

**A STUDY ON CAPITAL STRUCTURE MANAGEMENT
OF NEPALESE COMMERCIAL BANKS**

(With Special Reference to Nabil Bank and Everest Bank)

A Thesis

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RECOMMENDATION

This is to certify that the Thesis

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Faculty of Management. This Thesis is forwarded for examination.*

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and found the thesis to be the original work of the student and written according to the prescribed format. We recommend the thesis to be accepted as partial fulfillment of the requirements for

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Needless to say, to error is human being. I am not exception from it. So I am responsible for some deficiencies that may have remained in this work.

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DECLARATION

I, hereby, declare that the work reported in this thesis entitled “A Study on Capital Structure Management of Nepalese Commercial Banks (With Special Reference to Nabil Bank and Everest Bank)” submitted to Shanker Dev Campus, Faculty of Management, Tribhuvan University, is my original work done in the form of partial fulfillment for the Master’s Degree in Business Studies (M.B.S.) under the Supervision of Prakash Singh Pradhan and Kiran Thapa, Shanker Dev Campus.

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LIST OF ABBREVIATION

C.V	Coefficient of Variation
D/E	Debt to Equity Ratio
DFL	Degree of Finance Leverage
DPS	Dividend Per Share
EAT	Earning After Tax
EBIT	Earning Before Tax
EBL	Everest bank Ltd
EBT	Earning Before Tax
EPS	Earning Per Share
FY	Fiscal year
I/C	Interest Coverage
Kd	Cost of Debt
Ke	Equity Capitalization Rate
Ko	Overall Capitalization Rate
Ks	Cost of Equity
Ltd	Limited
LTD	Long Term Debt
MM	Modigliani Miller
NABIL	Nabil Bank Ltd
NI	Net Income
P.E	Probability Error
ROA	Return on Assets
ROE	Return on Equity
ROSHE	Return on Shareholders Equity
S,D	Standard Deviation
SHE	Shares holders Equity
TD	Total Debt
VL	Value of Levered firm
Vu	Value of an Unleveled firm
WACC	Weighted Average Cost of Capital

CHAPTER - I

INTRODUCTION

1.1 Background of the Study

Financial institution can be considered as the catalyst to the economic growth of a country. The development process of a country depends on the mobilization of financial resources. Development of trade, commerce and industry are the prime requisite for the attainment of the economical, political and social goals. To fulfill the purpose of planning, financial functions are often more dominate than other functions. “There is always lack of finance in underdeveloped economy because natural resources are either underutilized or unutilized in productive sectors or even other purposes i.e. social welfare and so on. Likewise, underdeveloped countries are not deficient in land, water, mineral, forest or power resources, though they may be untapped; constituting for the rapid development of the economic, there should be proper mobilization of resources. Due to various difficulties or even ignorance of the people, such resources have not been properly utilized. Hoarding could be one of the reasons for this. So, banks and other financial institutions play a vital role to encourage thrift and discourage hoardings by mobilizing the resources and removing the habit of hoarding. They pursue rapid economics growth, developing the banking habit among the people, collecting the small-scattered resources in one bulk and utilizing them in further productive purposes and lending other valuable services to the country. Thus, this gives the individuals an opportunity to borrow funds against future income, which may improve the economic well being of the borrower.

Financial institution in the economy plays a crucial role in the process of economic growth of the country. Financial institution refers to a business concern that is mainly confined to finance for the development of the trade, commerce and industry. Trade, commerce and industry are the prime factors of the economic development. Bank is a financial institution, which primarily deals in borrowing and lending. Banking is a vital

part of national economy and a vehicle for the mobilization of economy's financial resources and extension of credit to the business and service enterprises.

Nepal is one of the least developed countries in the world. It is basically an agricultural, mountainous and landlocked nation surrounded by two large, fast developing nations, China and India. About 80% of the total population is engaged in subsistence farming. Despite its large share in labor market, it paradoxically, contributes 40% to the total GDP. As most of the labor forces are underemployed it is necessary to channel the huge labor force into industrial sector. The economic development of Nepal is still in initial stage. For the economic growth and development, government has initiated various economic policies such as industrial policy, foreign investment policy privatization policy and trade & transit policy.

Nepal has adopted mixed and liberal economic policy with an implicit objective to assist the state and the private sector. Especially after restoration of the democracy, the concept of the liberalization policies has been incorporated as directive, principal and state policies. This liberalization has helped in establishing many companies, banks, finance companies and manufacturing industries. Thus, these establishments has helped the country for its development.

The growth of banking sector in Nepal is not so long. Compared to other developing or developed countries, the institutional development of banking system in Nepal is far behind. Even though the specific date of the beginning of money and banking deal in Nepal is not obvious, it is speculated that during the reign of the King Mandev the coin "Manank" and "Gunank" during the reign of the king Gunakamadev were in use. After the unification of Nepal, Prithvi Narayan Shaha had minted coin 'Mohar' in his name. An institution called "Taksar" was established in 1989 and it started to issue the coin scientifically. During the reign of Ranodip Singh an office named "Tejarath" was established in Kathmandu in 1993(B.S.) It used to provide loans to government officials and people against deposit of gold and silver. It had also extended its branches outside Kathmandu valley for providing loan. But this office had no right to accept deposit of public and it had no characteristics of modern banks. (Bhandari, 2004:6).

After the establishment of Nepal Bank Limited on 30th Kartik, 1994 (B.S.), modern banking system started in Nepal. Under the Nepal Rastra Bank Act 2012, Nepal Rastra Bank was established in 2013, Baishakh 14th in Nepal. Rastriya Banijya Bank was established in Government sector in 2022 and Agricultural Development Bank in 2024, 7th Magh. Nepal Arab Bank limited is the 1st joint venture bank established in 2041 under the Commercial Bank Act 2031 and Companies Act 2021. (Shrestha, 2004:2)

Capital structure is one of the most complex areas of financial decision making due to its inter-relationship with other financial decision variables. A financial manager must understand the firm's capital structure and its relationship to risk return and value for attainment of its primary objective of wealth maximization.

