with leverage. In other words, a great deal of controversy has been developed on whether the capital structure of the firm affects the value of the firm or not. Traditionalists argue that the capital structure is relevant factor for valuation of the firm. Further they say value of the firm can be maximized by adopting optimal capital structure. Modigliani and Miller, on the other hand, argue that in perfect capital market, capital structure does not affect value of the firm.

The use of high level of debt capital in the capital structure maximizes the earning per share of shareholders and also increases risk of insolvency. The shareholders will demand a higher rate of return on their investment to compensate for the risk arising out of an additional amount of debt in the capital structure. Introduction of heavy

amount of debt capital in the capital structure reduces the value of the firm and increases the cost of capital. The financial manager should maintain optimum capital structure which can maximize the value of the firm.

The value of the firm and the cost of capital may be affected by the change in the capital structure. Different views have expressed in this context.

The capital structure can be studied in two ways through relevant theory and the irrelevant theory. There are two types of relevant theories, i.e., net income theory and traditional theory. The irrelevant theory is also divided into two approaches, i.e. net operating income approach and Modigliani and Miller's approach. The value of the firm is affected by the capital structure in the relevant theory whereas the value of the firm is not affected by capital structure in irrelevant theory.
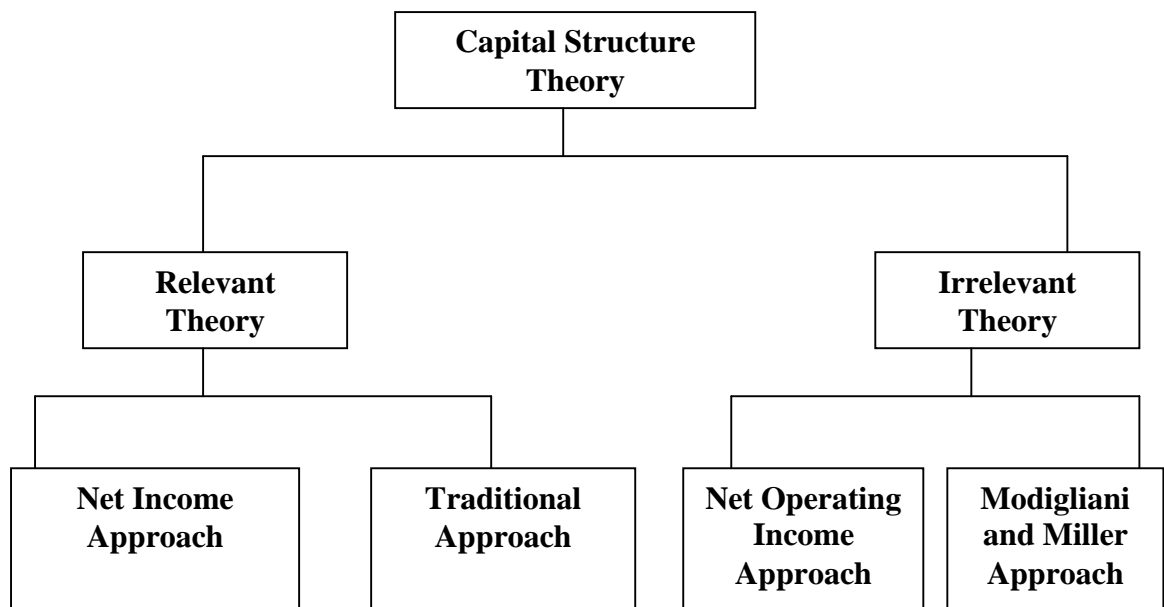
Figure No. 2.2: Theories of capital structure and its approach

Common Assumptions and Definitions

To explain different theories, following assumptions are made:

1. Two types of capital are employed, long-term debt and common stock.
2. The firm's total assets are fixed, but its capital structure can be changed immediately by selling debt to repurchase common stock, or vice-versa. In other words, a change in capital stock is affected immediately. In this regard, we assume no transaction costs.
3. The net operating income (NOI or EBIT) is not expected to grow or decline over time. That is the expected value of probability distribution of expected

operating earnings for all future periods are same as present operating earnings.

4. Investors have the same subjective probability distributions of expected future operating earnings of a given firm.

5. All earnings of the firm are paid out in the form of cash dividends. Thus, we abstract from the dividend decision.

6. There are no personal or corporate taxes and bankruptcy cost.

7. The firm is expected to continue indefinitely.

In addition to these assumptions, the following symbols are employed:

B=total market value of debt

S=total market value of stock (equity)

V=total market value of the firm=B+S

NOI=net operating income=Earnings before interest and taxes (EBIT)

NI=net income

I=total rupees of annual interest

K=overall capitalization rate or marginal cost of capital

K_s=cost of equity capital

K_d=cost of debt capital before taxes

Given these assumptions, the firm's cost of debt is:

Cost of debt (K_d) $= \dfrac{I}{B} = \dfrac{Interest}{Debt}$

While its cost of equity is:

Cost of equity (K_s) $= \dfrac{NI}{S} = \dfrac{NOI-I}{S}$

The cost of capital to the firm is equal to the weighted average of the debt and equity costs where:

Overall cost of capital (K) $= K_d \times \dfrac{B}{V} + K_s \times \dfrac{S}{V}$

The total value of the firm is equal to the combined values of debt and equity, or:

Value of the firm (V) $= B+S = \dfrac{I}{K_d} + \dfrac{NOI-I}{K_s}$

Value of the firm (V) $= \dfrac{EBIT \ or \ NOI}{K}$

These definitions and equations are used in all discussions of capital structure theory. Several theories of capital structure have been proposed but the three main theories are:

1.   The Net Income(NI) Approach
2.   The Net Operating Income (NOI) Approach
3.   The Traditional Approach
4.   Modigliani and Miller (MM) analysis of capital structure shall also be considered.

2.1.4.1. The Net Income (NI) Approach

Net Income Approach focuses the increase in total valuation of the firm through the reduction in the cost of capital leading to increase in the cost of capital leading to an increase in the degree of leverage. It is also known as dependent hypothesis of capital structure. The essence of this approach is that the firm can reduce its cost of capital by using debt. According to I. M. Pandey "The approach is based on the crucial assumption that the use of debt does not change the risk perception of the investors. Consequently,
the interest rate on debt (Kd) and the equity capitalization rate (Ke) remains constant to debt.

Importance of net income approach is that the firm can increase its value or lower the overall cost of capital by increasing the proportion of debt in the capital structure. It supports the traditional theory of capital structure. This theory assumes that the cost of debt and cost of equity remain constant as change in the firm's capital structure.

A change in the capital structure will lead to the corresponding changes in the overall cost of capital as well as total value of the firm. If the firm adds cheaper debt to its capital structure, its cost of capital declines because debt is less risky than equity. On the other hand, the overall value of the firm increases. Thus, if the firm increases its leverage by increasing debt in capital structure, the overall cost of capital will decline which ultimately increases the value of firm.

This approach is developed by David Durand in 1952. According to net income approach, the cost of debt capital and the equity capital remains unchanged when leverage ratio varies. As a result, the weighted average cost of capital declines as the leverage ratio increases. This is because when the leverage ratio increases, the cost of debt, which is lower than the cost of equity, receives a higher weight in calculation of the average cost of capital. Thus, higher leverage results higher value of the firm. The crucial assumptions of this approach are:

1. Change in leverage does not change the risk position/risk perception of investors, as a result, the cost of equity (K_s) and the cost of debt (K_d) remain constant with changes in leverage.
2. Cost of debt (K_d) is less than cost of equity (K_s).
3. Overall cost of capital (K) decreases as leverage increases.

According to the concerned assumption K_s and K_d are constant. Increased use of debt will result in the higher value of the firm via higher value of equity. Consequently, the overall cost of capital, K, will decrease. The overall cost of capital is measured by following formula:

Overall cost of capital (K) $= \dfrac{\text{Net operating income}}{\text{Total value of the firm}} = \dfrac{\text{EBIT}}{V}$

The overall cost of capital can also be measured by using the following equation:

$$K = K_s - (K_s - K_d) \times \dfrac{B}{V}$$

As per assumptions of NI Approach, K_s and K_d are consistent and K_d is less than K_s. Therefore, K will decrease as B/V increase. It also implies that overall cost of capital, K, will be equal to K_s if the firm does not employ any debt. The effects of leverage on the cost of capital under NI approach can be shown by the following figure:
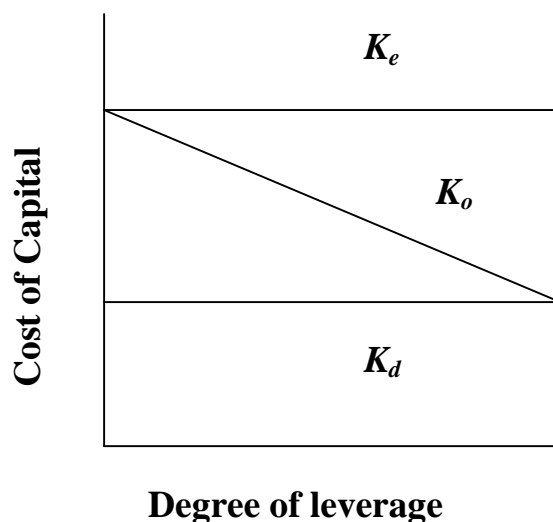
Figure No. 2.3: The effect of leverage on Cost of capital under NI approach
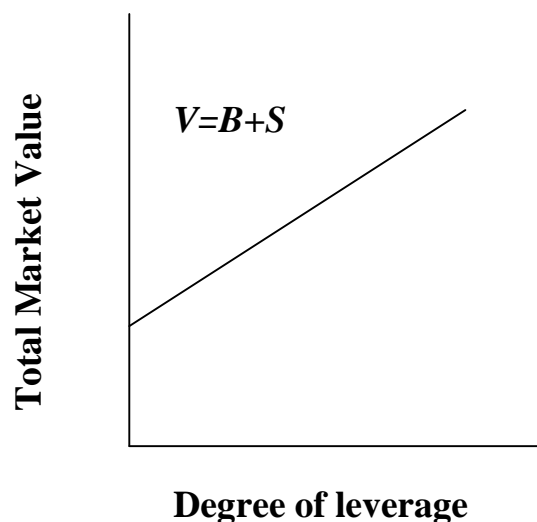
Figure No. 2.4: The market value under NI approach

In the above figures, the degree of financial leverage is shown in the horizontal axis and cost of capital (K and K_d) in the vertical axis. Under NI approach K_e and K_d are assumed not to change with leverage. As the portion of debt is increased in the capitals structure, it causes weighted average cost of capital to decrease and approach to cost of debt. The optimal capital would occur at the point where the value of the firm is maximum and overall cost of capital is minimum. Under this approach, the firm will have a maximum value and lower cost of capital when it is almost debt financing.
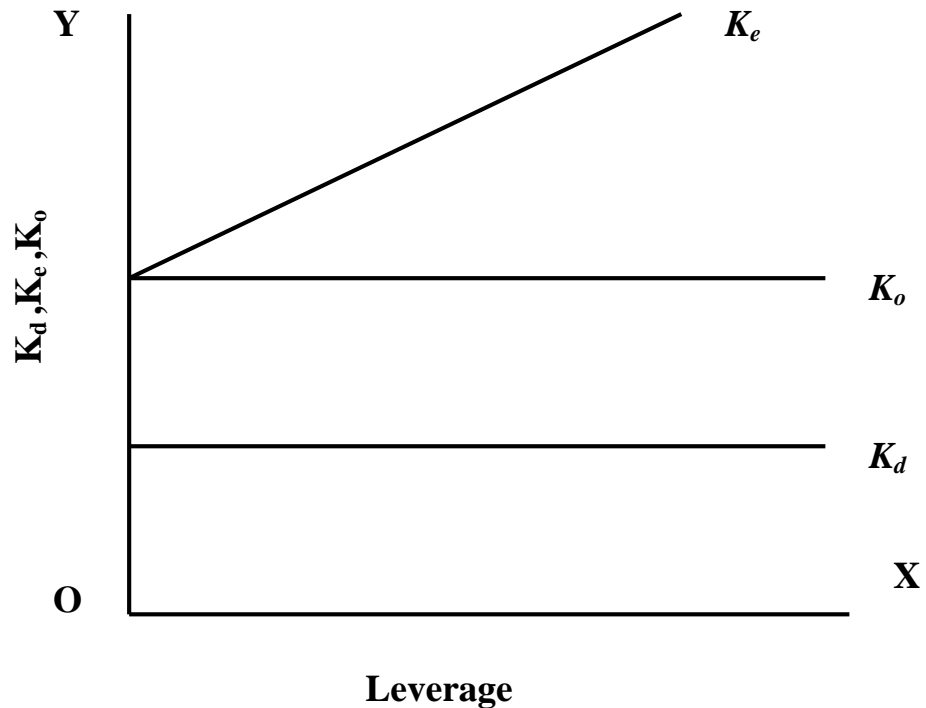
2.1.4.2. The Net Operating Income (NOI) Approach

This approach is also developed by David Durand in 1952. In this approach, net operating income is capitalized at an overall capitalization rate to obtain the total market value of the firm. As EBIT and overall capitalization rate remain constant, capital structure does not affect the market value of the firm. Market value of the equity is computed after deducting market value of debt from total market value of the firm. Note that in the net operating income approach the overall capitalization rate and the cost of debt remain constant for all degrees of leverage. The required return on equity increases linearly with financial leverage.

Net operating income approach is the approach to the valuation of the earnings of a company. It is an irrelevant theory and it is just opposite of net income approach. According to this theory, the market value of the firm is not affected by the changing capital structure. The changes in leverage will not lead to any change in total value of the firm and market price of the share as well as overall cost of capital is independent of the degree of leverage.

The increase of debt capital in the capital structure does not affect the market price of the share and overall cost of capital. The increase in debt may be the reason for repurchase of share and is offset by the decrease in equity capital. Similarly the increase in equity capital may be the reason to write off the debt capital and is offset by the decrease in debt capital. Hence the total capital structure remains the same.

So far the explanation of the net operating income approach has been purely definitional and it lacks behavioral significance. In this theory, market value of the firm can be calculated by capitalizing the net operating income at the overall cost of capital.

Figure No. 2.5: The effect of leverage on cost of capital under NOI approach

Assumptions of this approach are:

1. The market uses an overall capitalization rate, K, to capitalize the net operating income, K depends on the business risk. If the business risk is assumed to remain unchanged K is a constant.

2. Debt capitalization rate, K_d, remains constant regardless of the degree of leverage.

3. The use of less costly debt funds increases the risk of shareholders. This causes the equity-capitalization rate to increase. Thus, the advantage of debt is offset exactly by the increase in the equity capitalization rate, K_s.

4. Market value of equity is the residual value.

5. The market capitalizes the value of the firm thus the split between debt and equity is not important.

6. This approach implies that there is no one optimal capital structure.

2.1.4.3. Traditional Approach

This traditional approach is also developed by David Durand in 1952. The traditional capital structure theory, which is taken as middle ground position is also known as an intermediate approach. It is a compromise between the NI and NOI. According to traditional view, which suggested that up to some moderate amount of leverage risk, does not increases noticeably on either the debt or equity. So, both K_d and K_s are

relatively constant up to some point of leverage. However, beyond this threshold debt ratio, both debt and equity costs begin to rise sharply, and this increases more than offset the advantages of cheaper debt. The result is (i) a 'U' shaped weighted average cost of capital curve and (ii) a value of the firm which first rises, then hits a peak, and finally declines as the debt ratio increases. Thus, according to the traditionalists, there are some capital structures with less than hundred percent debts which maximize the value of the firm.

The main propositions of the traditional approach are:

1. The cost of debt capital, K_d, remains more or less constant up to a certain degree of leverage but rises thereafter at an increasing rate.

2. The cost of equity capital, K_s, remains more or less constant or rises only gradually up to a certain degree of leverage and rises sharply thereafter.

3. The average cost of capital, K, as a consequence of the above behavior of K_s and K_d (a) decreases up to a certain point (b) remain more or less unchanged for moderate increases in leverage thereafter and (c) rises beyond a certain point.

The traditional approach is also known as an intermediate approach compromise between the NI approach and NOI approach. This approach says that the value of the firm can be increased or the judicious mix of debt and equity can reduce cost of capital. In addition, the cost of capital decreases with in the reasonable limit of debt and then increase with leverage. Thus an optimal capital structure exists when the cost of capital is minimal or the value of the firm is maximum.

According to I. M. Pandey, "The more sophisticated version of the net income approach is contained in the traditional view. According to this approach, the value of the firm can be increased or the cost of capital can be reduced by a judicious mix of debt and equity capital" (Pandey, 1999:30).