Capital structure is very crucial part of the financial management as the various composition of debt and equity capital may impact differently on risk and rate of return to equity shareholders. The funds required by business enterprises are raised either through the ownership securities (i.e. equity shares and preference shares) and creditor shares (i.e. debentures or bonds). A business enterprise has to maintain proper mix of both the securities in manner that the cost and risk perception to the shareholders are minimized. The mix of different securities is portrayed by the firm's capital structure (Kothari, 1990:105).

Capital is a scarce source and much more essential to maintain smooth operation of any firm. The available capital and financial sources should be utilized efficiently so that it can generate maximum return.

Capital structure is considered as the mix of debt and equity and to operate in long run prospect. A firm must concentrate in its proportion. A firm can raise required fund by issuing various types of financial instruments. Investors and creditors being the key supplies of capital, they take greater degree of risk and hence have claims over firm's assets and cash flow. Similarly debt holders are also a source of financing fund and they take risk even though the firm's cash flow is uncertain. On the other hand, if a firm issues preference share, those shareholders have the priority in payment of dividend is fixed as

the percentage of interest to debt, it is preferably paid off only after interest payment. Common shareholders are the owners of the firm, they are paid from cash remaining after all payment is being made. Since the common share i.e equity fluctuates in the market more than the preference share and debt, there is more risk.

The study of capital structure has an important place in the literature of finance. Capital structure has attracted intense debate and scholarly attention both from theorists and practitioner of financial management area over the past four decades. An important financial decision facing firms is the choice between debt and equity (Glen and Pinto, 1994:132). Capital structure, which is defined as total debt to total assets, influences the probability and riskiness of the firm (Bos and Fetherston, 1995:213).

Capital structure decisions are intertwined with other corporate decisions (Graham and Roger, 2002: 156). The financial decision of a firm involves the choice of an appropriate mix of different source of financial, namely, ownership funds and outsider funds. The term capital denotes the long-term funds of the firms normally comprising components, i.e., debt capital and equity capital. Debt capital includes long-term borrowing incurred by the firm. Equity capital consists long-term funds provided by the firm's owners. The mix of long-term debt and equity maintained by the firm is called capital structure. Capital structure shows, what percentage of the firm's capital is in equity and what percentage of firm's capital is in debt.

The above statement states in brief that either fund is raised by debt or equity financing, risk is associated in proportion of its uncertainty is being paid off. The required rate of return expected by investors according to their risks is cost of capital. Therefore obtaining necessary fund at lowest cost of capital is fully dependent upon the proportion of debt and equity i.e. financial leverage, which is actually the capital structure used by the firm.

Capital structure concepts has important place in financial management theory. It is basically concerned with shareholders wealth maximization. As capital refers to the

proportion of debt and equity, a choice in proportion is actually a financial decision in case to fulfill investment requirement. Therefore, it is always a wise decision to select a financing mix, which maximizes shareholders wealth.

The Nepalese economy is quite dynamic with favorable economic indicators, viz, stable prices, strong balance of payments position and average annual economic growth of more than 4 percent during the decade of the 1990's. These descriptions however mislead the fact that Nepal is a least developed country with widespread poverty and a gross national per capita income of US \$311 in fiscal year 2008/09, with the country ranking 136 out of 177 countries in the United Nation Development program's human development index.

The growth of the GDP at constant 1998/99 prices fluctuated over the past six years from the peak of 6.0 percent recorded in FY 2002/2003, to the lowest level of -0.4 percent in FY 2005/06. The high growth rate achieved in the FY2002/2003 resulted from an encouraging growth in the agriculture and non-agriculture sector of 4.9 percent and 6.8 percent respectively. The GDP growth rate declined to 4.8percent in 2004/05 and further dipped to -0.4 percent in the following FY 2005/06. The low growth rate recorded in the agriculture sector due to drought and double digit negative growth rate in manufacturing and trade, hotel and restaurant sub-sectors were attributed to the negative growth in that year.

The economy rebounded by 3.0 percent in the FY 2002/03 and was stagnant at 3.5 percent in FY 2004/05. The overall performance of the economy in FY 2005/06 decelerated to 2.3 percent growth due to unfavorable weather, negative growth recorded in trade, restaurant and hotel sectors due mainly to the slackness observed in trade and tourism and slowed public and private investment, which finally caused a decline the expansion and growth of banking sector and others financial institution.

It is true that Nepalese economy is Agricultural - base economy, however trade and industry is also a vital part of our economy. By the development of trade and industry

economic growth can be achieved faster which is fueled by the development and expansion of banking and hotel sector. So, here it is tried to show some facts about the Nepalese's trade. After declining to 36.5 percent in FY 2005/06 from 41.7 percent in FY 2004/05 it reached up to 39.0 percent in 2007/08 of Nepalese import and exports to GDP. This statistic has not change much between FY 2004/05 and FY 2007/08 As similar pattern can be noticed for the exports/ GDP ratio and the imports /GDP ratio while the exports /GDP ratio declined to 11.1 percent in FY 2005/06 from 13.5 percent in FY 2004/05 and stood at 11.0 percent in FY 2007/08; the import/ GDP ratio decreased to 25.4 percent in FY 2005/06 from 28.1 percent in FY 2005/06 and went up gradually to 28.0 percent in 2007/08 from the above fact it is clear that still there is huge trade deficit in Nepalese economy and will be present until the proper investment in export oriented industry and agriculture product. And for the proper and huge investment banking sector play vital role, which is interlinked with the development of tourism industry viz. hotel sector and restaurant which can earn money by providing service and deposit it in bank.

The above statement states in brief that either fund is raised by debt or equity financing, risk is associated in proportion of its uncertainty is being paid off. The required rate of return expected by investors according to their risks is cost of capital. Therefore a firm should try to obtain necessary fund at lowest cost. This cost of capital is fully dependent upon the proportion of debt and equity i.e. financial leverage, which is actually the capital structure used by the firm.

Capital structure concepts has important place in financial management theory. It is basically decision is concerned with shareholders wealth maximization. As capital refers to the proportion of debt and equity, a choice in proportion is actually financial decision in case to fulfill investment requirement. Therefore, it is a wise decision to select a financing mix, which maximizes shareholders wealth.

1.1.1 Profile of the Banks under Study

Nabil Bank Limited (Nepal Arab Bank Limited)

Nabil was incorporated in the year 1984. It commenced its operation on 12th July 1984 as the first joint venture bank in Nepal. It was listed in the Nepal Stock Exchange in the year 1986. (08/09/2042 B.S.). Dubai Bank Ltd. Dubai (Later acquired by Emirates Bank International Ltd. Dubai) was the first joint venture partner to Nabil currently, NB (International) Ltd., and Ireland is the foreign partner. Nabil Bank Limited had the official name Nepal Arab Bank Ltd. till 31st December 2001. The equity composition of Nabil is as follows:

1. NB (International) Ltd, Ireland – 50%
2. Nepal Industrial Development Corporation (NIDC)-10%
3. Rastriya Beema Sansthan -9.67%
4. Nepal Stock Exchange Limited-.33%
5. General Public-30%

NABIL Bank is the pioneer in introducing many innovative banking services and marketing concept in banking sector of Nepal. It operates its activities through 15 branches and 2 counters. It is the only bank having presence in the Tribhuvan International Airport. Some of the services provided by NABIL Bank Limited are accepting deposits, documentary credit, guarantees, collections, credit cards, Tele-banking, safe deposit, fund transfer etc. (<http://www.nabilbank.com.np>).

Everest Bank Ltd. (EBL)

Everest Bank Ltd. was registered under the company act 1964 in 19th November 1993 and started commenced banking transaction in 16th October 1994, the promoter of the bank decided to join hands with an Indian bank and entered into joint venture agreement in January 1997 AD with Punjab National Bank (PNB), which is one of the leading commercial bank of India, having over 100 years of successful banking experience and known for its strong system and procedure. A team of professionals are deputed by PNB under this arrangement. Now the bank has 38 branches including main branch in Nepal.

Nepalese promoter holds 50% and rest 30% held by General public. The main purpose of EBL is to extend professional banking services to various sectors of the society in the Kingdom of Nepal and thereby contributing in the economic development of the country.

Everest Bank Ltd. is moving towards to the consumer finance and providing different types of loans like; Home Loan, Home Equity Loan, Education Loan, Professional Loan, and Vehicle Loan etc.

1.2 Statement of the problem

This study tries to analyze and examine practice of capital management in the joint venture bank of Nepal. This study specially deals with the problem such as how the capital managements affect at the growth of bank, to what extent such policy is followed by joint venture bank and the problem faced by banking in developing and implementing the capital structure policy. Moreover what to difficulties, obstacles and problem faced in the process of maintaining financial structures will also be discussed.

Efficient capital structure is the major tool to measures the strength and weakness of the bank. Strong joint venture banks contribute to national economy and also attract further foreign investment in this sector. It may be an example to a new comer joint venture bank. Therefore the present studies seek to explore the answer the following questions.

- What is the proposition of total debt and equity capital in these institutions?
- How far the banks are able to service the debt?
- What the trend is of paid up capital in Nepalese commercial banks?
- What is the trend of total debt and equity capital employed by the banks?
- How the banks are managing their core and supplementary capital adequacy?
- How is the condition of capital adequacy in the banks?

1.4 Objective of the study

The main objective of the study is to evaluate the capital structure of Nabil Bank Ltd. and Everest Bank Ltd. In order to achieve the basic objective, the following other objectives are

- To examine the relationship of the capital structure and cost of capital of sample Bank.
- To examine the capital adequacy ratio of the sample banks.
- To analyze the relationship of capital structure with variables like earning per share, dividend per share total debt to total assets, debt to equity ratio, interest coverage ratio, return on shareholders equity of Nabil Bank and Everest Bank..
- To suggest and recommend on the basis of major findings of the study.

1.5 Significance of the study

Research itself is very important because it aims to gain knowledge and to add the new literate in existing field. Thus, the research has its own imperative. Mainly, the study is important for the researcher to fulfill the academic requirement of master degree. On the other, the study is important for banks, researchers, scholars, investors, government and many other parties. At last, it is expected that the study will add a drop of literate in the field of bank and their working capital.

This study evaluates the capital structure of two banks by using various financial and statistical tools. This study compares the financial performance in terms of capital structure, which helps the concerned companies to formulate strategies, to face the increasing competition and to achieve the target objectives.

1.6 Limitation of the study

The studies being the partial fulfillment of master degree in business studies has some limitations of its own kind. They are:

- The study has been mainly carried out based on the published financial documents such as balance sheets, Profit and loss accounts, related journals, magazines and brochures. These published documents have their own limitations.

- The study, lack of the sufficient time, resources are the major limitations. The study has been conducted to meet partial fulfillment of the requirement for the “Master of Business study of Faculty of management, T.U.
- The study mainly based on secondary data collected from different sources.
- The study mainly concentrates only on the capital structure of NABIL & EBL.
- The study period will be covered by only five fiscal year i.e. from 2005/2006-2009/10.
- The study deals with only three commercial banks and data related to other

1.7 Organization of the study

This study has been organized into five chapters as prescribed by the University.

Chapter One contains general background of the study, statement of the research problem, objectives and scope of the study and limitation of the study. This chapter signifies the rational of this study.

Chapter Two deals with the review of literature. It includes a discussion on the conceptual framework i.e. working capital concept and its theories and review of major empirical work relating to the capital structure.

Chapter Three deals with research methodology. It consists of methodology adopted to achieve the objective i.e. research questions the models, specification of variables, sample selection, data collection and limitation of the study.

Chapter Four consists of presentation and analysis of data with different financial tools. An analysis of survey of the respondents’ opinion on various aspects of working capital management has been also presented.

Chapter Five consists of the summary and major findings of this study and recommendation for further research.

CHAPTER - II

REVIEW OF LITERATURE

This chapter consists of two parts-Conceptual Framework and Review of Related Studies. In conceptual framework, review of what has been written in academic books is carried out while review of related studies is further divided into review of journals and review of master degree thesis.

This chapter is concerned with the review of relevant literatures available in the books, journals, articles, research reports, newspapers, magazines, policy documents which are published or unpublished. Every study is very much based on past knowledge, study and experiences. The past knowledge or the previous studies should not be ignored as it provides foundation to the present study. Various thesis works done in different aspects of working capital of different organization are also reviewed for the purpose of justifying the study.

2.1 Conceptual Review

In this part discussed about the capital structure theories from the international practice and different books. From the different books the capital structure theory regarding debt and equity are defined properly and many theories regarding capital structure are presented in this chapter.