"The statement that the debt funds are cheaper than the equity capital carries the clear implication that the cost of debt plus the increase cost of equity together on a weighted basis, will be less than the cost of equity which existed on equity before debt financing" (Alexander, 1963: 11). So, traditional position implies that the cost of capital is not independent of the capital structure and that there is an optimal capital structure.

According to the traditional position, the manner in which the overall cost of capital reacts to changes in capital structure can be dividend into three stages. (Soloman, 1963:94).

2.1.4.3.1. First Stage: (Increasing value)

First stage of the traditional approach starts with the total capital at which the shareholders capitalize their net income. In this stage, the cost of equity, K_s, remain constant or rise slightly with debt. But when it increases, it does not increase fast enough to offset the advantages low cost debt. During this stage, the cost of debt, K_d, remains constant or raises negligibly since the market views the use of debt as reasonable policy. As a result, the value of firm increase or overall cost of capital falls with increasing leverage.

2.1.4.3.2. Second Stage: (Optimal Value)

In this stage, once the firm has reached a certain degree of leverage, increases in leverage have a negligible effect on the value, or the cost of capital of the firm. This is so, because this increases in the cost of equity due to added financial risk that offsets the advantage of low cost of debt. Within the range or at a specific point, the value of the firm will be maximized or cost of capital will be minimum.

2.1.4.3.3. Third Stage: (Declining Value)

In this stage, after the accepted degree of leverage, the market value of the firm decreases with leverage or overall cost of capital increases with leverage. This happens because investors perceive a high degree of financial risk and demand a high equity capitalization rate, which offsets the advantage of low cost debt. In this stage, the cost of debt and equity will tend to rise as a result of increasing the degree of financial risk that will make an increase in the overall cost of capital.

The overall effect of these three stages is to suggest that the cost of capital is the function of leverage. First it declines with leverage and after reaching a minimum point or range, it starts rising. The relationship between cost of capital and leverage can be shown graphically as under:
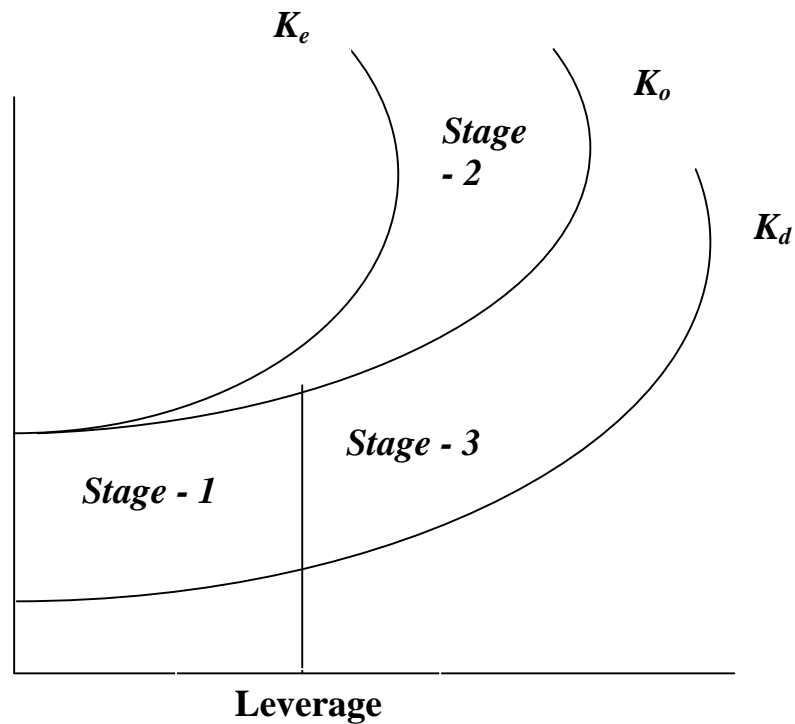
Figure No. 2.6: Effect of leverage on cost of capital under traditional approach

In the above figure, it is assumed that K_s rises at an increasing rate with leverage, whereas K_d assumed to rise only after significant leverage has occurred. At first, the weighted cost of capital, K, declines with leverage because the rise in K_s does not entirely offset the use of cheaper debt funds. As a result, K declines with moderate use of leverage. After a point, however, the increase in K_s more than offset the use of cheaper debt funds in the capital structure, and K begins to rise. The rise in K is supported further once K_d begins to rise. The optimal capital structure is point X. thus the traditional position implies that the cost of capital is not independent of capital structure of the firm and that there is an optimal capital structure.

2.1.4.4. The Modigliani-Miller Model

Modigliani-Miller is an irrelevant theory and it tells that the value of the firm does not change by simply changing the capital structure or leverage. It is identical to the net operating income approach but it is somewhat vast than the NOI approach. There is the lack of conceptual and behavioral significance in NOI approach. But M-M approach supports the NOI approach relating to the independence of the cost of the degree of leverage at any level of debt-equity ratio (Khan and Jain, 1998:11-11).

Until 1958, capital structure theory considered the loose assertions about investors rather than carefully constructed model, which could test by formal statistical analysis. In what has been called the most influential setoff financial paper ever published, Franco Modigliani and Merton Miller (MM) addressed capital structure in a rigorous, scientific fashion, and they setoff a chain of research that continues to this day. (Bringham,Gapenski and Ehrhardt, 2001:622).

M-M approach is significant because it provides the behavioral justification for constant overall cost and total value of the firm. Modigliani and Miller advocated that the relationship between leverage and the cost of capital is explained by the net operating income approach.

Franco Modigliani and Merton Miller (generally referred to as MM) both Nobel price winners in financial economics, have had a profound influence on capital structure theory ever since their seminal paper on capital structure was published in 1958. The Modigliani Miller hypothesis is identical with net income approach. In other words, MM have restated and amplified the NOI approach. MM argue that, in the absence of taxes, a firm's market value and the cost of capital remain invariant to the capital structure changes. In their article, they provide analytical sound and logically consistent behavior justification in favor of their hypothesis. To begin, MM made the following assumptions, some of which they later relaxed:

1. **Perfect capital markets.** Information is costless and readily available to all investors; no transaction costs or government restrictions interfere with capital market transactions; and all securities are infinitely divisible. In addition, both firms and individuals can borrow or lend at the same rate.

2. **Homogeneous expectations.** All present and prospective investors have identical estimates of expected value of the probability distribution for each firm's future EBIT.

3. **Homogeneous or equivalent return classes of firms.** Firms can be classified based on their degree of business risk. Since all firms within a class are equally risky, their expected future earnings are capitalized at the same rate. (This assumption is later relaxed.)

4. **No taxes.** There are no taxes on either corporations or individuals. (This assumption is later relaxed.)

MM first performed their analysis under the assumption that there are no corporate taxes. Based on the preceding assumptions, and in the absence of corporate taxes, MM stated and proved two propositions:

Proposition 1: The value of any firm is established by capitalizing its expected net operating income (NOI or EBIT) at a constant rate (i.e. overall cost of capital) which is appropriate for the firm's risk class.

$$V = \frac{EBIT}{K} = \frac{EBIT}{K_{s(U)}}$$

Here $K_{s(U)}$ is the required rate of return for an all equity (unlevered firm). Since V as established by proposition 1equation is constant, then the MM theory the value of the firm is independent of its leverage. This also implies that the weighted averaged cost of capital (K) to any firm, leveraged or not, is (1) completed independent of its capital structure (2) equal to the cost of equity to an unlevered firm in the same risk class. Thus, MM's proposition 1is identical to the NOI hypothesis.

Proof: MM use an arbitrage proof to support their propositions. The support for the hypothesis is the arbitrage process. The term arbitrage, as used by MM, refers to the simultaneous buy and sell process investors would enter into if they saw two identical firms selling at different prices because of differences in their capital structures.

2.1.4.5. Arbitrage Process

Capital structure changes are not the thing of value in the perfect capital market world that Modigliani and Miler assume. Therefore two firms alike in every respect except capital structure must have the same total value. If not, arbitrage will be possible, and its occurrence will cause the two firms to sell in the market at the same title value. Hence arbitrage will drive the total values of the two firms together.

The total value of the levered firm cannot be greater than the total value of the unlevered firm and the value of the unlevered firm because the arbitrage process sets the value differentiation to the identical level. The investors can sell the shares of the levered firm to the shares of the levered firm due to smaller investment outlay and lesser financial risk.

Hence the value of the levered firm increases and value of the unlevered firm gradually decreases to equalize the value of both of the firms, especially in the case when the value of the levered firm is higher and vice-versa.

2.1.5. Theory of Cost of Capital

"The cost of capital is an important in formulating a firm's capital structure. It is one of the basis corner stones of the theory of financing management". (Kuchhal, 1982:367). It is a crucial part of a dynamic or ever changing financing and operational environment of the corporations.

There are different types of risks associated with each investment category. Therefore, it requires certain expected rate of return in order to provide funds. This required rate of return is called the opportunity cost to the investor for investing his scarce resources elsewhere with equivalent risk. Therefore, the concept of cost of capital has been paid increasing attention in recent years, especially as it affects the proper economic is an essential choice criterion for investment decision-making, accordingly, the theory of measurement of cost of capital is of fundamental importance in business finance.

An investment projects for its acceptance must earn minimum rate of return equal to the cost of capital. In this sense, the cost of capital represents a standard for allocating the firm's fund in the optimal manner. In theory, it is the rate of return on a project on a project that will leave the market value of shares unchanged" (Van Horne, 1994:101).

In Nepal, majority of corporations are still not in a position to meet the minimum required rate of return. Many corporations are running at losses and corporations running at profit could also not maintain rate which a project must earn in order to be acceptable to shareholders" (Weston and Copland, 1990:72).

Cost of capital can be understood as cut off rate concept. It is a point for the choice of investment proposals in corporations. "From the view point of the capital allocation budget as a whole, the cost of capital provides an objective cut off point for appropriations" (Soloman, 1996:30). The term cost of capital can also be defined in terms of hurdle rate concept and structural concept. The hurdle rate is the target rate of return, which must be surpassed of the capital use, is to be justified. Corporations while using the investment hurdle rate are communicating their expectations and assure common effort to try to fulfill those expectations. Allowance must be made for the risks and uncertainties surrounding the follows, since investors insist on higher expected returns when asked to assume higher level of risks.

One of the requirement of the investment appraisal system is that prevent the investment of funds in projects where the target rate of return is less than the cost of capital. In the context of Nepalese company, the determination of this "hurdle rate' is not so much in practice but time and situation have already made corporate managers to be cautions and attentive in practicing this "hurdle". The structural concept is the fundamental and mostly accepted criteria of investment appraisal system. The cost of capital is the extent of capital fund that could be made available through combinations of ownership capital, retained earnings, depreciation funds, reserves and so on. Funds

that could be made available might be from the existing stock of funds or raised freshly from the market, or could be by way of commitment into the future. It is therefore, necessary that the company's using borrowed capital should be capable of generating liquid fund to meet the interest obligations.

2.1.5.1. Importance of Cost of Capital

The cost of capital is an important element as basic information in capital investment decisions. The cost of capital concept is significant not only as an investment criterion but can also be used to evaluate the financial performance of top management.

The study on the cost of capital is significant for different purposes. The first one may be to determine the desirability of alternative investments and the second is to serve as a capitalization rate to establish the present value of cash streams. The significance of the concept of cost of capital can be explained through following points.

2.1.5.2. Capital Expenditure Decisions

Capital expenditure decisions are also called as capital budgeting decisions. The cost of capital, in these decisions is often used as a discount rate on the basis of which the future cash flows of the firms are discounted to find out their present values. It provides a yardstick to measure worth of investment proposals and thus, performs the role of accept-reject criterion. In fact, it provides a rational mechanism for making optimum investment decision, cost of capital forms the basis of financial appraisal of all capital expenditure
proposals. Needles to mention, the decision in respect of a capital expenditure would be irrational and wrong, if the cost of capital is not correctly determined. This is because the business must earn at least at a rate, which equals to its cost of capital in order to make at least breakeven.

2.1.5.3. Capital Structure Decisions

Capital structure decision is one of the most important decisions that are taken by financial manager. It is because the capital structure decision affects weighted average cost of capital (WACC), value of the firm and risk position of the firm. A firm, therefore, should try to find out the structure, which minimizes the WACC and risk and maximizes the value of the firm. The optimal capital structure is the combination of debt, preferred stock and common equity that minimizes the WACC. At the capital structure where the WACC is minimized, the value of firm's securities (or value of the firm) is maximized. Hence, the minimum cost of capital structure is called optimal capital structure.

The amount of debt contained in a firm's optimal capital structure is often referred to as the firm's debt capacity. The debt capacity of a firm is determined by various factors including business risk, the tax structure, the extent of potential financial distress, agency cost etc.

The cost of capital is also an important consideration in capital structure decisions. The cost of capital is influenced by the capital structure changes. The finance manager must raise capital from different sources in such way that it optimizes the risk and cost factors.

The sources of funds, which have less cost, involve high risk. "In trying to achieve its target capital structure over time, a firm should aim at minimizing the market value of the firm"(Pandey, 1987:163).

It is absolutely necessary that cost of each source of fund is carefully considered and compared with risk involved with it. Thus, the significant of the concept of cost of capital can be known in designing the firm's capital structure.

Impact of Capital Structure Decision

Firms employ debt in its capital structure to increase the return to common stockholders. These increased returns are achieved at the expense of increased risk. Thus capital structure affects stockholders' return and risk. When company uses larger amount of debt, stockholders' return and risk increases. In other words, capital structure (debt ratio) and stockholders' return and risk are directly related.

2.1.5.4. Element of Cost of Capital

It is necessary to analyze the cost of specific sources in order to show the basic inputs for determining the overall cost of capital. "The computed value for the cost of capital can be regarded as a fair approximation of the cost of capital inputs consistent with company needs, the conditions under which it is raising its capital, the level of expectation and corporate policy constraints" (Kuchhal, 1982:368).

A company may use more than one type of capital. In this situation, the company's composite cost of capital can be determined after the cost of each type of funds has been obtained. The first step, therefore in the measurement of a company's cost of capital is the calculations of each specific cost which is the minimum financial obligations that is incurred in order to secure the use of capital from a particular

source. This section describes the procedures for measuring the costs of specific sources.

2.1.5.5. Cost of Debt

A debt is a long-term obligation and simultaneously a promise to pay the face amount or principal at a designed date of maturity and to pay interest at a specified rate periodically. It is a contrast made between the corporation and a third party, the trustee, to whom the references is made in the debt contract.

Normally, debt arrangements involve specific interest provisions payable either during the debt period at the end or deducted in advance from the principal. The explicit cost of debt in those cases is simply the cost of this interest commitment.

The formula of cost of debt is:

Cost of Debt = $\dfrac{\text{Interest}}{\text{Principal}}$

The cost of debt is defined as the yield (internal rate of return) of the stream of contractual cash flows associated with the debt from the viewpoint of the firm. At the time of issuance, the cost of debt is determined by the cash receive and contractual cash payment to be made over the time until the debt is retired. We assume zero taxes.

The cost of debt paying an interest rate of "K" per period (the amount of the interest to be paid is K_b) currently selling at a price of B_o. Letting K_d denote the implicit cost or yield to maturity of debt (the internal rate of years until maturity). The cost of debt is defined as the rate of discount that equates the present value of the cash flows associated with the future debt payments to the current market value of the debt that is K_d is such that:

$$B_o = \frac{K_b}{(1+K_d)} + \frac{Bn}{(1+K_d)}$$

The cost of debt must be stated on an after tax basis and since interest charges are tax deductible, a tax adjustment is required. The before tax cost of debt K_d can be converted to an after tax debt, K_i, by the following equation:

$K_i = K_d (1-t)$

Here t represents the firm's marginal tax rate.

2.1.5.6. Cost of Preferred Stock

Preferred stock is a hybrid form of capital possessing a mixture of debt and common stock characteristics. Preferred stock generally has a perpetual life, although it may have a call price specified and even a sinking fund where the stock is to be repurchased by the firm in the open market. The holders of a corporation's preferred stock get their dividends only if declared by its board of directors.

The cost of preferred stock is a discount rate, which equalizes the future expected dividends to the present market price. If the preferred stock is callable then the discount rate equated the future expected dividends to the call price.

Cost of preferred stock is calculated from the following equation:

$$P_o = \frac{D}{K_p}$$

Where:

P_o = Current price of share / net proceed received from the sale of preferred stock issue.

D = Annual constant dividend payment.