2.1.1 Conceptual Frame Work of Capital Structure Theories

The term capital structure refers to the proportion of the capital in the organization. Mainly capital structure is the mixture of the long term capital such as; debt, equity, preference share and reserves and surplus.

Value of the firm, market value of the share, net income and stakeholder desires can be fulfilled by the optimal capital structure decision. Optimal capital structure concerns the level of optimum utilization of the capital which decreases the overall cost of capital.

The question of the Existence of optimum use of leverage has been very succinctly by (Solomon,1963: 9), is that, “Given that a firm has certain structure of assets, which offers

net operating earning of given size and quality, and given a certain structure of rates in the capital market, is there some specific degree of financial leverage at which the market value of the firm's securities will be higher or the cost of capital will be lower than at other degrees of leverage.”

Capital structure is concerned with analyzing the capital composition of the organization. According to (Weston and Bringham, 1998:555), “Capital structure is the permanent financing source of the firm, represented primarily by long term debt, preferred stock, common stock, excluding all short term Credits. Thus a firm's capital structure is only a part of its financial structure. Common stock, capital surplus and accumulated retained earnings.”

According to Stephen and George second edition, page: 344, “Mixture of financial instruments used to finance the firm, is simplified to include only long term interest bearing debt and common stock including a short term liability is known as the capital structure.”

Every firm must deal with the various choices available to management for funding the investment and operations of the business over the long term. Financing

section of a firm includes the operating profit, which normally is a key source of funds available internally for an organization.

(Helfert,1997: 11-12) has stated, in this context, two key areas of strategy and trade-off decisions that are identified as: the disposition of profit and shaping of the firm's capital structure.

“As the choices are crucial to the firm's long term viability, this set of decisions is made at the highest level of the management and endorsed by the board of directors.

The first area, disposition of profits, undergoes a basic three way split of after tax operating profit among owners, lenders and retention for reinvestment in the firm. Here, the critical trade-off choice is the relative amount of dividends to be paid out versus the alternative of retaining these funds to invest in the company's growth. Payment of interest to lenders is a

matter of contractual obligation. The level of interest payments uncured relative to operating profit, however, is a direct function of management policies and actions regarding the use of debt.

The second area, the planning of capital structure proportions, involves selecting and balancing the relative proportion of funds obtained over time from ownership source and long-term debt obligation. The chosen combination is intended to support an acceptable level of overall profitability of the business. In this context, business risk and debt services requirements should be taken into account. At the same time it should match the degree of risk exposure deemed appropriate by management and the board of directors.”

“Capital structure is the permanent financing of the firm, primarily represented by long-term debt, preferred stock and common stock but excluding all short term credits.” (Western and Brigham,1998: 243).

“Capital structure is the combination of the long term sources of funding i.e. debt, preferred stock, common stock that are used to finance the firm. Optimum capital structure can be defined as the mix of debt and equity, which will maximize the market value of the firm, is represented as the credit side of the balance sheet. Further the advantage of having an optimum capital structure, if such an optimum does exist, is two fold, it maximizes the value of the firm and hence the wealth in turn increases its ability to find new wealth creating investment opportunities. Also by increase in investment in increases the economy’s rate of investment and growth.” (Solon,1969:42)

Main theories and approaches regarding capital structure are mentioned below. According to David Durand (1999), main approaches are:

- Net Income Approach.
- Net Operating Income Approach.

And other two fundamental theories are as follows:

- Traditional Approach
- Modigliani and Miller’s Approach

2.1.2 Related Terms in Capital Structure Theories:

Mainly used term in the capital structure theories are defined follow properly.

$$\text{Total market value of the firm (V)} = (S+B)$$

$$\text{Value of the equity (S)} = (V-B)$$

$$\text{Market Value of debt (B)} = (V-B)$$

EBIT= Earning before Interest and Taxes or net operating income (NOI).

I= Annual Interest charge.

E=Earning available to common stockholders (EACS).

Ke= Equity capital rate.

Kd =Debt Capitalization rate.

Ko = Overall capitalization rate.

NI = Net income.

Value and Cost related with the different securities are mentioned below:

For Debt:

$$\text{Cost of Debt} \quad (Kd) = I / B$$

$$\text{Market value Debt} \quad (B) = I / Kd$$

For Equity:

$$\text{Cost of Equity} \quad (Ke) = NI / S$$

$$\text{Market value of Equity} \quad (S) = NI / Ke$$

For Over all:

$$\text{Overall Capitalization rate:} \quad (Ko) = \text{EBIT} / V$$

Overall Capitalization rate is weighted average of the cost of debt and equity, can also be written as:

$$\text{Weighted average cost of capital (WACC / Ko):} = Wd \times Kd + We \times Ke$$

$$\text{Market value of the firm} = \text{EBIT} / Ko$$

2.1.3 Capital Structure Approaches:

Different approaches have been developed under the relevancy of capital structure to value of firm and cost of capital. Net income approach and traditional approach argued capital structure as relevant matter and net operating income approach and MM approach argued capital structure as irrelevant matter.

2.1.3.1 Net Income Approach:

Net income approach is a relevant theory of capital structure. According to this approach, the capital structure decision is relevant to the valuation of the firm and the overall cost of capital. In other words, a change in a financial leverage (proportion of debt in the capital structure) will lead to a corresponding change in the overall cost of capital as well as the total value of the firm. Therefore if we increase the ration of debt in the capital structure, the weighted average cost of capital will decline and the value of the firm as well as the market price of the ordinary shares will increase. In contrast, a decrease in the debt ratio will cause an increase in the overall cost of capital and decline both in the value of the firm as well as the market price of equity shares.

Assumptions of This Approach:

The following are the basic assumptions of net income approach. To calculate the value of firm and WACC, these assumptions are constantly used.

- There are no taxes.
- The cost of debt is less than the equity- capitalization rate or the cost of equity.
- Cost of equity and cost of debt remain constant.
- The use of debt doesn't change the risk perception of investors.
- Net operating income remains constant.
- Overall cost of capital decreases as leverage increases.

In this approach, the cost of debt, value of debt, operating income and cost of equity are defined. First of all, calculate the value of equity, then add it to the value of debt to obtain the value of firm and finally, calculate the overall cost of capital.