K_p = Cost of preferred stock.

Solving the above equation for K_p:

$$K_p = \frac{D}{P_o}$$

Here the dividend is assumed to be perpetuity with first payment one year from now.

2.1.5.7. Cost of Common Stock/Equity Capital

Like other source of capital, common stock of equity capital also involves certain cost to the firm. The equity shares involve a return in terms of the dividend expected by the shareholders. "The rates, at which the expected dividends are discounted to determine by their present value, represent the cost of common stock" (Gitman, 1982:456).

The cost of equity capital is the rate of discount that equates the present value of all future expected dividends per share to the present price of common stock. It is the return required by the investors.

The cost of common stock or equity capital is the minimum rate that must be earned by the common stockholders to keep the value of existing equity unchanged. "The cost of equity capital, Ke, may be defined as the minimum rate of return that a firm

must earn on a equity financed portion of an investment project in order to leave unchanged the market price of shares (Van Horne, 1994:93).

"The cost of equity capital indicated the minimum rate which must be obtained on the projects before their acceptance and the raising the equity capital to finance them i.e., it should lead to an increase in the net present value of their wealth" (Kuchhal,1982:370). The definitions of cost of equity capital are based on a few key assumptions with respect to the behavior of individuals and their ability to forecast future values (Gitman, 1982:456 457).

2.1.5.8. Cost of New Issues of Common Stock

New issue of shares is influenced by floatation costs. Flotation costs may consist of underwriting fees. Under the dividend valuation model, the floatation costs reduce the net proceeds from the sale of common stock. "If we left represent the percentage reduction in the current market price expected as a result of under pricing and underwriting charges on a new stock issue, the cost of new stock issues, the cost of new issue K_n can be expressed as follows:

$$K_n = \frac{D_1}{(1-f)} \quad P_o + g$$

The floatation costs, as a percentage of the gross proceeds would reduce the denominator in the dividend yield expression by a factor of (1-f), where f represents the equity floatation cost percentage.

The minimum rate of return, which is required on the new investment financed by the new issue of common shares, to keep the market value of the share unchanged is the cost of new issue of common shares (or external equity).

2.1.5.9. Cost of Retained Earnings

A firm does not distribute its entire profit to the shareholders but a portion of earned profits is retained in the business for the future expansion of the business. This retained profit is internal source of funds for the company. The retained earnings of the corporation have also costs in the form of opportunity cost involved in the alternative investments. If the retained earnings could not be utilized, the shareholders feel that the company cannot do anything in accelerating their rate of return.

"The cost of retained earnings must be viewed as the opportunity cost of the forgone dividend to the existing common shareholders" (Gitman, 1982:461).

In the absence of floatation costs of the new issue, Ks = k. Here, Kr denotes the cost of retained earnings. The cost of retained earnings is calculated in the same way as the common stock capital. The company, under this method determines the opportunity cost of retained earnings, which can be obtained on external investment of funds so that rises per share remain unchanged. The formula for determining cost of retained earnings is given below:

$$K_r = \frac{D}{P_o + g}$$

Where, Kr = cost of retained earnings

2.1.5.10. Overall or Weighted Average Cost of Capital (WACC)

Measuring of cost of capital is necessary after the calculation of various elements of cost. The composition or overall cost of capital is the weighted average cost of various sources of funds, weights being the proportion of each source of funds in the capital structure.

The cost of capital is found by weighting of the cost of each component of capital structure by their relative portion. It is to sum the separate cost of debt, preferred stock and common stock. The cost of each component is weighted by the proportions and each source is expected to have in future financing.

"A firm's cost of capital is the weighted arithmetic average of the cost of various sources of long term financed used to it" (Chandra, 1990:448). "The overall composite cost of each specific type of funds" (Khan and Jain, 1992:339). It is the average representing the expected return on all of a company's securities. Each source of capital such as stocks, bonds and other debt is weighted in the calculation according to its promises in the company's capital structure.

Assignment of Weights can be done in following ways.
1. Book Value Vs Market Value Weights
2. Historical Vs Marginal Weights.

1. Book Value Vs Market Value Weights

Book Value weights use book values or accounting values of capital for the assessment of the proportion of each type of capital whereas market value weights use its market value weights use its market value to measure the proportion. It is said that the use of market value weights for calculating the cost of capital is more appealing than the use of book weights because (Khan and Jain, 1992:342).

➢   Market value of securities closely approximates the actual amount to be received from their sale.

➢   The cost of the specific sources of finance, which constitute the capital structure if the firms are calculated using prevailing market prices. Since the sources of long term funds have higher specific cost of capital normally increases when instead of book value weights are used.

2. Historical Vs Marginal Weights

Historical Weights are based on the actual data. It can be book value weight or market value weight. Marginal weights are related with the actual amount of each type of financing to be used in raising new funds by the company. The use of it involves weighting the specific costs by the proportion of each fund to be raised.

As observed above, alignment of weights can be done in different ways. The question that which system or market value weight in appropriate or preferable for the calculation of weighted average cost of capital is very difficult to answer. "The critical assumption in any weighting system is the firm will raise capital in the specific proportion" (Khan and Jain, 1992:339).

2.1.5.11. Computation of Weighted Average Cost of Capital

Weighted Average cost of capital, WACC in short which measures the quality in investment. A firm's WACC is the overall required return on the firm as a whole. It is the appropriate discount rate to use cash flows in risk to the overall firm.

Once the component costs have been calculated, the weighted average method computing a firm's cost of capital is found by weighting the cost of each component of capital structure by the relative proportion of that source of funds to the total. The composite or overall cost of capital is the weighted sources of funds, weighted sources of funds, weight being the proportion of each source of fund in the capital structure.

If the firm uses debt, preferences share capital and equity share capital in its capital structure, and then its weighted average cost of capital is given by:

$K_o = K_i W_d + K_p W_p + K_e W_e$

Where,

K_o = Overall cost of capital

K_i = After tax cost of debt

K_e = Cost of equity

W_d = Proportion of debt to total capital

W_p = Proportion of preference share capital to total capital

W_e = Proportion of equity share capital

2.1.5.12. Marginal Weight Cost of Capital

Some limitations are found while calculating overall cost of capital using weighted average method. "The weighted average cost of capital losses its validity when corporations are considering significant change in its debt policy, dividend policy subject to readjustment of the proportion of earning to be retained objectives and capital structure involving variation in debt equity mix" (Soloman, 1996:27).

Marginal cost of capital is the cost required for raising an additional rupee of capital. "The weighted is the average cost of new or incremental capital which is known as the marginal cost of capital"(Pandey, 1987:183). The marginal cost changes proportion of various capital components. The corporations have to change weights equity and debt and according to the profitability to each source of fund.

2.1.6 Ratio Analysis

Financial manager of the company has to engage in making lots of decisions. He has to analyze the financial statements to find the financial sources, strengths and weaknesses of the company to make the decisions and to make future strategy.

Ratio analysis is that tool which is used to analyze the financial statements. A widely used tool for the financial analysis is ratio analysis. It is defined as the systemic use of ratio to interpret the financial statements so that the strengths and weaknesses of a firm as well as its historical performance and current financial condition can be determined (Khan and Jain, 1998:117). By the use of it, the financial manager can find out the weaknesses of the company and take action to erase them out by making the rational decision. Hence ratio analysis helps to inform about the present situation of the firm and the corrective action to be undertaken for eliminating the problems.

The outsider investors also use ratio analysis to know about the financial surroundings of the company for the confirmation of their risk and return. This tool is also used to take the decision of the new investment or expansion of the firm by raising the extra or new sources of fund. In this way the capital structure is affected. And it is tried to make the balanced capital structure according to the analytical results from the ratio analysis. In order to bargain more effectively for outside funds, the management of a firm should interested in all aspects of financial analysis that outside supplier of capital use it in evaluating the firm (Khan and Jain, 1998: 117). So it can be said that the ratio analysis is one of the tools of the company in making capital structure decision.

The term 'ratio' means the relative and quotient of two mathematical expressions. They are of various types:

➢ Liquidity ratio
➢ Leverage ratio
➢ Profitability ratio
➢ Activity ratio

2.1.6.1 Liquidity Ratio

The firm has various types of obligations. Some of them are of short-term nature. Hence, the firm may need to meet them immediately or within the short time interval. Hence, it is essential for the firm to meet its obligations when they become due. It is used to measure the firm's ability to meet the short-term obligations and reflect the short-term financial solvency of the company. It is the means to test the liquidity position of the company or firm by calculating current, quick and turnover ratios.

2.1.6.1.1 Current Ratio

The current ratio is the most commonly used measure of short term solvency, since it indicates the extent to which the claims of short-term creditors are accepted to convert into costs in a period roughly corresponding to the maturity of time (Weston and Brigham, 1982: 566). The current ratio can be calculated by dividing the current assets by current liabilities. Current assets normally include cash, marketable securities, accounts receivable, inventories, prepaid expenses etc. Whereas the current liabilities include account payable, current maturity of long-term debt, accrued expenses and short-term notes payable. The current ratio measures the firm's current position, which should be sufficient to cover the current liabilities used by the firm.

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

2.1.6.1.2 Acid Test Ratio or Quick Ratio

The quick ratio scrutinizes the liquidity position of the firm and is calculated by dividing the current assets without the inventories and prepaid expenses by the current liabilities.

In the quick ratio, the assets which have the nature of immediate conversion into cash as per the company's need are used and are said to be the quick assets. Inventories and prepaid expenses are less liquid because they take the time to convert themselves into cash.

Acid Test Ratio = $\dfrac{\text{Current Assets- Inventories- Prepaid Expenses}}{\text{Current Liabilities}}$
or Quick Ratio

2.1.6.2 Leverage Ratio/ Capital Structure Ratio/ Solvency Ratio

The leverage ratio is one of the best ways to study the capital structure of the firm and utilities and appropriations of the sources of capital in the structure and leverage position of the firm. It also throws light on the periodic payment of interest during the period of loan and repayment of principal on maturity. With this ratio, the solvency position of the firm can be examined. So the firm should give first preference to the leverage ratios with comparison to another ratio analysis when the company is going to make a capital structure.

2.1.6.2.1 Debt Equity Ratio

Debt equity ratio is the relationship between borrowed fund, i.e., debt and owner's capital. The owner's capital includes equity capital, reserve, surplus, accumulated losses, discount in issue of share, preference share capital. The debt capital includes long-term debt. Since the shareholders' equity is said to be net worth, the debt equity ratio is also called debt to net worth.

Debt Equity Ratio (D/E Ratio) = $\dfrac{\text{Long-term Debt (LTD)}}{\text{Shareholder's Equity}}$

It determines the financial structure of the firm. It also reflects the firm's policy about the capital structure to make it balanced and sound, D/E ratio helps to make the proper financial structure with effective sources of fund.

Higher the D/E ratio indicates the higher proportion of debt in the capital structure of the firm, which is the dangerous signal for the debt holders and the firm's risk-taking behavior. Hence, D/E ratio suggests an appropriate proportion of debt and equity. It can also be calculated by taking the relationship between the total debt and shareholders' equity.

$$\text{D/E Ratio} = \frac{\text{Total Debt}}{\text{Shareholder's Equity}}$$

Here, total debt includes long term debt and current liabilities.

2.1.6.2.2 Debt to Total Capital Ratio

The relationship between the debt holders and the equity shareholders can be expressed in various ways in the ratio form. One of the ways of expressing it in ratio form is debt to total capital ratio. It is the expression of the relationship measurement between long-term debt and total capital.

$$\text{Debt to Total Capital} = \frac{\text{Long-term Debt}}{\text{Total Capital}}$$

This relationship gives about the information of the proportion of debt in the capital structure of the firm. That is the indication of the magnitude of the risk-taking nature of the company.

If the ratio between them is 1:1, that indicates 50% of the debt in the total capital structure and rest of all its ownership capital. The ratio more than 1:1 is the risky situation for the firm.

2.1.6.2.3 Coverage Ratio

There is the use of various types of capital in the capital structure of the firm. For this, the firm needs to pay interest on debt and dividend in preference share. These are the fixed obligation. So, the company's ability to service the claims of the investors should be examined. This can be possible by the ratio, which is called the coverage ratio. The coverage ratio measures the relationship between what is normally available from the operations of the firm and the claims of the outsiders (Khan and Jain, 1998:135). There are various coverage ratios but only two types of coverage ratios can be considered for this purpose.

(i) Interest Coverage Ratio

This ratio is computed by dividing the operating profit by the interest on the long term debt.

$$\text{Interest Coverage Ratio} = \frac{\text{EBIT}}{\text{Interest}}$$

Where,

$$\text{EBIT} = \frac{\text{Earning Before Interest and Tax}}{\text{Operating Profit}}$$

Hence, this ratio gives the debt servicing capacity of the firm. Higher ratio is desired.

(ii) Dividend Coverage Ratio

Dividend coverage ratio is the numerical expression of the firm's ability to pay the preference dividend to the preference shareholders, when the source of capital is preference dividend. Higher the ratio better is the tendency of the firm to make its capital structure by including the preference share capital.

$$\text{Dividend Coverage Ratio} = \frac{\text{EAT}}{\text{Preference Dividend}}$$

2.1.6.3 Profitability Ratio

Although the firm has the social responsibilities, it can be possible only when the firm earns the maximum profit. Hence the profit is all in all for the firm for its real existence. The company designs the capital structure which gives the maximum profit under the various circumstances set by the government. Because of the profit is needed for the payment of interest to the debt holders. It is also required for the return to shareholders as well as for the preference shareholders. The operating expenses should also be covered by the profit earned through the selling of goods and services. The firm has also its responsibilities towards the society. Hence profit is the main objective of the firm to meet all of these requirements.

Hence the profit should be measured to make its balanced capital structure alive and this can be getting by the profitability ratios. Hence the profitability ratios are the major instruments for measuring the profit of the firm to make the sound policy. The most important profitability ratios are as follows:

a. Gross Profit Margin

Profit can be earned through sales and hence the profitability ratios are based on the sales. So, gross profit margin in the management of gross profit to meet the indirect expenses and cost of the capital. It can be calculated by dividing the gross profit by the sales.

$$\text{Gross Profit Margin} = \frac{\text{Gross Profit}}{\text{Sales}} \times 100\%$$

b. Net Profit Margin

Net profit margin can be calculated by dividing the net profit by sales. This ratio measures the propensity of the firm to meet the expected returns to the owners of the firm. Higher the ratio, higher is the firm's ability to meet the obligation of cost of manufacture, operating expenses, depreciation, interest on debt, preference dividend on preference share. Hence, it indicates the sound profitability condition of the firm and higher returns to the shareholders.

c. Operating Expenses Ratio

Operating expenses ratio gives the information about the operating expenses of the firm with respect to sales and can be computed by dividing the operating expenses by sales low ratio is desired.

$$\text{Operating Expenses Ratio} = \frac{\text{Operating Expenses}}{\text{Sales}} \times 100\%$$

d. Return on Assets (ROA)

This ratio expresses the capacity of the capital used in the investment in total assets to make the profit. Hence, this is the indication of the profit of the firm by the utility of the total assets financed through different kinds of sources of capital. It is derived by dividing the net profit after tax with interest by total assets.

$$\text{ROA} = \frac{\text{Net Profit After Tax} + \text{Interest}}{\text{Total Assets}}$$

e. Earning Per Share (EPS)

Earning per share is the earning available for equity shareholders for each equity share. This ratio gives the information of the profit on the behalf of the shareholders. Higher EPS is the happiest situation for the shareholders and it is the symbol of sound

profitability situation of the firm. It can be calculated dividing the net profit available to common shareholders by number of equity shares outstanding.

$$EPS = \frac{\text{Net Profit Available To Common Shareholders}}{\text{Number of Share Outstanding}}$$

f. Dividend per Share (DPS)

After calculating the earning available to the common shareholders, the firm decides to retain some part of the profit for the investment in potential investment opportunities. But, the remnant is distributed to the equity shareholders in the firm of dividends. So, DPS means the dividend for the each equity shareholder in the form of return for their investment. Higher DPS is the symbol for the increase in the price of the share.

g. Earning and Dividend yield

There are two ratios that can be studied as follows:

(i) Earning Yield Ratio

This ratio is concerned with the earning per share and the market price per share. It indicates to what extent the EPS of the firm is with respect to the market price per share.

$$\text{Earning Yield Ratio} = \frac{\text{Earning Per Share (EPS)}}{\text{Market Price Per Share (MPPS)}}$$

h. Price Earning Ratio (P/E Ratio)

P/E ratio is the reciprocal of the earning yields ratio. It is the most important ratio to know to what extent the earning per share is contributing for the positive change in the market price per share. Higher the ratio attracts the investment in the company and it is the symbol for the company's prosperity.

$$\text{P/E Ratio} = \frac{\text{Market Price Per Share (MPPS)}}{\text{Earning Per Share (EPS)}}$$

2.1.6.4 Activity Ratio

This ratio is directly related with the assets utilization ratio. It is used to measure the utilization of the capacity of the assets financed through different sources of capital. Debtor turnover ratio, inventory turnover ratio, average collection period, fixed assets turnover ratio, total assets turnover ratio, capital employed turnover ratio are the tools

for the activity analysis of the total assets. As the activity ratios are directly related to the utilization of the assets. It does not directly affect the capital structure decision-making process.

2.1.7. Cash Flow Ability to Fixed Charges

Cash flow ability of the firm is the most important tool to capital structure decision-making process. The firm's cash flow ability should be estimated for the purpose to serve the interest to the debt, preferred dividend to preference share and lease payment to lease contract. The use of the debt in the capital structure depends on the interest on it, which should be less than the cash flow of the firm. The cash flow should be excess and enough to pay the interest, preferred dividend and lease payment. In this situation, the firm will be relevant to use debt that will increase the profit of the firm. Similar is the case for the preference share capital and the lease purchase.

Hence the selection of preference share capital and debt capital in the structure of the firm can be decided by analyzing the cash flow ability of the firm to fixed charges. This can be possible by using coverage ratios to analyze.

2.1.8. Conceptual Framework of Leverage

Leverage is the most important and fundamental part in the study of capital structure. Without the study of leverage, the study of capital structure cannot be completed. Capital structure is just the best-suited structure of different types of capitals for the benefit of the firm.

Hence capital structure refers to the composition of capital from different sources like capital stock, surplus, preferred stock and long-term debt. But leverage refers to acquiring assets that have fixed costs and employing financial resources that have fixed cost. The financing resources with the fixed cost means using the long term debt having fixed charge, i.e., interest. Long term debt is one of the financing sources financed by outsiders. In general, the term leverage means, "Power gained by using lifting force". In the presence of lifting force, a small change in the quantity of one side may heavily affect other side. Similarly change in small unit of one source of capital will affect another source among the different sources of capital of company. Such type of effect is known as leverage in financial language. In some cases, as with lifting heavy object, leverage allows us to accomplish things not otherwise possible at a given level of effect. The concept of leverage as a lifting force is valid in running a company. The financial manager is responsible to identify many sources of leverage.

Sometimes the effect of financial decision could be reversible due to some mistake made by the financial manager. The leverage, therefore, may be favorable or unfavorable that depends upon different situations that arise inside and outsides of the company.

In operation of business organizations or manufacturing companies, capital is the must essential factor. Without adequate capital, no business can be established and run. So, the capital for the business or manufacturing organization can be compared to the lifeblood for the living beings. Capital can be collected by different sources.

The financial management should take the decision about the right source of capital as per the different sources of capital. Such type of determination of the structure of capital is called capital structure. While determining the capital structure, the nature of business, availability of the source and probability should be taken as the essential basis. Capital structure is the ratio of the ownership capital and debt capital. The ownership capital might be favorable for one business organization but it might be unfavorable for another business organization at the same time. Same is the case for debt capital. Since it is the process of decision making of the right sources of capital, it is also known as capital structure decision. For the capital structure decision the knowledge of leverage is most essential.

Capital can be divided into two parts. One is ownership capital and other is debt capital. The capital obtained from the owners of the business organization is called ownership capital. Ownership capital is the performance of equity capital for the business organization. The return is generally assigned to such type of capital in the case of the profit made by the business organization. It is not necessary to pay the return to the ownership capital. But in the case of preferred stock, there is the necessity to pay the return to it. Other type of capital is debt capital. It is necessary to pay the interest to the investors in debt capital. The remnant of profit earned by the business organization after the payment of interest to the debt holder becomes under the right of the ownership capital holder. In this way, the return of the ownership capital is affected by the interest of the debt capital. If the magnitude of interest to the debt capital as the cost is higher, the magnitude of return to the ownership capital will be lower and vice-versa. In the case of no use of the debt capital, the total profit will be the return to the ownership capital is always affected by the interest of the debt capital. Such type of effect to the ownership capital by the use of debt capital is known as leverage. Hence leverage can be defined as the ratio of the net rate of return on the shareholder's equity and the net rate of return on the total capitalization. It is the percentage return on equity to percentage return to total capitalization.

The term leverage is quite commonly used to describe the firm's ability to use fixed cost assets or funds to magnify the returns to its owners. The effort to increase the return of the ownership capital by using the debt capital having low role of interest can be known as leverage. The leverage helps the financial manager of the company to increase the return of the ownership capital. Hence leverage places its great importance in the capital structure although it is a small part in the study of capital structure.

In this way leverage can be studied as a part of the process of capital structure. So both the leverage and capital structure can be taken as having the same meaning. However capital structure is somehow vast than leverage because it is the mixture of long-term debt and equity maintained by the firm. On the other hand, leverage is result from the use of fixed cost assets finds to magnify returns to the firm's owner (Gitman, 1986:44). Leverage can be defined in terms of risk and return also. It is the result of change in level of return and risk whereas increase in leverage means the increasing rate of return and risk. So the leverage has positive relation with risk and return.

There is no special model of the capital structure but the model should be fixed for the company as per the historical profit and ratios of the company. In fact some companies have their own company regulations to maintain the balance capital structure by using different sources of fund. But the capital structure of a firm or company is not only affected by the company regulations. Capital structure is mostly affected by the cost of capital. The company would like to use the equity and preference share capital better than debt capital against high interest payment, if the cost of debt is very high. But if the cost of debt is lower than the cost of equity, the debt capital will be the best source of capital. In such case the firm tries to use debt in maximum limit and the firm gets highly levered. Hence the leverage position depends upon company policy as well as cost of capital. Cost of capital is one of the major elements in determining the source of capital investment. So the firm can use only that type of capital source in their capital structure, which has the lower cost.

The firm has the choices over the capital source either the debt capital or ownership equity capital analyzing the cost of capital. But use of only one type of capital in capital structure could create the risk and the company could face the situation to suffer from loss.

So the collection of capital from different sources and investment of specific proportion by diversifying the risk may be the very best way for capital structure of any business enterprises. So, the study of cost of capital and risk-return analysis may be helpful in deciding whether the company should make itself levered or unlevered. Leverage, a very general concept represents influences and power. The influences of one financial variable over some other related financial variables are defined as leverage in the financial analysis and capital structure process. For the capital investment, the businessman collects money to operate the business by many different sources like debt, equity share and preference share. If the capital is equity the equity holder gets the profit in the form of dividend as per the profitability of the company, where as if the capital is debt, then the owners must pay the fixed amount of interest to the loan provider. If there is no debt in the capital structure then the shareholders can earn the total amount of profit.

Hence the increased amount of debt is quite risky to the shareholder/owners. In this way, the return is always influenced by the amount of interest, which is known as leverage. So, the leverage is the objective of maximizing the shareholder, wealth position by using low cost of securities. For the debt capital, company should pay fixed amount of interest periodically and repay the original sum at the time of its maturity irrespective of the company's rate of return on asset. The firm is called highly levered if debt proportion is higher than other sources of capital. There is the advantage of using debt capital, because the fixed charges of interest is tax saving.

But there is the legal binding to the company to pay the interest and principal sum to the loan provider in time; otherwise the company may go to the liquidation. Hence, debt is the risky source of capital and may be the main reason of a company's liquidation. So, the board of directions of the company should be cautious and make plan before using the debt capital.

The source of capital other than debt is equity capital. It is the ownership capital by the use of which owners can get profit when the capital investment is made. It is the capital made by the investment by the owners as well as capital collected by issuing share publicly. The company should pay dividend from its profitability to shareholders. But the payment of dividend is not fixed and depends upon the dividend policy of the company. High percentage of equity capital in the capital structure creates the higher amount of tax because of its non-tax deductible nature. Hence dividend can be distributed only after the payment of tax. This shows that the high proportion of equity capital in the capital structure is also risky. Hence the best

combination of equity and debt capital is made to reduce the risk and maximize the shareholders' wealth.

Hence in the capital structure decision-making process, the concept of leverage is the fundamental. A change in one source of capital due to the changing source of another capital can be studied under leverage analysis.

An effect of change of one of the capital source can be realized by the change in sales and profit of the company "A high degree of leverage implies that a large change in profit occurs due to a relatively small change in sales" (Hampton, 1994: 157). The concept of leverage can be helpful to make the specific knowledge to have the potential capital structure decision that make the firm's best operation process. In conceptual analysis of leverage, the different types of leverage tools can be used for financial planning of capital structure.

2.1.8.1. Type of Leverage

The study of leverage to the capital structure of the firm will not be complete unless the knowledge of the types of the leverage is not applied. There are three types of leverage related to the measurement of profit in order to operate the financial activities.

2.1.8.2. Operating Leverage

Fixed cost of any firm affects on its business risk. If fixed costs are high, even a small decline in sales can lead to a large decline on return on equity (other things remains constant). So, the higher the firm's fixed cost, the higher its business risk. If the high percentage of total costs is fixed, then the firm is said to have a high degree of operating leverage. "In business terminology, a high degree of operating leverage, other factor held constant, implies that a relatively small change in sales results in the large change in ROE.

"The measurement of the relationship between percentage change in earning before interest and tax (EBIT) and the percentage change in sales is known as operating leverage" (Dangol, 2006: 115).

Leverage is that portion of fixed cost, which represents a risk to the firm. Other thing held constant, al higher the operating leverage, the higher business risk. Or higher the degree of operating leverages, higher the operating risk. Where, "degree of operating

leverage defines as the percentage change in operating income (EBIT) associated with a given percentage change in sales." (Weston ad Brigham, 705).

Degree of Operating Leverage (DOL) = $\dfrac{\text{Percentage change in EBIT}}{\text{Percentage change in sales}}$

So, the operating leverage is double-edged sword. If the company has a large fixed cost more than its marginal contribution, it should try to cover all fixed cost. When the company reaches its break even, i.e. no profit no loss condition, a small change in sales causes the large percentage change in EBIT. The fixed cost will be equal to the contribution margin in the condition of reaching break-even point. Beyond that point, if the company has a high operating leverage, a small change in sales brings comparatively a high change in EBIT. The financial manger of the firm should be cautious because the small decrease in sales may cause a large decline of operating profit. The fluctuating operating leverage is riskier and dangerous for the company and its reputation too. It harms the profitability and profit condition of the company.

2.1.8.3. Measuring the Degree of Operating Leverage (DOL)

The degree of the operating leverage at any single sales volume can be calculated from a ratio of the percentage change in operating profit and a percentage change in sales.

DOL = $\dfrac{\text{\% Change in Operating Profit}}{\text{\% Change in Sales}}$

= $\dfrac{\dfrac{\text{EBIT}}{\text{EBIT}}}{\dfrac{\text{Sales}}{\text{Sales}}}$

DOL = $\dfrac{\text{Sales} - \text{Variable Cost}}{\text{EBIT}}$

Where EBIT = Earning Before Interest and Tax or Operating Profit

2.1.8.3. Financial Leverage

The use of fixed charges sources of funds, such as debt and preference capital along with the owners' equity in the capital structure, is described as financial leverage.

Financial leverage can be defined as "the extent to which fixed income securities (debt and preferred stock) are used in the firm's capital structure (Pandey, 1999:658).

The possibility of the financial leverage arises when a firm goes the debt capital in its capital structure. The impact of debt financing on the earning before tax of the firm is financial leverage. Financial leverage measures the responsiveness of earning per share (EPS) to the change in earning before interest and tax (EBIT).

Financial leverage can be measured by using various tools. The most commonly used measures of financial leverage : (Bierman, McMillan and Pandey, 1970:636).

a.   Debt Ratio (The ratio of debt to total capital)

i.e. $L_1 = \dfrac{B}{V} = \dfrac{B}{B + V}$

Where B = Value of debt
        S = Value of equity
        V = Value of total capital

b.   Debt To Equity Ratio (The ratio of debt to equity)

i.e. $L_2 = B/SL_2 = \dfrac{B}{S}$

c.   Interest Coverage Ratio

i.e. $L_3 = \dfrac{EBIT}{Interest}$

The first two measures of financial leverage can be expressed in terms of books or market value. They measure the financial leverage that is static in nature as they show the borrowing position of the company at a point of time. Thus, these measures fail to reflect the level of financial risk, which is inherent in the possible failure of the company to pay interest and repay debt. The third measure of financial leverage, commonly known as coverage ratio, indicates the capacity of the company of the company to meet fixed financial charges.

"Financial leverage shows up as interest expenses causing additional variability in net income over and above the variability in net income that reflects financial risk" (Weston and Brigham, 1982: 555). When the company wants to expand its capacity, it needs more money to invest in fixed capital. The need of large investment can be fulfilled by equity and debt. When the cost of debt is less, then the company may be profitable with debt capital investment. In this way the profitability of company, by using debt capital can be measured only with the help of financial leverage.

2.1.8.5. Measuring the Degree of Financial Leverage (DFL)

The degree of financial leverage is the numerical measure of the firm's leverage (Gitman, 1986: 15). The degree of financial leverage is defined as the percentage change in earning per share that is associated with given percentage change in earning before interest and taxes (EBIT). (Weston and Brigham, 707). DFL may be calculated by using any one of the following formulas:

$$DFL = \frac{\% \text{ Change in EPS}}{\% \text{ Change in EBIT}}$$

$$DFL = \frac{EPS/EPS}{EBIT/EBIT} \quad or \quad DFL = \frac{EBIT}{EBT}$$

DFL shows that to what extent the firm is able to bear its fixed charges. DFL of un-levered firm will be 1 and it will be greater than 1 in case of levered firm.

2.1.8.6. Combined Leverage

The combination of operating leverage and financial leverage is known as combined leverage. The leverages are combined to assess the impact of all types of fixed costs. "The combined leverage is the potential use of fixed costs both operating and financial to magnify the effort of change in sales on the firm's earning per share (EPS) (Weston and Brigham, 1982: 555). The effect on earning per share due to total cost used by firm is described as a combined leverage. Combined leverage is also called total leverage.

"Due to inclusion of all type of fixed cost; this leverage can be viewed as the total impact of the fixed costs in the firm's operating and financial structure; combined is used to compare changes in revenue with changes in EBT and also change in net income" (Hampton, 1994: 163). When the company has high level of operating and financial leverage, even a small change in sales volume will have dramatic effect on EPS. The operating and financial leverage together, i.e., combined leverage, is the

main cause of wide fluctuation in EPS for a given change in sales volume. "But swing in EPS will be more pronounced if the company also used high amount of operating and financial leverage" (Pandey, 1999: 197).

2.1.8.7. Measuring the Degree of Combined Leverage (DCL)

The relationship between percentage change in EPS and percentage change in sales is measured by the combined leverage. The degree of combined leverage is defined as a percentage change in EPS due to given percentage change in sales. It can be found out by multiplying degree of operating leverage with degree of financial leverage.

$$DCL = DOL \times DFL$$
$$= \frac{\% \text{ Change in EBIT}}{\% \text{ Change in sales}} \times \frac{\% \text{ Change in EPS}}{\% \text{ Change in EBIT}}$$
$$= \frac{\% \text{ Change in EPS}}{\% \text{ Change in sales}}$$

OR

$$DCL = \frac{\text{Sales} - \text{Variable Cost}}{\text{EBT}} = \frac{\text{CM}}{\text{EBT}}$$

2.2. Review of Related Studies

2.2.1 Review of Major International Studies

According to Sharma and Rao's Study (1969), They conducted a study about leverage and values of the firm to test the M-M hypothesis by establishing the hypothesis that after allowing the two advantages from the interest paid on debt, the value of a form is independent of it's capital structure. For the study they use the sample 30 engineering companies from the Indian Engineering Industry and used the regression equation for three cross-section years 1962, 1963 and 1965. The equation model they have used in the study was as follows:

$V/F = a_1(X^{-t}\text{-}tR)/F + a_21/F + a_3(X^{-t}tR)/F + a_4D/F + U$

Where

V = Value of the firm

X^{-t}-tR = Expected tax adjusted earning

X^{-t}-tR = Growth rate of tax adjustment earning calculated as a linear 5 years
average growth rate of tax adjusted earnings

D = Debt

F = The fixed assets used as deflector to reduce heteroelasticity

Calculation of variables has been done exactly the same way as that done by M-M with two expectations. They didn't follow M-M on calculation the growth rate since the growth rate of total assets may be in consistence with economic reasoning and utilized capacity growth in assets does not convey anything meaningful to the investors. On their experiment results were meaningful when fixed total assets were used as deflector. They therefore took the evening growth of earning due the both the utilization of existing capacity end to the additional of new capacity. In their study, they have introduced debt as separate independent variables. They found that, the coefficient of the debt variables come significantly greater than zero. That shows the advantage from debt is much more than tax advantage. In conclusion, they support investors prefer corporate leverage and therefore, the value of a form rises up to leverage rate considered prudent.