The effect of leverage on the firms cost of capital and the effect of leverage on the total market value of the firm is mentioned below graphically:

Figure – 2.1: Cost of Capital (Net Income Approach)

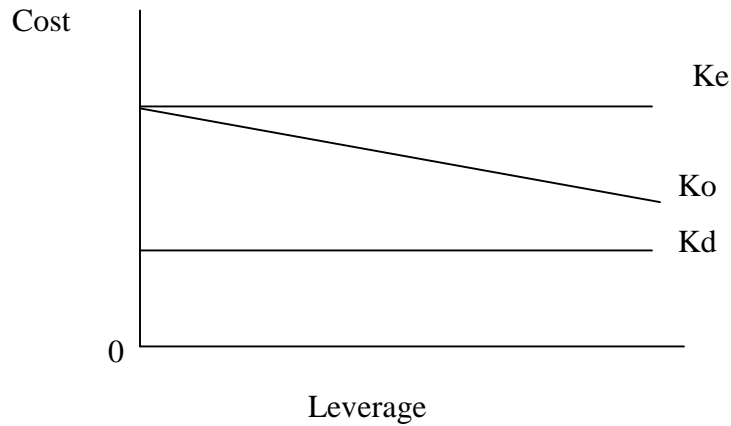
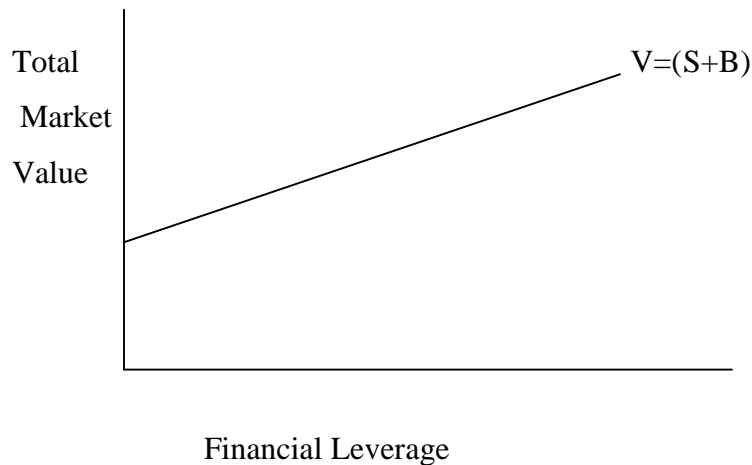


Figure – 2.2: Leverage Effect on the Total Market Value of the Firm



2.1.3.2 Net Operating Income Approach:

Net operating approach is an irrelevant theory co capital structure. This theory assumes that the cost of capital structure (proportion of debt and equity) is irrelevant to the value of the firm and overall cost of capital. Under this approach, net operating income is capitalized at an overall capitalization rate to obtain the total market value of the firm.

The market value of the debt, then, is deducted from the total market value to obtain the market value of the stock.

The main hypothesis of this approach is that the market value of the firm is not affected by the capital structure change. The required return on equity, however, increases linearly with leverage.

Assumptions of This Approach:

Following are the main basic assumptions of this approach.

- Over all cost of capital remains constant.
- Cost of debt remains constant.
- Cost of debt is less than cost of equity.
- Required return on equity increases linearly with an increase in debt ratio
- Total operating profit remains constant.

In this approach, overall cost of capital, cost of debt net operating income are defined. First of all calculate the value of firm then deduct the value of debt to obtain the value of equity and finally value of equity used to calculate the cost of equity.

Value of the Firm:

“With this approach the overall capitalization rate as well as the cost of the debt funds stays the same regardless of the financial leverage employed. However, the required return on equity, increases linearly with financial leverage.” (Van Horne and John,1997:471)

The implied required rate of return on equity (K_e) = NI / S

Alternatively, the implied required rate of return can be calculated as follows:

$$K_e = K_o + (K_o - K_i) B / S$$

This equation indicates that, if K_o and K_d are constant, K_e would be increased linearly with debt-equity ratio.

The effect of financial leverage on the value of the firm and cost of capital under NOI approach is further illustrated graphically:

Figure – 2.3: Cost of Capital (Net Operating Income Approach)

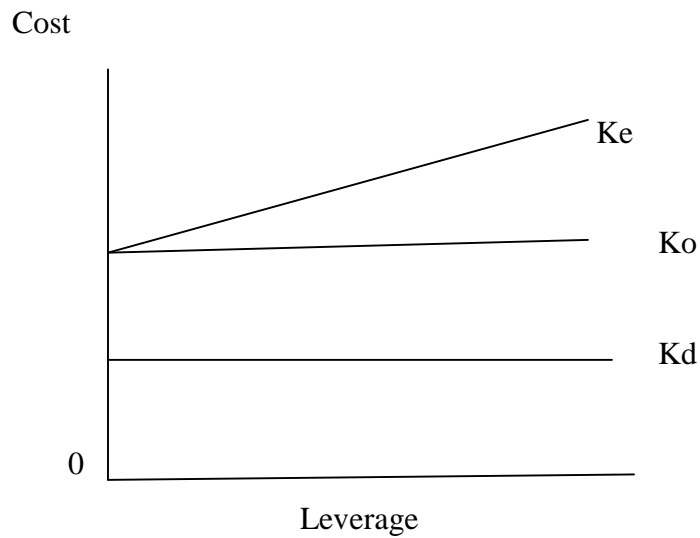


Figure – 2.4: Effect of Leverage on the Value of Firm

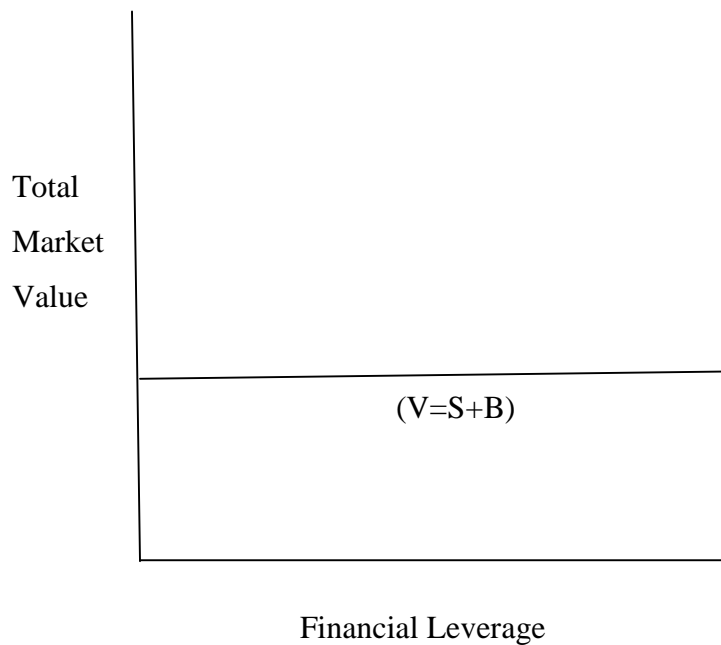


Figure mentioned above (2.3) shows that overall cost of capital and cost of debt are constant and cost of equity increases with leverage continuously. According to Pandey

(1995), page 619, “As the average cost of capital, is constant and this approach implies that there is no any unique optimum capital structure.”

2.1.3.3 Traditional Approach:

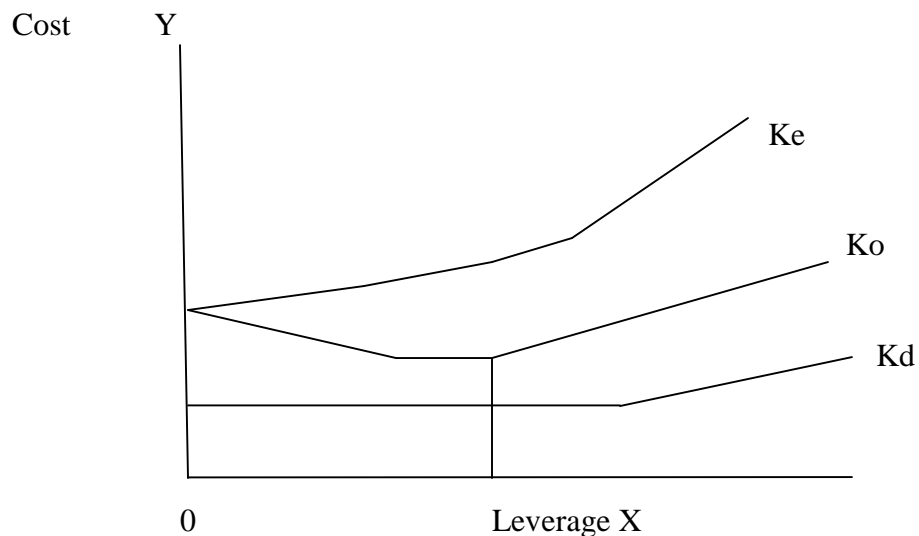
This approach assumes the capital structure as relevant matter for the value and cost of capital of the firm. It takes some features of both net income and net operating income approach. This approach strikes a balance between the two different approaches net income and net operating income.

Therefore, it is also known as the intermediate approach. It resembles the net income approach in arguing that cost of capital and total value of the firm are not independent of the capital structure. But it does not subscribe to the view of NI approach that value of a firm will necessarily increase for all degree of leverage. In one respect it shares a feature with the NOI approach that beyond a certain degree of leverage, the overall cost increases leading to a decrease in the total value of the firm.

According to this approach, there is an optimal capital structure therefore the firm can increase the total value of the firm through the wise use of leverage. The firm initially can lower its overall cost of capital through the use of cheapest cost debt and raise its total value through leverage. But the increase in leverage increases the risk to the debt holders and the debt holders demand high interest rate as a result the overall cost of capital also increases.

The effect of leverage on the firms cost of capital and the effect of leverage on the total market value of the firm is mentioned below graphically:

Figure – 2.5: Cost of Capital (Traditional Approach)



In the above figure, at first, the overall cost of capital declines with increase in debt ratio because the rise in cost of equity (k_e) does not entirely offset the use of cheaper debt funds. As a result, the weighted average cost of capital (k_o) declines with moderate use of leverage. After a point however, the increase in cost of equity (k_e) more than offsets the use of cheaper debt funds in the capital structure, and overall cost of capital (K_o) begins to rise. The rise in overall cost of capital (K_o) is supported further one cost of debt (K_d) begins to rise. The optimal capital structure is the point at which overall cost of capital (K_o) bottoms out. In the figure, this optimal capital structure is point X. thus, the traditional position implies that the cost of capital is not independent of the capital structure of the firm 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 divided into three stages.

1. First Stage: Increasing Value

At the first stage, the equity capitalization rate (K_e) rises only after a certain level of leverage and not before or rises slightly with debt. So that the use of debt does not necessarily increase the K_e . And this slight increase in K_e may not be so high as to neutralize the benefit of using cheaper fund. In other words, the advantage arising out of

the use of debt is so large that , even after allowing for higher K_e , the benefit of use of the cheaper source of fund are Still available. As result, the value of the firm, V , increases while overall cost of capital falls with increasing leverage.

Under the assumption that K_e remains constant within the acceptable limit of debt, the value of the firm will be:-

$$\begin{aligned}
 V &= S+B \\
 &= (EBIT - I)/K_e + I/K_d \\
 &= (EBIT - I)/K_e + B \\
 &= EBIT/K_e + (K_e - K_d) \times B/K_e
 \end{aligned}$$

Thus, so long as K_e and K_d are constant, the value of the firm 'V' increases at a constant rate, $(K_e - K_d)/K_e$ as the amount of debt increases.

When the formula is solved for overall capitalization rate, K_o , we get

$$K_o = EBIT/V = K_e - (K_e - K_d) \times B/V$$

This means that, with $K_e > K_d$, the average cost of capital will decline leverage.

2. Second Stage: Optimum Value

In the words of Pandey, page: 684, once the firm reached a certain degree of leverage, increase in leverage have a, negligible effect on the value, or the cost capital of the firm. This is so because the increase in the cost equity due to the added financial risk exactly offsets the advantage of low cost debt. Thus within the rank or at the specific point. The value of the firm will be maximum or cost of capital will be minimum.