According to Rao and Litzenberger (1970), Conducted a comparative study of the effect of capital structure on the cost of capital in a less developed and less efficient capital market (India) and in a highly developed and efficient capital market (United State). They used 28 Indian utilities and 77 American utilities. They chose utility industry for analysis because utilities are relatively homogeneous with respect to operating risk. The study encompasses the five cross sectional years 1962-1966 and used the following regression model to test the Modigliani Miller's independence hypothesis.

$$\frac{\overline{X_t}\text{-}tR}{\overline{V}\text{-}tD} = r_0 + r_1(\text{Growth}) + r_2(\text{Leverage}) + r_3(\text{Payout}) + r_4(\text{Size}) + V$$

Where,

$\overline{X_t}$ = The firm's expected after tax operating earnings

 t = The marginal corporate income tax

R = The firm's fixed interest changes for the cross sectional year

D = The market value of the firm's debt at the beginning of the cross sectional year.

Leverage	=	The book value of the firm's senior securities divided by the book value of the firm's long-term capital (debt, preferred stock and common stock)
Growth	=	The average annual compound rate of total assets at book value over the previous five years
Payout	=	The ratio of the divided paid during the cross sectional year and the cross sectional year's after tax earnings to a common equity
Size	=	The logarithm of the book value of total assets at the close of

the cross sectional year

V   =   A random disturbance term

They found that the result for the American utilities arte constant to the M-M proposition that except for the advantage of debt financing. The cost of capital is independent of capital structure and the result also supported that the M-M hypothesis.

In case of Indian utilities, the results are consistent with the traditional hypothesis that the judicious use of financial leverage will lower the firm's cost of capital. This study shows that American capital market is highly developed and efficient market.

According to Booth, Aivazian, Kunt and Maksimovic's Study (2001), They conducted a comparative study on "Capital Structure in Development Countries". This study used a new data set to assess whether capital structure theory is portable across countries with different institutional structure. This paper uses a new form level data base to examine the financial structure of forms in a sample of 10 developing countries. Those developing countries chosen for the study are: India, Pakistan, Thailand, Malaysia, Turkey, Zimbabwe, Mexico, Brazil, Jordan and Korea.

This study focuses on answering the following questions:
➢   Does corporate financial leverage decision differ significantly between developing and developed countries?
➢   Are the factors that affect cross-sectional variability in individual countries capital structures similar between developed and developing countries?
➢   Are the predictions of conventional capital structure models improved by knowing the nationality of the company?

This study find that the variables that are relevant for explaining capital structure in the United States and European countries are also relevant in developing countries, despite the profound differences in institutional factors across these developing countries. However, there are systematic differences in the way these ratios are affected by country factors, such as GDP growth rates, inflation rates and the development of capital markets. This finding suggests that although some of the insights from modern finance theory are portable across countries, many remains to understand the impact of different institutional features on capital structure choices.

According to Baker and Wurglern's Study (2002), They conducted a study on the topic of 'Market Timing and Capital Structure.' the main issue of this study is how market timing affects capital structure. The basic question is whether market timing has a short run or a long-run impact. However, if firms subsequently rebalance away the influence of market timing financing decision, as normative capital structure theory recommends, then market timing financing decision, as normative capital structure theory recommends, then market timing would have no persistent impact on capital structure. The significantly of market timing for capital structure is therefore an empirical issue.

Results from this study are consisted with the hypothesis that market timing has large, persistent effects on capital structure. The main findings is that low leverage forms are those that raised fund when their market valuations were high , as measured by the market to book ratio , while high leverage firms are those that raised market valuations were low.

2.3 Research Gap

All the above studies are apprehensive with the research title "Capital Structure". Some researchers have chosen various companies for the research and some have determined in only one organization. Similarly this study includes only one public limited company to cover the analytical part and fulfill the objectives of the study. This thesis work has covered the period of study till 2064/065, where as the previous thesis work covered only up to 2063/064. It has used all possible financial and statistical tools to cover the objectives of this study. It has analyzed the Du-Pont system of analysis. With the help of the Du-Pont system, the result of the return on equity can be justified by explanation of the covers behind thesis. It has also analyzed regression analysis which is a statistical method for investing relationship between the variables by the establishment of an approximate functional between them. In this study, by the use of regression analysis, the strength of relationship between two variables (e.g. long term debt on shareholders equity, total debt on long term debt, EBIT on interest and net profit on sales) have been determined.

Hence, this study is considerably different from previous study. Attempt on this particular subject will be found correctly true and it will be known as valuable study in this particular subject.

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Chapter Three
Research Methodology

</div>

3.1 Introduction

The financial manager generally faces a lot of problems in the organization setting due to the causes of the external and internal variables of dynamic relationships. These problems may be either general that can be solved by the existing stock of knowledge or specific requiring special incremental knowledge to search the solution in the scientific method. Research methodology is the way by which such type of problems can be resolved. Hence, the idea of research methodology is important in analyzing and interpreting the variables to satisfy the objectives of the study.

Research Methodology is the investigation tools of any certain area and it means clearly observation of certain objective. Research is a systematic and organized effort to investigate a specific problem that needs a solution. This process of investigation involves a series of well through out activities of gathering, recording analysis and interpreting the data with the purpose of finding answers to the problem. (Seltiz and others, 1962: 50)

3.2 Research Design

Research design is an integrated frame that helps in planning and executing the thesis.

The main objective of this study is to analyze and evaluate the relationship between debt and shareholders' equity of the public limited company to make the balanced capital structure, which minimizes the cost and maximizes the returns to the shareholders and provide suggestions on the basis of the evaluation. To meet this objective, descriptive and exploratory designs are chosen as appropriate.

In this research, the debt and equity positions in the capital structure of the public limited company, that is, Bishal Bazaar Company are critically scrutinized. Mostly the secondary data have been used for the research study. The data are collected from the websites, personal visits, economic surveys and the annual reports of the selected public limited company.

Hence the research design is made by collection of information from different sources and the data have been tabulated and analyzed by using various financial and statistical tools. The financial analysis includes the ratio calculations, capital structure theories and their interpretations. Similarly the statistical analysis includes the average

or mean, standard deviation, coefficient of variation correlation coefficient, probable error, regression analysis and their interpretations. This study tries to make comparison and establish relationship between two or more variables. At the end the summary, conclusions and recommendation are set for the purpose of the study.

The study is based on certain research design. This study emphasizes on descriptive and exploratory designs.

3.3 Nature and Sources of Data
The nature of the data that are collected for the research purpose are as follows:
- Most of the data are numerically expressed.
- Secondary data are used in the study.
- The data are the aggregates of facts.
- All the data are purposeful for the research.
- Data are in systematic form.
- Data are synthesized, set, tabulated, graphed and calculated.
- The data are useful for the study.

The main source of the data collected is the secondary source. The secondary sources of data are as follows:
- The official website of the "Nepal Stock Exchange Limited"
- Security Board
- Personal visits
- Economic surveys and reports
- Brochure and annual reports of listed public limited companies

3.4 Population and Sample
For the purpose of the study of the capital structure of the public limited companies, the samples of the public limited companies are taken by the judgment and convenient sampling method. It is difficult to study the population of all public limited companies listed in Nepal Stock Exchange Ltd. Hence only one company out of them is chosen as the sample for the analysis, interpretation and representation of the population of the public limited companies. The sample of the selected public limited company, which is judged for convenience, is Bishal Bazaar Company.

3.5 Analytical Tools

After collection of the data, it should be properly edited and organized in the form of tables or graphs. This would help the researcher in finding out the salient features of the data. So, different kinds of analytical tools are used in financial statements with the help of financial transactions, which have placed during the financial year. But information provided by the financial statements is not enough and end itself. Companies cannot get the meaningful conclusion from these statements alone. The information provided by the financial statements is useful in making decisions through analysis and interpretation. Evaluation of capital structure of the selected company is a part of financial analysis and hence different types of tools can be used. The analysis of the data is the most important according to the research design. This can be possible by using the appropriate analytical tools. These tools are both financial as well as statistical. These tools have been used for analyzing capital structure management of Nepalese public limited companies.

3.5.1 Financial Tools

Financial analysis is the process of identifying the financial strength and weakness of the company by properly establishing relationships between the items of the financial statements. Each type of analysis has a purpose that determines the different relationships emphasized in the analysis. But this study is based on capital structure, so the financial tools that help to analyze the capital structure are used. In the process of capital structure decision making of the public limited companies, the components of the capital structure should be well analyzed, described and evaluated. These components are mostly the shareholders' equity capital and the debt capital. For this purpose, the financial tool is the most appropriate one. This helps to calculate the relationship between two variables in ratio and percentage basis.

Hence, financial tools are the major instrument that can be used in financial analysis. Financial analysis includes the leverage analysis. And the leverage analysis is the fundamental basis for the study of the capital structure. Hence the financial tools for the financial analysis are necessary instruments for the study of the dynamics of the different sources of the capital in the capital structure for the decision making process to minimize cost and maximize shareholders' wealth. So, the financial tools that should be used for this purpose are as follows:

1.   Ratio Analysis

a) Debt Equity Ratio in terms of Long-term Debt and Shareholders' Equity

$$= \frac{\text{Long-term Debt}}{\text{Shareholders' Equity}}$$

b) Long-Term Debt as a percentage of Total Debt

$$= \frac{\text{Long-Term Debt}}{\text{Total Debt}}$$

c) Total Debt to Net worth Ratio

$$= \frac{\text{Total Debt}}{\text{Net Worth}}$$

d) Interest Coverage Ratio

$$= \frac{\text{Earning Before Interest and Tax (EBIT)}}{\text{Interest Charges (I)}}$$

e) Return on Assets (ROA)

$$= \frac{\text{Net Profit}}{\text{Total Assets}} \times 100\%$$

f) Net Profit Margin

$$= \frac{\text{Net Profit}}{\text{Sales}} \times 100\%$$

g) DU-PONT Analysis

Return on Equity = Profit Margin x Total Assets Turnover x Equity Multiplier

$$= \frac{\text{Net Profit}}{\text{Sales}} \times \frac{\text{Sales}}{\text{Total Assets}} \times \frac{\text{Total Assets}}{\text{Equity}}$$

h) Capital Structure Theories

(i) Overall Cost of Capital (K_o)

$$= \frac{\text{Net Income (EBIT)}}{\text{Value of the company}}$$

(ii) Equity Capitalization Ratio (K_e)

$$= \frac{\text{Net Income (EBT)}}{\text{Market value of shares}}$$

2. Degree of Leverage

a) Degree of Financial Leverage (DFL)

$$= \frac{\text{Percentage Change in EPS}}{\text{Percentage Change in EBIT}} \quad \text{OR} \quad \frac{\text{EBIT}}{\text{EBT}}$$

These financial tools help the research study to reach the conclusion by the analysis of the dynamics of the variables in the capital structure.

3.5.2 Statistical Tools

In the course of the study of the capital structure, the shareholders' equity and the debt capital are the most common variables. The relationships between them are the important subject for the analysis to determine the balanced capital structure. Hence the statistical tools are also used to analyze the capital structure for its effectiveness. Following are the various types of statistical tools that have been used for this purpose:

1. Average or Mean

It can be defined as the sum of the observations divided by the number of observations in the selected sample.

$$\text{Average/Mean } (\overline{X}) = \frac{\text{Sum of observations}}{\text{Number of observations}} = \frac{X}{N}$$

Where:

X is any variable observation.

N is the number of observation of the variables.

$\overline{X}$ is the mean value/average of the variables under observations.

2. Standard Deviation (S.D)

The standard deviation is used to measures the risk. It shows the deviation of actual mean with average mean. The standard deviation measures the absolute dispersion of variability of a distribution. The greater the variability or dispersion, the greater would be the magnitude of the deviation of the value from their mean. The smaller the dispersion or variability, smaller would be the standard deviation. Hence, the standard deviation is useful in judging the representativeness of the mean. The formula of standard deviation is as follows:

$$\text{Standard Deviation ( )} = \sqrt{\frac{(X - \overline{X})^2}{N}}$$

Where:

X is the variable.

$\overline{X}$ is the mean variable.

N is the total number of variables under observation.

  is the symbol to represents standard deviation.

3. Coefficient of Variation (C.V)

Coefficient of variation is the corresponding relative measure of dispersion. The series for which the coefficient of variation is greater is said to be more variable or conversely less consistent or less uniform. The formula of coefficient of variance is as follows:

$$C.V = \frac{S.D}{\overline{X}} \times 100\%$$

Where:

S.D is the standard deviation.

$\overline{X}$ is the mean or average value of the variables.

4. Correlation Coefficient (r)

There are different types of sources of capital in the capital structure of the public limited companies. The shareholders' equity capital and debt capital are the mostly used variables in the capital structure of the Nepalese public limited companies. The analysis, description and evaluation of these two variables can be done by the statistical tool called correlation analysis. Correlation coefficient measures the relationship between two and more variables, it shows the extended relationship between them. The relationship may be direct or inverse. If both the variables show similar change there is direct or positive relationship between them and vice versa. Or it indicates the direction of relationship among variables. A method of measuring correlation so called Pearson's coefficient of correlation. It is denoted by 'r'.

The relationship between two or more variables can be measure by the correlation coefficient. Hence, the correlation called "Correlation Coefficient" can be summarized in one figure, the degree and direction of movement (Bajracharya, 2000: 250).

There are different types of the correlation, out of which simple correlation has been used in the analysis of the variables of the capital structure of public limited companies. Simple correlation is the degree of relationship between two variables. In calculating the coefficient of correlation, Karl Pearson Correlation Coefficient has been widely used. But for the sake of easiness product moment formula is also used, which can be expressed as follows:

$$r = \frac{n \sum XY - \sum X \sum Y}{\sqrt{n \sum X^2 - (\sum X)^2} \sqrt{n \sum Y^2 - (\sum Y)^2}}$$

Where:

X is the one variable.

Y is the other variable.

N is number of pairs of observations.

Assumptions:

If r = 1, there is positively perfect correlation between two variables.

If r = -1, there is negatively perfect correlation between two variables.

If r = 0, the variables are uncorrelated.

The nearer the value of r to +1, the closer will be the relationship between two variables and nearer the value of r to zero, the lesser will be the relation (Bajracharya,B.C.,2000:256-257).

5. Probable Error (P.E.)

Probable error is an old measure of ascertaining the reliability of the Pearsonian coefficient of correlation. If r is the calculated correlation coefficient in a sample of n pairs of observations, then its standard error, usually denoted by S.E.(r) is given by:

$$\text{S.E. (r)} = \frac{1-r^2}{\sqrt{n}}$$

Probable error of the coefficient of correlation can be calculated from S.E. of the coefficient of correlation by the following formula:

P.E. (r) = 0.6745xS.E.(r)

$$= 0.6745 \frac{(1-r^2)}{n}$$

Hence it helps to interpret its value and is the measure of testing the reliability of correlation coefficient. The probable error is used to test whether the calculated value of sample correlation coefficient is significant or not. A few rules for the interpretation of the significance of correlation coefficient are as follows:

➢ If r<P.E. (r), then the value of r is not significant, i.e., insignificant.

➢ If r>6xP.E. (r), then the value of r is definitely significant.

➢ In other situations, nothing can be calculated with certainty.

The probable error may lead to fallacious conclusions particularly when, n, the number of pairs of observation is small.

Also, the probable error of correlation coefficient may be used to determine the limits within the population correlation coefficient may be expected to lie.
Limits for population correlation coefficient are r + P.E. (r).