3. Third Stage: Declining Value

If the Amount of debt is increased further beyond the acceptable limit, then the firm would become very risky to the creditors who would like to be compensates by a higher return such that K_i will rise .The use of debt beyond a certain point will, therefore have effect of rising the weighted average cost of capital and conversely the total value of the firm.

Overall Effect:

In the words of (Khan and Jain,1990:511), overall effect of these three stages suggest that the cost of capital in the function of leverage .Up to a point, the use of debt will favorably affect the value of firm, beyond the point, use of debt will adversely affect it. At the level of debt -equity ratio, the capital structure is an optimum capital structure. At the optimum capital structure, the marginal real cost of debt, define to include both implicit and explicit, will be equal to the real cost of equity. For the debt - equity ratio before that level the marginal real cost of debt would be less then that of equity capital ,while beyond that level of leverage, the marginal real cost of debt would exceed that of equity . Thus, there would, according to traditional view, be an optimum capital structure.

2.1.3.4 Modigliani- Miller (MM) Approach:

In 1958, two prominent financial researchers, Franco Modigliani and Merton Miller (MM), showed that, under certain assumptions, a firm's overall cost of capital, and therefore, its value, is independent of the capital structure. the Modigliani-Miller hypothesis is identified with the net operating income approach. M-M argue that ,in absence of taxes , a firm's market value and the cost of capital remains invariant to the capital structure changes. They provide analytically sound and logically consistent behavioral justification in favor of their hypothesis, and reject any other capital structure theory as incorrect. (Pandey, 1958: 686)

Assumptions of this Approach:

Following are the main basic assumption of this approach.

- There is a perfect capital market.
- There are no transaction costs of buying and selling securities.
- A sufficient numbers of buyer and seller exist in the market' so no single investor can have a significant influence on security prices.
- Relevant information is readily available to all investors and is cost-free to obtain.
- All investors can borrow or lend at the same rate.

- All investors are rational and have homogeneous expectations of a firm's earnings.
- All firms are homogeneous in riskiness.
- There are no personal or corporate taxes.
- All cash flows are perpetuities, that is, all firms expect zero growth.
- EBIT and bonds are perpetual.

In the no- tax MM case, the cost of debt and the over all cost of capital are constant regardless of a firm financial leverage position, measured as the firm's debt-to-equity ratio. As a firm increases its relative debt level, the cost of equity capital increases, reflecting the higher return requirement of stockholders due to the increased risk imposed by additional debt. The increased cost of equity capital exactly offsets the benefit of the lower cost of debt, so that the overall cost of capital does not change with changes in capital structure.

Basic Proposition:

According to (Khan and Jain, page,1990: 501) there are three basic proposition of the M-M approach, but M-M hypothesis can be best explained in term of their proposition I and II.

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 appropriate for the firm's risk class.

$$V_L = V_U = \text{EBIT (NOI)} / \text{WACC (K}_o\text{)}$$

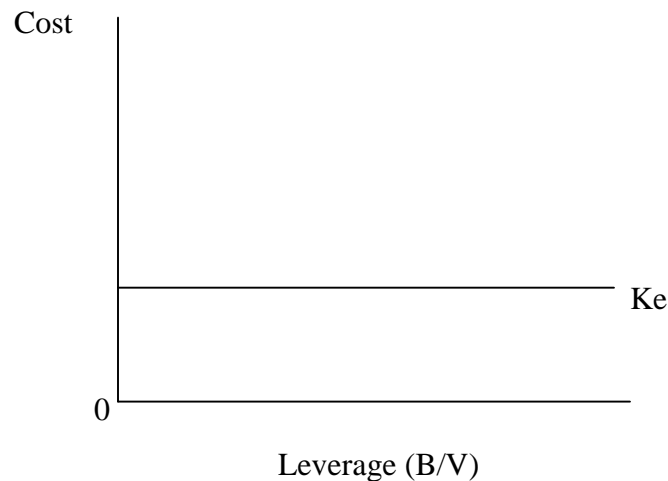
Since value as established by proposition 1 equation is constant, and then under the MM theory the value of the firm is independent of its leverage. This also implies that weighted average cost of capital (K_o) to any firm, levered or not, is:

- i. Completely independent of its capital structure.
- ii. Equal to the cost of equity to an un levered firm in the same risk class.

Thus MM's proposition 1 is identical to the Net Operating Income hypothesis.

The cost of capital under M-M proposition I is shown in the following figure which clears the average cost of capital is constant and is not affected by leverage.

Figure – 2.6: Cost of Capital (Under MM Proposition 1)



Proposition 2:

MM's proposition 2 defines the cost of equity. The cost of equity to the levered firm is equal to

- i. The cost of equity to an unlevered firm in the same risk class plus
- ii. Risk premium whose size depends on both the differential between the cost of equity and debt to an unlevered firm and the amount of leverage used.

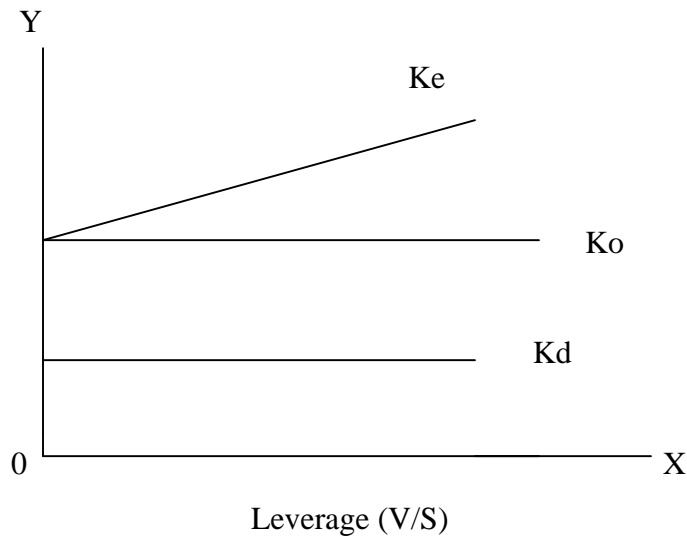
$$K_e(L) = K_e(U) + \text{Risk premium.}$$

Or

$$K_e(L) = K_e(U) + \{K_e(U) - K_d\} (B/S)$$

Proposition 2 states that as the firm's use of debt increases, its debt cost of equity also rises. Taken together, the 2- MM propositions imply that the inclusion of mere debt in the capital structure will not increase the value of the firm, because the benefits of cheaper debt will be exactly offset by an increase in the cost of equity. Thus, MM theory states that in a world with out taxes, both the value of a firm and its cost of capita are unaffected by its capital structure.