6. Regression Analysis

Average relationship between two variables (x, y) is called regression. Estimation of unknown value of variable with the help of known value of variable is called regression analysis. Where known value of variable is called independent variable and unknown value of variable is called dependent variable. The concept of regression was first introduced by Francis Galton. Regression refers to an analysis, which is involves the fitting of an equation to a set of data points, generally by the method of least square. In other words, the regression is a statistical method for investigating relationships between the variables by the establishment of an approximate functional relationship between them. It is considered as a useful fool for determining the strength of relationship between two (Simple Regression) of more (Multiple Regression) variables. It helps to predict and estimate the value of one variable when the value of other variable is known.

a)   Simple Regression
The analysis which is used to explain the average relationship between two variables is known as simple linear regression analysis. The formula for the calculation is:

$$b = \frac{n \ XY - (\ X)(\ Y)}{n \ X^2 - (\ X)^2}$$

$$a = \frac{Y - b(\ X)}{n}$$

The equation of regression line is Y = a+bX

Where:
Y = Dependent variable
X = Independent variable
b = Slope of the regression or Regression coefficient
a = Regression constant
n = Number of observations

b) Multiple Regression

Simple regression analysis reveals the linear relationship between only two variables, one independent and the other dependent variable and based upon this relationship, the value of dependent variable for a given value of independent variable can be predicted. But in real life, so many independent variables do affect the dependent variable. Thus, multiple regression analysis consists of the measurement of the relationship between the dependent variable and two or more independent variables. The procedure is similar to that for simple regression, with a difference that other independent variables are added to the regression equation. The multiple regression equation for one dependent and two independent variables is given by:

$X_1 = a + b_1 X_2 + b_2 X_3$

Where:

a = Point of intercept on Y-axis

b_1 = Slope of X_1 with variable X_2 holding variable X_3 constant

b_2 = Slope of X_1 with variable X_3 holding variable X_2 constant

The values of a, b_1 and b_2 are determined by solving simultaneously following three normal equations obtained by the method of least squares:

$X_1 = na + b_1 \ X_2 + b_2 \ X_2$

$X_1 X_2 = a \ X_2 + b_1 \ X^2_2 + b_2 \ X_2 X_3$

$X_1 X_3 = a \ X_3 + b_1 \ X_2 X_3 + b_2 \ X^2_3$

Chapter Four
Data Presentation and Analysis

4.1 Introduction

The overall background, basic objective and significance of the study have been already mentioned in the first introduction chapter. The overall background of Bishal Bazaar Company has also been mentioned. In the second chapter various related books, journals, other publications as well as unpublished master level dissertations have been reviewed. In the third chapter, comprehensive analysis of relevant variables is undertaken. As such several tools and technique employed for analysis and presentation of data have been defined.

In this chapter effort has been made to analyze the capital structure of the public limited company. For this, presentation of data of the organization and classification of the data for analysis has been done. The data collected is to be presented for the detail analysis by examining it in tables and graphs. This chapter proceeds with financial analysis and tabulation and then with statistical analysis. The financial analysis is done through presentation of data and calculating various financial ratios that reflect the relationship of variables affecting capital structure. The major variable and the variable affecting capital structure used for analysis are long term debt, total debt, equity capital, EBIT, interest, sales, total assets, net worth, current liabilities and current assets. Other related variable are also used when they are felt necessary.

Given these variables, following relationship of relevant variable for empirical testing are analyzed to know how the above mentioned public limited company has been able to maintain their capital structure positions. The variables used for analysis of empirical relationship are given below:

➢ Analysis of Long term debt and Shareholders' equity
➢ Analysis of Long term debt to Total capital ratio
➢ Analysis of Total debt to Net worth ratio
➢ Analysis of Interest coverage ratio
➢ Analysis of Return on total assets ratio
➢ Analysis of Profit Margin Ratio
➢ Analysis of Return on Equity (ROE) by using DU-Pont system
➢ Analysis of capital structure

      a. Overall Capitalization Rate

      b. Equity Capitalization Rate

- ➢   Analysis of Financial Leverage
- ➢   Analysis of correlation between long term debt and net worth capital
- ➢   Regression analysis of LTD on Shareholders' Equity
- ➢   Regression analysis of Total Capital on LTD
- ➢   Regression analysis of Interest on EBIT
- ➢   Regression analysis of Net Profit on Sales

4.2 Leverage Ratio

Leverage ratio is also known as capital structure ratio. The capital structure ratio judges the long term financial position of the firm. This ratio indicates funds provided by owner and lenders. As the general rule there should be an appropriate mix of debt and owner's equity while financing the firm's assets. Leverage ratios have a number of implications. First, is between the debt and shareholders' equity. The company has legal obligation to pay the interest to debtors. Second, shareholders have advantages in employment of debt in two ways.

- A. They can retain control of company with the limited shop
- B. Their return is magnified, if the company's interest rate on debt is lower than rate of return on total capital employed. Shareholders' return can be magnified through employment of debt on the other hand if the cost of debt is higher than rate of return on overall capital employed, shareholders' return is reduced in employment of debt and there is threat of insolvency. By using debt shareholders' return is magnified as well as the risk of liquidation. Third creditors treat equity as margin of safety, if owner have provided only a small proportion of total financing. The creditors risk will be high and company will face difficulties in raising funds in future from creditors and financial risk and the ability of company in closing debt, for the benefit of shareholders.

Leverage ratio may be calculated from the balance sheet item and determined to which borrowed fund have been used to finance the company. Leverage ratios from the income statement measure the risk of debt. Leverage ratio can be analyzed in the following way:

4.2.1 Analysis of Long Term Debt and Shareholders' Equity

The ratio of borrowed funds and owner's capital is a popular measure of long term financial solvency of the firm. In usual version, the debt/equity is the ratio of long term debt to total equity. Although, short term debt and accruals provide leverage just as long term debt, current liabilities are usually omitted. From the ratio, the firm is assumed to be able to adjust the short term part of capital structure rapidly, when the

rate of return on the assets decline. Thus, the debts considered here is exclusive of current liabilities. In the following table, long term debt to equity ratio presented in quantitative term shows the movement of the trend from the year 2059/60 to 2064/65 of Bishal Bazaar Company.

Table No. 4.1
Debt Equity Ratio

Year	Ratio
2058/59	0.5495
2059/60	-
2060/61	-
2061/62	-
2062/63	-
2063/64	-
2064/65	-
Average	0.5495
Standard Deviation ( )	0
Coefficient of Variation (%)	0

Source: Appendix-2

The above table shows that the debt equity ratio of Bishal Bazaar Company in the year 2058/59 is 0.5495. This debt equity ratio indicates that this company had long-term debt but now it's an unlevered company. S.D and C.V are 0%. This shows that debt equity ratio of BBC is quite consistent in nature.

Figure No.4.1
Debt Equity Ratio
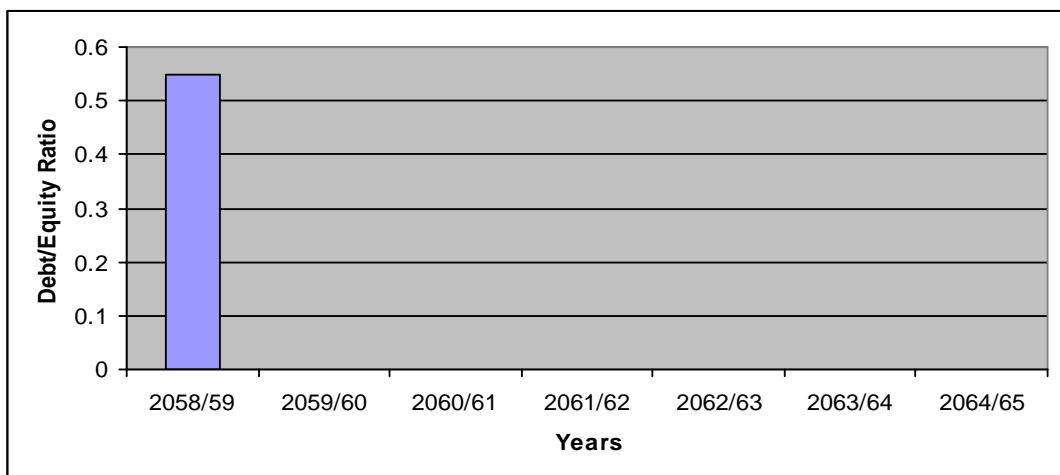
4.2.2 Analysis of Long-Term Debt to Total Capital Ratio

This ratio is computed by simply dividing the long-term debt of the firm by its permanent capital. Permanent capital here represents the shareholder's equity capital plus long term debt. The long-term debt to permanent capital ratio of Bishal Bazaar Company is calculated and presented on the following table:

Table No 4.2
Long-Term Debt to Total Capital Ratio

Year	Ratio
2058/59	0.3546
2059/60	-
2060/61	-
2061/62	-
2062/63	-
2063/64	-
2064/65	-
Average	0.3546
Standard Deviation ( )	0
Coefficient of Variation (%)	0

Source: Appendix-3

The long term debt to total capital ratio of BBC during the study period 2058/59 are 0.3546 respectively. But since then this ratio is zero because long term debt of this company is zero. Hence this company is unlevered. The standard deviation and coefficient of variation are zero, this indicates that the long term debt to total capital ratio of this company is quite consistent.

Figure No.4.2
Long-Term Debt to Total Capital ratio
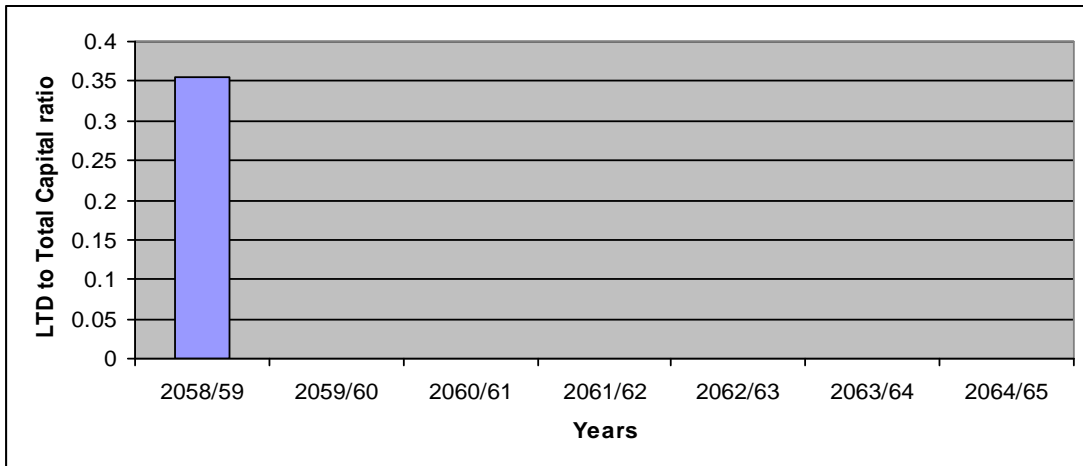
4.2.3 Total Debt to Net Worth Ratio

This ratio is also known as debt equity ratio. The relationship between lender's contributions is shown by equity ratio and it reflects the relative claims of creditors and shareholders against the assets of the company. This ratio is calculated by dividing total debt by net worth.

Net worth consists of the entire share capital, reserve and surplus of the company and total debt consists of all types of long term debt and current liabilities. This total debt to net worth ratio is computed by using following formula:

Debt to Net Worth Ratio = $\dfrac{\text{Total Debt}}{\text{Net Worth}}$

Table No.4.3
Debt to Net Worth Ratio

Year	Ratio
2058/59	1.4621
2059/60	1.5225
2060/61	1.2670
2061/62	1.3818
2062/63	1.4463
2063/64	0.6075
2064/65	0.4292
Average	1.1595

Standard Deviation ( )	0.4148
Coefficient of Variation (%)	35.77

Source: Appendix-4

The above table shows total debt to net worth ratio. A decline in the market value of the company's equity limits its ability to obtain external debt financing. A high ratio shows the large share of financing by creditors as compare to that of the owners. This means creditors would suffer more in times of distress than the owners. Bishal Bazaar Company has used only short term debt since 2059/60. The total debt to net worth ratio of this company is low. The ratios of BBC from the year 2063/64 to 2064/65 are lower than the average ratio of 1.1595. The standard deviation and coefficient of variation are 0.4148 and 35.77% respectively. Therefore it can be concluded that this company has not been able to maintain its average ratio of total debt to net worth for two years. The ratio suggests that BBC must increase its debt.

Figure No.4.3
Debt to Net Worth Ratio
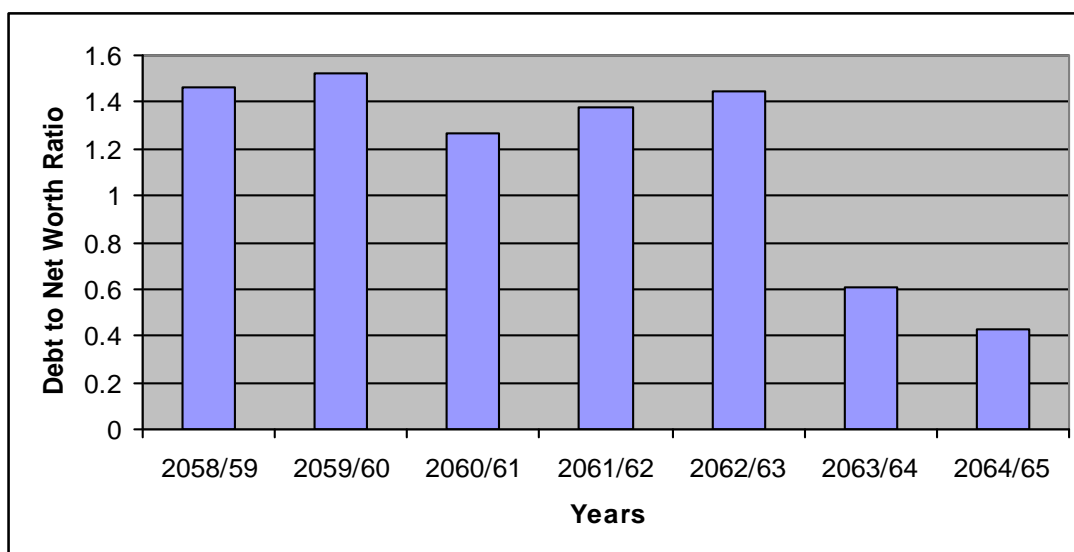
4.2.4 Analysis of Interest Coverage Ratio

The interest coverage ratio also called the times interest earned ratio is determined by dividing earnings before interest and tax (EBIT) by the interest charges. The ratio measures the extent to which the firm's earnings can decline without inability to meet annual interest costs. Failure to meet such obligations can bring legal action by the creditors, possibly resulting in bankruptcy. It should be noted that the before tax income figure is used in numerator. Because income taxes are computed after interest

expense is deducted, the ability to pay current interest is not affected by income taxes. Hence interest coverage ratio is designed to relate the interest charge of a firm to its ability to service them. It measures the debt servicing capacity of a company. A high ratio is a sign of low burden in business and lower utilization of borrowing capacity. The large the coverage is the greater the ability of the company to make the payment of interest to creditors. The formula for the calculation of this ratio is given by:

Interest Coverage Ratio = $\dfrac{\text{EBIT}}{\text{Interest Charges}}$

The analysis of interest coverage ratio of Bishal Bazaar Company for the study period has been shown below:

Table No.4.4

Interest Coverage Ratio

Year	Ratio
2058/59	1412.92
2059/60	106.07
2060/61	66.61
2061/62	-
2062/63	-
2063/64	-
2064/65	1757.14
Average	477.62
Standard Deviation ( )	707.38
Coefficient of Variation (%)	148.11

Source: Appendix-5

The interest coverage ratio of Bishal Bazaar Company during the study period has been presented in the above table. The average interest coverage ratio of BBC is 477.62. This ratio is high because BBC is an unlevered company. This company had used the long term debt only once in the year 2058/59. Since there is low utilization of borrowing capacity there is lower burden in the business and it has greater ability to pay the interest to the creditors. So, its debt servicing capacity is high. The standard deviation and coefficient of variation of BBC are 707.38 and 148.11% which indicates that the interest coverage of BBC is highly inconsistent.

Figure No.4.4

Interest Coverage Ratio
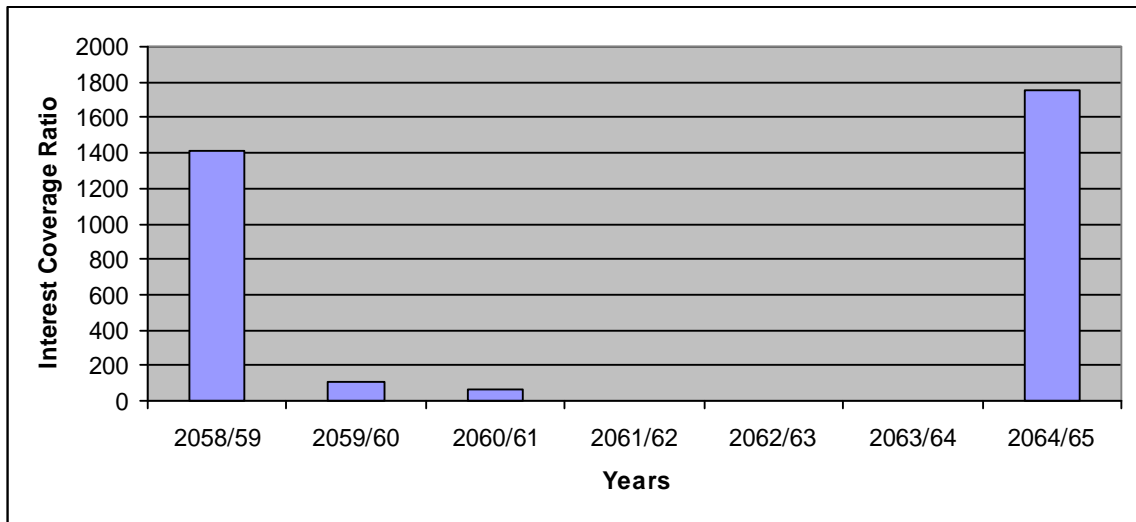
4.2.5 Analysis of Return on Assets

This ratio is also known as Net Operating Income to Total Assets ratio. It seeks to measure the effectiveness with which the firm has employed its total resources. Sometimes this ratio is called the return on investment or ROI. This description is particularly applicable in measuring the performance of individual segments or divisions of a company. Management needs to know the operating returns on the resources used by an individual segment. This ratio is computed simply by dividing earning after tax by total assets (on after tax basis). Here earning after tax (EAT) represents only residual income for shareholder. Therefore conceptually, EAT is used to calculate this ratio. This ratio measures the profitability of the total funds of company. This ratio is calculated by taking seven year balance sheet and income statement of Bishal Bazaar Company. The formula for the calculation of this ratio is given below:

Return on Assets = $\dfrac{\text{EAT}}{\text{Shareholders equity}}$

Table No. 4.5

Return on Assets

Year	Ratio (%)
2058/59	38.69
2059/60	40.63
2060/61	36.28
2061/62	40.74
2062/63	42.35
2063/64	39.52
2064/65	37.87
Average	39.44
Standard Deviation ( )	1.8788
Coefficient of Variation (%)	4.76

Source: Appendix-6

The average return on total assets ratio of this company is 39.44%.This clearly shows that net profit of the company is low as compare to its total assets. Hence this company must increase its profit. Standard Deviation and coefficient of variation are 1.8788 and 4.76% respectively which indicates that the ratio is consistent in nature.

Figure No.4.5

Return on Assets
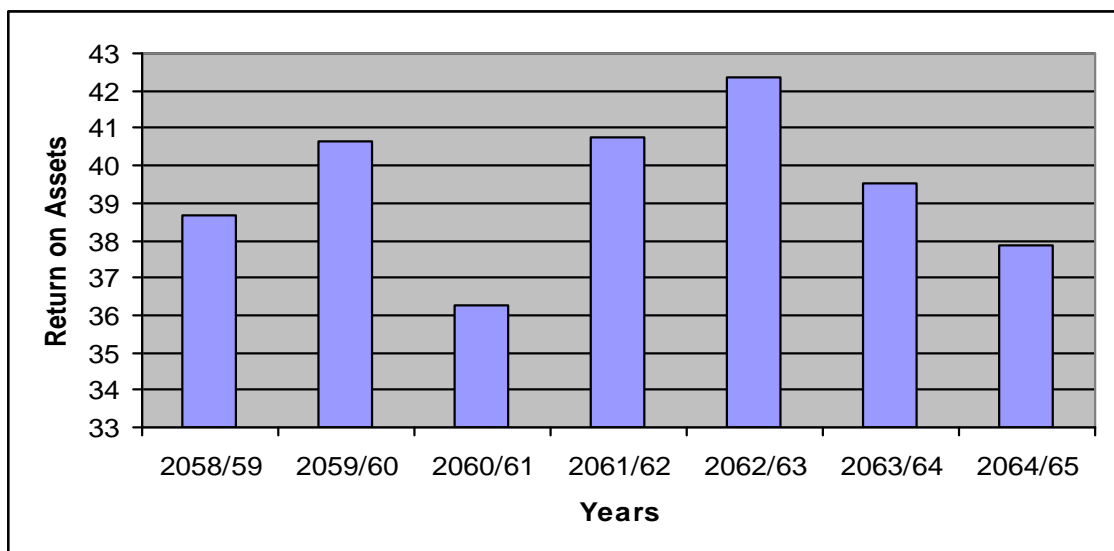
4.2.6 Analysis of Profit Margin Ratio

This ratio is usually referred to as the net income to sales ratio. This ratio can be influenced by the intensity of the industry of the firm. To produce the same return on capital or equity, a higher return on sales is required. This ratio is computed simply by dividing net profit after tax by amount of sales or net revenue. Net profit is obtained by subtracting operating expenses and income tax. Net profit after tax is given on the profit and loss account of the company. This ratio of profit margin on sales indicates that the firm's capacity withstand adverse economic condition. A company with a high profit margin ratio will be in advantageous position to service in the face of economic difficulties. To analyze the position of profit margin on sales following table is constructed:

Table No. 4.6
Profit Margin Ratio

Year	Ratio (%)
2058/59	45.42
2059/60	43.91
2060/61	37.62
2061/62	41.02
2062/63	41.41
2063/64	37.43
2064/65	35.67
Average	40.35
Standard Deviation ( )	3.5239
Coefficient of Variation (%)	8.73

Source: Appendix-7

The average profit margin ratio of this company is 40.35% which is very low. The company must try to increase its profit. This company has insufficient management of debt capital to increase the net revenue for increasing the net profit. Standard Deviation and Coefficient of Variation are 3.5239 and 8.73%. This value shows that profit margin ratio of this company is consistent.

Figure No.4.6

Profit Margin Ratio
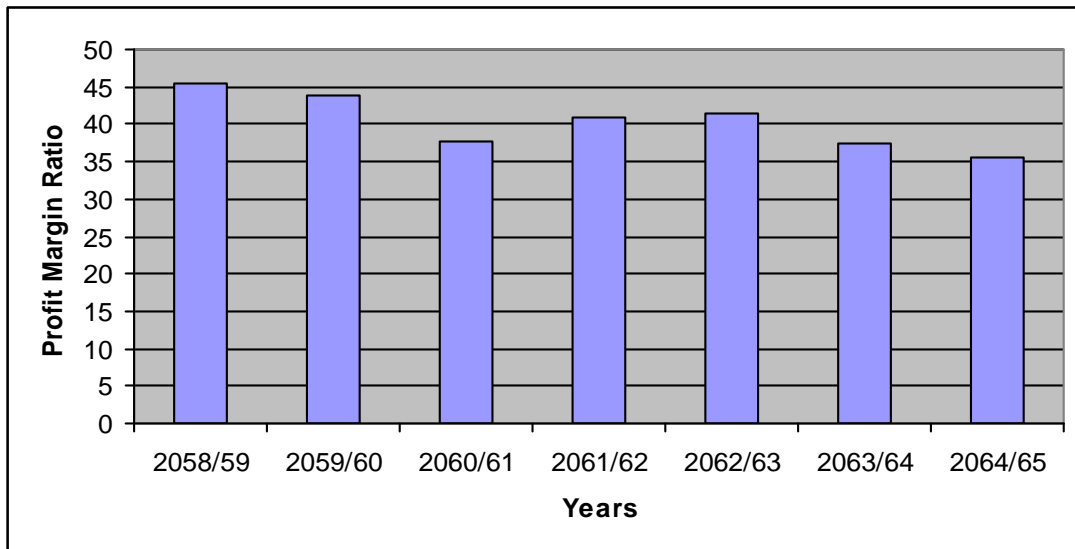
4.2.7 Analysis of Return on Equity (ROE) by the use of Du-Pont System

The return on equity measures the book return to the owners of the company. It is a bottom line ratio in that sense. The earning of the company is to be expended to the compulsory payments. After satisfying all of the stakeholders, the remaining earning is the return to the equity shareholders. This return is generally indicated by the return on equity ratio by the use of the Du-Pont system. The Du-Pont system is used in the financial analysis for the first time by Du-Pont Corporation, USA. According to Du-Pont system, return on equity is the product of the profit margin, total assets turnover and the equity multiplier. With the help of the Du-Pont system, the result of the return on equity can be justified by explanation of the causes behind this. Hence the return on equity can be calculated as follows:

ROE = Profit Margin x Total Assets Turnover x Equity multiplier

$$= \frac{\text{Net Profit}}{\text{Sales}} \times \frac{\text{Sales}}{\text{Total Assets}} \times \frac{\text{Total Assets}}{\text{Equity}}$$

Note: Net Revenue has been used sales.

ROE by Du-Pont system has been analyzed in the table below:

Table No. 4.7

Return on Equity (ROE)

Year	Ratio (%)
2058/59	80.14
2059/60	83.41
2060/61	74.37
2061/62	92.39
2062/63	102.24
2063/64	95.38
2064/65	55.29
Average	83.35
Standard Deviation ( )	14.4418
Coefficient of Variation (%)	17.33

Source: Appendix-8

The average ROE of this company is 83.35% during the study period. There is slight fluctuation of this ratio during the study period. There is satisfactory result of return to equity shareholders. The equity shareholders are highly benefited in the fiscal year 2062/63 but in the fiscal year 2064/65 the return is comparatively low. The standard deviation and coefficient of variation are 14.4418 and 17.33% respectively. This shows that the ROE is consistent in nature.

Figure No.4.7

Return on Equity
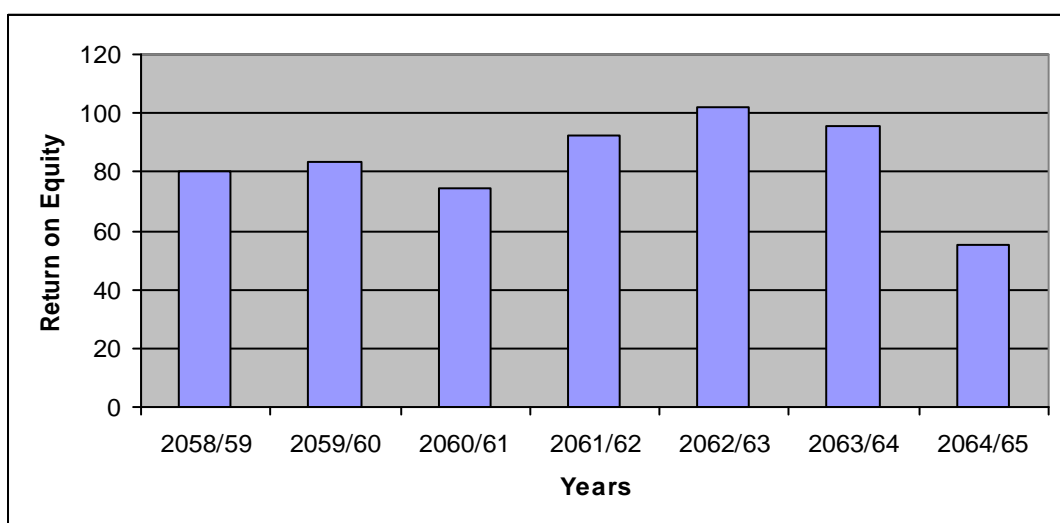
4.2.8. Analysis of Capital Structure

This study is about the capital structure under net income approach. This approach considers measuring total overall capitalization rate and equity capitalization rate for the company, which are as follows:

Net Income Approach

The total market value of public limited is simply obtained by adding the market value of debt and market value of equity. Here only fixed capital is taken for calculation. However, actual value of the company may not be applicable by considering only fixed capital. One of the crucial assumptions of net income approach is that "the use of debt does not change the risk perception of investor; as a result the equity capitalization rate K_e and debt capitalization rate K_i remain constant with change in leverage."

4.2.8.1. Overall Capitalization Rate (K_o)

According to this approach the higher use of cheaper debt lowers the overall capitalization rate of the firm which consequently increases the total value. Now by considering this implication in public limited company, the overall capitalization rate is calculated and presented as follows:

Table No. 4.8.1

Overall Capitalization Rate (K_o)

Year	Rate (%)
2058/59	85.26
2059/60	135.16
2060/61	122.60
2061/62	148.92
2062/63	160.65
2063/64	153.72
2064/65	89.98
Average	128.04

Source: Appendix-9

The above table shows the overall capitalization rate of Bishal Bazaar Company for the year 2058/59 to 2064/65. It can be seen that the average rate is quite satisfactory during the study period. However this rate has been declining since the year 2063/64 and in the recent year, i.e., 2064/65 it has fallen to 89.98%.

Figure No.4.8.1

Overall Capitalization Rate
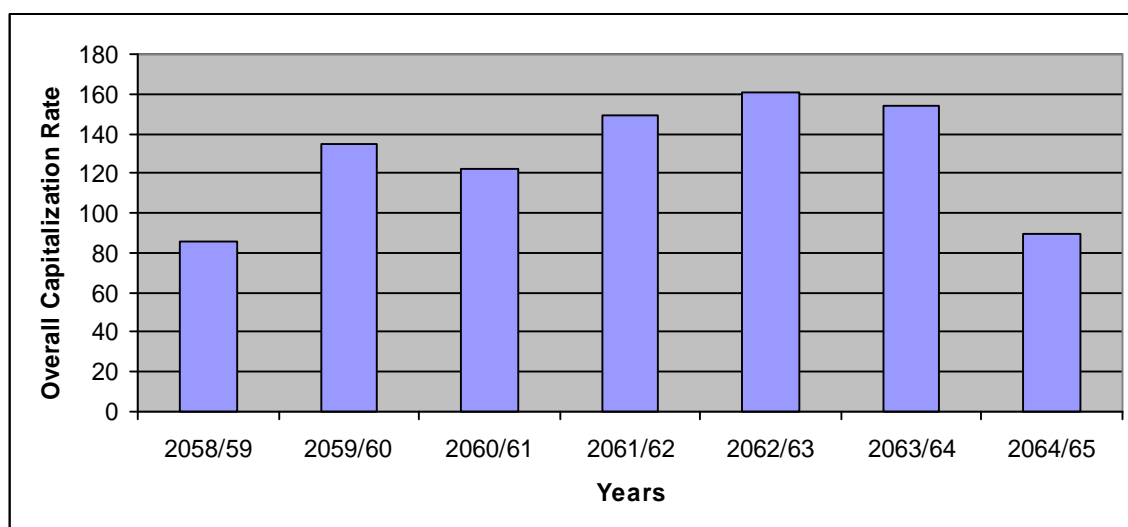
4.2.8.2 Equity Capitalization Rate (K$_e$)

Equity is one of the sources of capital, which has its own cost and it is known as cost of equity (K$_e$). A large amount of equity means the higher amount of K$_e$. In this study equity capitalization rate is calculated as EBT divided by the market value of shares as shown in the following table:

**Table No. 4.8.2**

Equity Capitalization Rate

Year	Rate (%)
2058/59	111.31
2059/60	114.94
2060/61	101.53
2061/62	126.27
2062/63	136.94
2063/64	130.56
2064/65	75.83
Average	113.91

Source: Appendix-10

The above table depicts the equity capitalization rate of Bishal Bazaar Company for the year 2058/59 to 2064/65. The average equity capitalization rate for the company is 113.91%. The above calculated data shows a fluctuating equity capitalization rate.

From the year 202058/59 this rate is increasing but in the year 2060/61 this rate has declined and again regained in the following years. However this rate has decreased in the recent year to 75.83% which is lower than the average due to the increase in the equity.

Figure No. 4.8.2
Equity Capitalization Rate
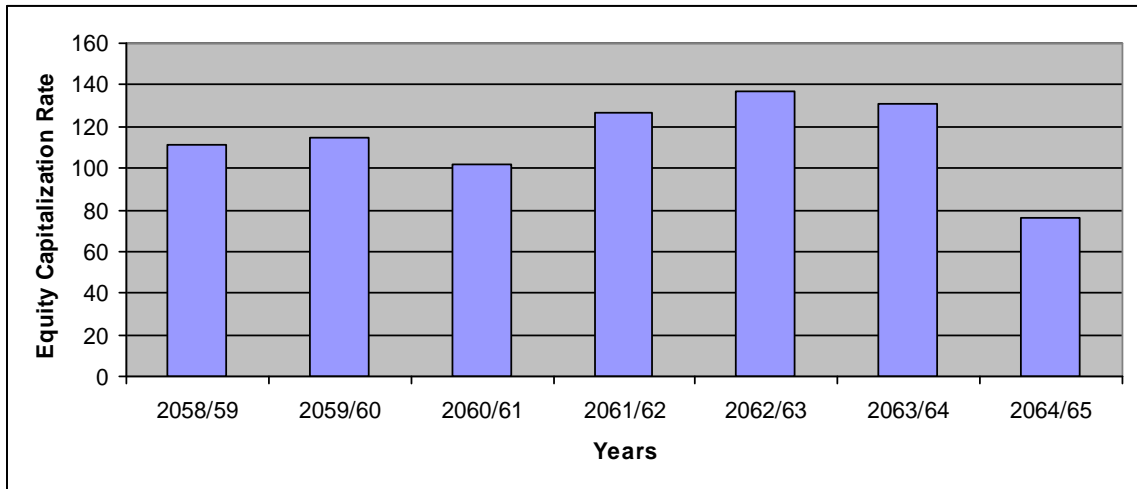
4.2.9 Analysis of Financial Leverage Ratio

Financial leverage results from the presence of fixed cost in the firm's income statement, as already mentioned in the second chapter. It is the use of another person's money in return for a fixed payment and promise to return money. Thus, degree of financial leverage of the Bishal Bazaar Company is computed simply by dividing EBIT by EBT and is presented in the table below:

Table No. 4.9
**Degree of Financial Leverage (DFL)**

Year	Ratio
2058/59	1.1868
2059/60	1.1760
2060/61	1.2075
2061/62	1.1793
2062/63	1.1731
2063/64	1.1774
2064/65	1.1867

Average	1.1838
Standard Deviation ( )	0
Coefficient of Variation (%)	0

Source: Appendix-11

Above table shows the degree of financial leverage of Bishal Bazaar Company. The average degree of financial leverage of this company is 1.1838 during the study period. This company has used long term debt only once in the year 2058/59 so it's financial leverage is irregular. Standard deviation and coefficient of variation are 0 and 0 which reflects high consistency.

Figure No. 4.9
Degree of Financial
Leverage
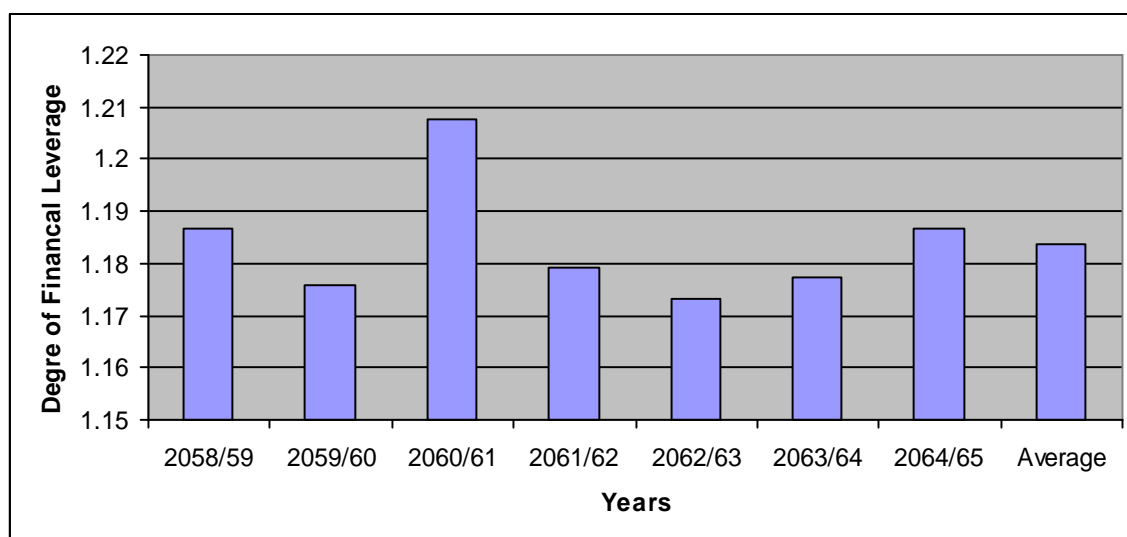
4.2.10 Correlation Analysis between Long Term Debt and Net Worth

Correlation may be defined as the degree of linear relationship existing between two or more variables. Two variables are said to be correlated when the change in the value of one variable is accompanied by the change of another variable. The correlation like regression shows the degree and direction of relationship between the variables but, unlike regression, it does not show cause and effect relationship. Correlation is a useful tool in determining the degree of relationship between two variables. In other words, correlation analysis is the statistical tool, generally used to describe the degree of own variable, which is related to another. The relationship of own variable is usually assumed to be linear one.

- Karl Pearson's Coefficient of correlation measures the intensity or magnitude or degree of relationship between two variables. It is denoted by 'r'. In the present context, the coefficient is used to examine the relationship between two variables.
- Probable Error: The probable error is used to measure the reliability and test of significance of correlation coefficient. P.E is used in interpretation whether the calculated value of r is significant or not.

If r<P.E., it is insignificant, i.e. there is no evidence of correlation.

If r>6P.E. it is significant.

If P.E. <r>6P.E. nothing can be concluded.

By adding and subtracting the value of probable error from the coefficient of correlation, the upper and lower limits respectively within which correlation coefficient in the population is expected to lie can be obtained. Karl Pearson's coefficient of correlation and probable error of long term debt and net worth is used for the analysis of correlation coefficient. The calculation is presented on the following table:

Table No. 4.10

Correlation Coefficient

Company	r	P.E.	6xP.E.
BBC	0	0.2549	1.5294

Source: Appendix-12

From the above table, it can be concluded that correlation coefficient of this company is zero. This means that there is low or no relationship between the two variables under study. The fluctuation in long term debt does not affect the net worth of this company. Since r is less than 6xP.E, the value of r is insignificant i.e. there is no evidence of correlation.

4.2.11 Regression Analysis of Long Term Debt and Shareholders' Equity

The term regression literally means stepping back towards the average. The concept of regression was first given by the English biometrician Sir Francis Galton (1822-1911) in reports of his research on heredity. Regression analysis is used to estimate the likely value of one variable from the known value of the other variable i.e. in regression analysis a kind of average irreversible functional relationship between the two variables can be established. The cause and effect relationship is clearly indicated

through the regression analysis than by correlation. It is considered as a useful tool for determining the strength of relationship between two (Simple Regression) or more (Multiple Regression) variables by fitting of an equation to a set of data points, generally by the method of least square. It helps to predict or estimate the value of one variable when the value of other variables is known.

Simple Regression

The regression analysis that has been developed to study and measure the statistical relationship between two variables is known as simple linear regression analysis. In this study, the following simple regression has been analyzed.

Table No. 4.11

Regression Analysis of Long Term Debt and Shareholders' Equity

Company	Number of observation (n)	Constant (a)	Regression Coefficient (b)
Bishal Bazaar Company	1	15	0

Source: Appendix-13

The above table depicts the output of simple regression analysis of long term debt on shareholders' equity of Bishal Bazaar Company. The beta coefficient of this company is zero which indicates one million increase in shareholders' equity leads to no change in long term debt holding other variables constant. The constant value (a) is 15 which mean that if the shareholders' equity is zero then the estimated long term debt will be 15.

Regression Analysis of Total Capital on Long Term Debt

Table No. 4.12

Regression Analysis of Total Capital on Long Term Debt

Company	Number of observation (n)	Constant (a)	Regression Coefficient (b)
Bishal Bazaar Company	1	42.3	0

Source: Appendix-14

The above table is the collection of major output of simple regression analysis of total capital on long term debt. In this case, regression coefficient is zero which indicates that one million increase in long term debt leads to an average of zero increase in total capital, holding other variable constant. The constant value (a) is 42.3 which mean that if long term debt is zero then the estimated total capital will be 42.3.

Regression Analysis of EBIT on Interest

Table No. 4.13
Regression Analysis of EBIT on Interest

Company	Number of observations (n)	Constant (a)	Regression Coefficient (b)
Bishal Bazaar Company	7	-21.35	473.48

Source: Appendix-15

The table above depicts the major output of simple regression analysis of EBIT on interest of the concerned company. As far as the regression of EBIT on interest is concerned, the regression coefficient /beta coefficient is 473.48. It indicates that one million increase in interest leads to an average of 473.48 million decreases in EBIT, holding other variable constant. The constant (a) is -21.35 which means that if interest is zero then the estimated EBIT -21.35.

4.2.14 Regression Analysis of Net Profit on Sales

Note: Sales is represented by net revenue.

Table No.4.14
Regression Analysis of Net Profit on Sales

Company	Number of Observations (n)	Constant (a)	Regression Coefficient (b)
Bishal Bazaar Company	7	9.7140	0.2410

Source: Appendix-16

With respect to the above regression result of net profit on sales, the beta coefficient is 0.2410 which indicates that one million increase in sales leads to an average of 0.2410

million increase in net profit. The constant (a) is 9.7140 which means that if the value of sales is zero the estimated net profit will be 9.7140.

4.3 Major Findings of the Study

➢ Debt Equity Ratio analysis shows that the average debt equity ratio of Bishal Bazaar Company is 0.5495 which indicate that the company has lower long term debt. The long term debt has been taken only once in the year 2058/59, since then no long term debt has been used. So it can be said that the company is currently unlevered. The coefficient of variation analysis helps to conclude that the company has consistent debt equity ratio.

➢ Long term debt to total capital ratio analysis shows that the average long term debt to total capital ratio of this company is 0.3546 which again indicates that the company has lower long term debt and it is using more equity than long term debt. The coefficient of variation analysis helps to conclude that the company is more consistent in nature.

➢ Total debt to net worth ratio analysis shows that the average debt to net worth ratio is 1.1595 which depicts that the company is using comparatively less amount of total debt (long as well as short term debt) in relation to net worth. The coefficient of variation analysis helps to conclude that the company is inconsistent in nature.

➢ Interest coverage ratio analysis shows that the average interest coverage ratio of this company is 477.62 which reveal that high debt servicing capacity due to the minimal use of the borrowing capacity. The coefficient of variation analysis helps to conclude that the company is highly inconsistent in nature.

➢ Return on assets ratio analysis shows that the average return on assets ratio of the company is 39.44% which reflects that the company needs to increase its profit prospects as compare to the total assets. In other words, the company must use its assets to the maximum level and reap the benefit out of it which will eventually raise its profit level. The coefficient of variation analysis helps to conclude that the company has consistent return on assets ratio.

➢ The profit margin ratio analysis shows that the company has an average profit margin of 40.35% which is quite low. Hence the company must focus on increasing its profit as already mentioned. The coefficient of variation analysis helps to conclude that the company has consistent profit margin ratio.

➢ The return on equity ratio by Du-Pont system shows that the average return on equity ratio of this company is 83.35% which indicates that the net profit of the company is higher than the equity invested. The coefficient of variation analysis

helps to conclude that the company's return on equity ratio by Du-Pont system is consistent in nature.

➢ The overall capitalization rate analysis shows that the average overall capitalization rate of this company is 128.04% which is very satisfactory even though the rate over the study period has fluctuated.

➢ The equity capitalization rate analysis shows that the average equity capitalization rate of this company is 113.91% which again reflects a satisfactory performance by the company during the study period.

➢ The analysis of financial leverage ratio shows that the average degree of financial leverage for the company during the study period is 1.1838. The coefficient of variation analysis helps to conclude that the company's degree of financial leverage is highly consistent in nature.

➢ The correlation analysis between long term debt and net worth shows that there is no relationship between the two concerned variables since r is zero, i.e. any kind of change in long term debt does not affect the company's net worth. The value of r is also less than 6xP.E hence there is no evidence of correlation and the value is insignificant.

➢ Regression analysis of long term debt on shareholders' equity shows that fluctuation on shareholders' equity does not lead to any change on long tem debt and vice versa.

➢ Regression analysis of total capital on long term debt shows that increase or decrease in long term debt does not increases or decreases the total capital of the company.

➢ Regression analysis of EBIT on interest shows that one million increase in interest leads to an average of 473.48 million decreases in EBIT, holding other variable constant.

➢ Regression analysis of net profit on sales shows that one million increase in sales leads to an average of 0.2410 million increase in net profit.

Chapter 5
Summary, Conclusion and Recommendation

Summary

Financial matter is at the centre of each and every organization whether it is a trading concern or an industry, the combination of sources of financial structure and cost of capital are the major factor affecting the calculation of profitability and its financial strength. Capital structure management is the capital part of the optimum capital structure of the firm. The appropriate proportion of their different sources of financing in the capital structure of a firm that result in minimum cost of capital and maximum value is known as optimum cost of capital structure.

Considering time and resources constraint only one public limited company namely Bishal Bazaar Company has been selected as sample public limited company in this study to fulfill the objectives of studying capital structure. The study period covers only last seven fiscal years from 2058/59 to 2064/65. The available secondary data have been analyzed using various financial and statistical tools in this study. Therefore, the reliability of the conclusions of this study is determined on the accuracy of secondary data.

By this study, it is obvious that this company has not been using its borrowing capacity to the highest level. Net profit in terms of net revenue is quite low, total assets have not been used to the maximum to increase the return. The researcher has taken problem as the capital structure problem and has undertaken the analysis of capital structure of Bishal Bazaar Company, a public limited company.

Conclusion

The main conclusions of the study in respect of capital structure of the public limited company are as follows:

➢ As the public limited company under study has low debt equity ratio, it implies greater claims of owner than the creditors. This company has borrowed long term debt only once as mentioned earlier. Hence this firm is unlevered. Total financing is done by equity shares and short term debt. A

high portion of equity provides a large margin of safety for them. From the shareholders point of view, it is not good. This low ratio is a disadvantage during the good economic position.

- ➢ Long term debt to total capital ratio of this company is also quite low. As mentioned they have not been using long term debt but they have been taking risk by using short term debt only. Hence the company's financial position is not so sound.

- ➢ The debt to net worth ratio of this company is high, i.e. the company is using lower debt in comparison to its net worth.

- ➢ The average interest coverage ratio of this company is very high which indicates that it has the strength to discharge its interest expenses from the EBIT.

- ➢ Return on total assets of this company is low which depicts that this company has been gaining low profit in comparison to the total assets.

- ➢ Profit margin ratio of this company is also low. This company is unable to achieve maximum profit from the net revenue.

- ➢ The average return on equity of this company is highest which shows that the company has been providing high satisfaction to the equity shareholders by paying well return.

- ➢ This company has higher overall capitalization and equity capitalization rate as compare to the return on equity and return on assets which indicates that it is not better and efficient to increase profitability of this company.

- ➢ Due to the no use of long term debt this company has not been able to get advantage of financial leverage.

- ➢ The correlation between long term debt and net worth is zero as the company has used long term debt only once during the study period hence there is no relationship between these two variables.

- ➢ The regression analysis of long term debt on shareholders' equity shows that fluctuation in shareholders equity does not affect long term debt. Similarly the regression analysis of total capital on long term debt shows that any fluctuation in long term debt does not change the total capital of this company.

- ➢ The regression analysis of EBIT on interest shows that increase in interest leads to decrease in EBIT. Similarly, regression analysis of net profit on sales shows that increase in sales lead to certain increase in net profit.

5.3 Recommendation

This section of the study highlights few points that can be helpful to stakeholders as well as to the company under study. These recommendations are guidelines, which would be helpful in taking prompt decisions and would be proved milestone for the future handling and improvement of the company.

➢ The company under study has fluctuating capital structure. So it is recommended that the company should try to maintain consistency in its capital structure.

➢ The company under study should go for expansion by researching the profitable opportunities and increasing the capital in the capital structure.

➢ The public limited companies in Nepal should be designed with appropriate capital structure in order to maximize shareholders' wealth and minimize the cost of capital.

➢ The company under study does not use long term debt to its full capacity. So it is recommended to use appropriate mix of all the sources of financing to enjoy the benefits of maximum profit.

➢ In general the coefficient of variation of the different calculated ratios is high which indicates that there is a greater risk. So it is suggested to reduce this risk.

➢ The company under study has low net profit which is not a good sign for the company. Hence it should increase the financial management expertise, efficiency, effectiveness and skills to utilize the debt for the better performance to increase the profit.

➢ Proper analysis and evaluation of capital mix decision is required for the company.

➢ Expansion and investment should be done by the use of its borrowing capacity with lower cost and risk so as to increase the return to the equity shareholders.

➢ Capital investment should be increased to increase the return to equity shareholders by employing the debt capital so that the return would be greater than the overall cost of capital.

➢ The company under study should search and find profitable, sound and potential investment opportunities.