Figure – 2.7: Cost of Equity (Under the M-M Proposition 2)



Under MM hypothesis is that K_o will not rise even if very excessive use of leverage is made. This conclusion could be valid if the cost of borrowings, K_d , remains constant for any degree of leverage, but in practice, K_d increase with

leverage beyond a certain acceptable or reasonable level of debt. However, M-M maintain that even if the cost of debt, K_d , is increasing, the weighted average cost of capital, will remain constant. They argue that when K_d increase at a decreasing rate and may even turn down eventually.

This is illustrated in above figure (2.7) when K_d increases with debt, K_e will become less sensitive to further borrowing. The reason for this is that debt –holders, in extreme situation, on the firm’s assets and bares some of the firm’s business risk. Since risk of share holders is transferred to debt-holders, K_e declines.

2.1.3.5 Modigliani-Miller (MM) Approach with Corporate Taxes:

Considering tax, the theory process that the value of the firm increases with the inclusion of debt in the capital structure. The reason is that interest paid on debt deductible for tax purpose, and it reduces the tax liabilities. This means that after tax net income increases

by the amount of tax benefit resulting in an increase in the value of the firm by the same amount.

Proposition 1:

Proposition 1, the value of the firm is determined by capitalizing the net operating income (before tax) at a rate that appropriate to its risk class. When tax is considered, the value is determined by capitalizing the net income after tax instead of net operating income

The value of a livered firm is equal to:

- i. The value of un livered firm in the same risk class plus
- ii. The gain form leverage, which is the present value of the tax saving and which equals the corporate tax rate times the amount of debt the firm uses

$$V_L = V_u + BT_c$$

Where,

V_L = Value of livered firm

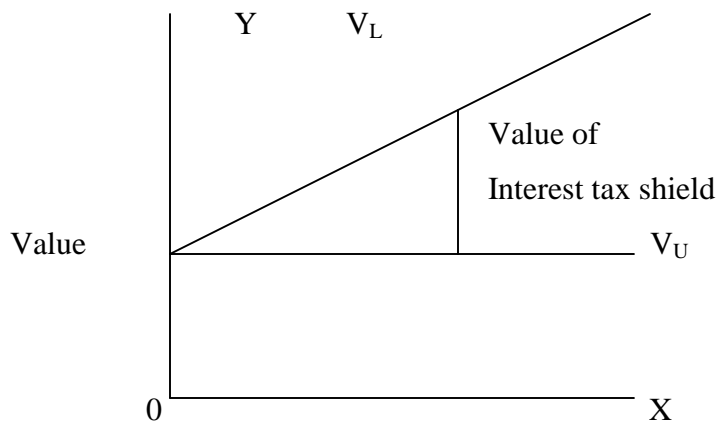
V_u = Value of unlivered firm.

BT_c = Present value of debt tax shield.

T_c = Corporate tax rate.

MM proposition 1 with taxes indicates $V_L > V_u$ and suggested that a firm's value rises continuously as moves from zero to hundred percent (0 to 100%) debt. This is clearly shown in following figure:

Figure – 2.8: Value of the Levered firm



Leverage (B/V)

Proposition 2:

MM proposition 2 stress that the cost of equity of levered firm(K_{eL}) rises with levered ratio to compensate for the additional levered risk while the cost of debt remains constant, because of the debt is assumed to be risk less .

The cost of equity to a levered firm is equal to:

- i. The cost of equity to an unlevered firm in the same risk class plus
- ii. A risk premium whose size depends on the differential between the cost of equity and debt to an unlevered firm, the amount of financial leverage and the corporate tax are:

$$K_{eL} = K_{e_u} + (K_{e_u} - K_d) (B/S)$$

When corporate and personal taxes, exists:

$$V_L = V_u + B \left[1 - \frac{(1 - T_c)(1 - T_{ps})}{(1 - T_{pd})} \right]$$

Where,

T_{ps} = Personal tax on stock.

T_{pd} = Personal tax on debt.

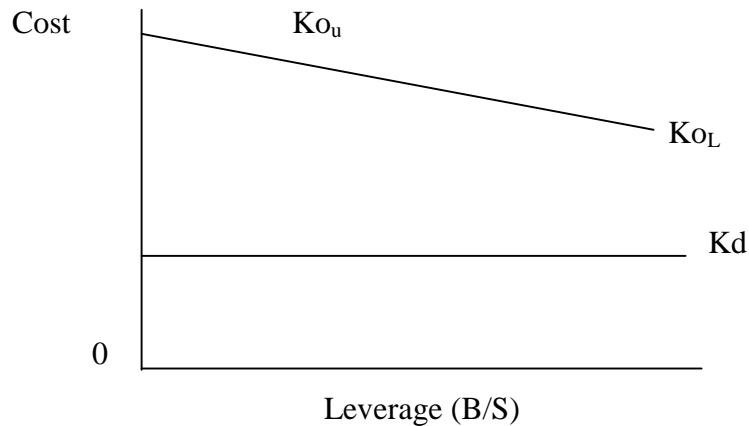
T_c = Corporate tax rate.

Value of the firm with taxes and bankruptcy costs, (Financial Distress) and agency costs.

$$V_L = V_u + PV \text{ of debt tax shields} - PV \text{ of bankruptcy and agency costs.}$$

The figure mentioned below (2.9) indicates that as the cost equity increases with the B/S ratio, the overall capitalization rate decreases continuously until it reaches to the level of cost of debt at 100% debt financing.

Figure – 2.9: Cost of Capital of the Levered Firm



MM's tax corrected view suggested that , because of the tax deductibility of interest charges, a firm can increase its value or lower its cost of capital continuously with leverage . Thus the optimum capital structure is reached when

the firm employs 100% debt. But the observed experience does not entirely support this view. In practice, firms do not employ large amounts of debt, not are lenders ready to lend beyond certain limit. Thus MM suggest that firm would adopt a target debt ratio so as not to violate the limit of the debt level imposed by lenders.

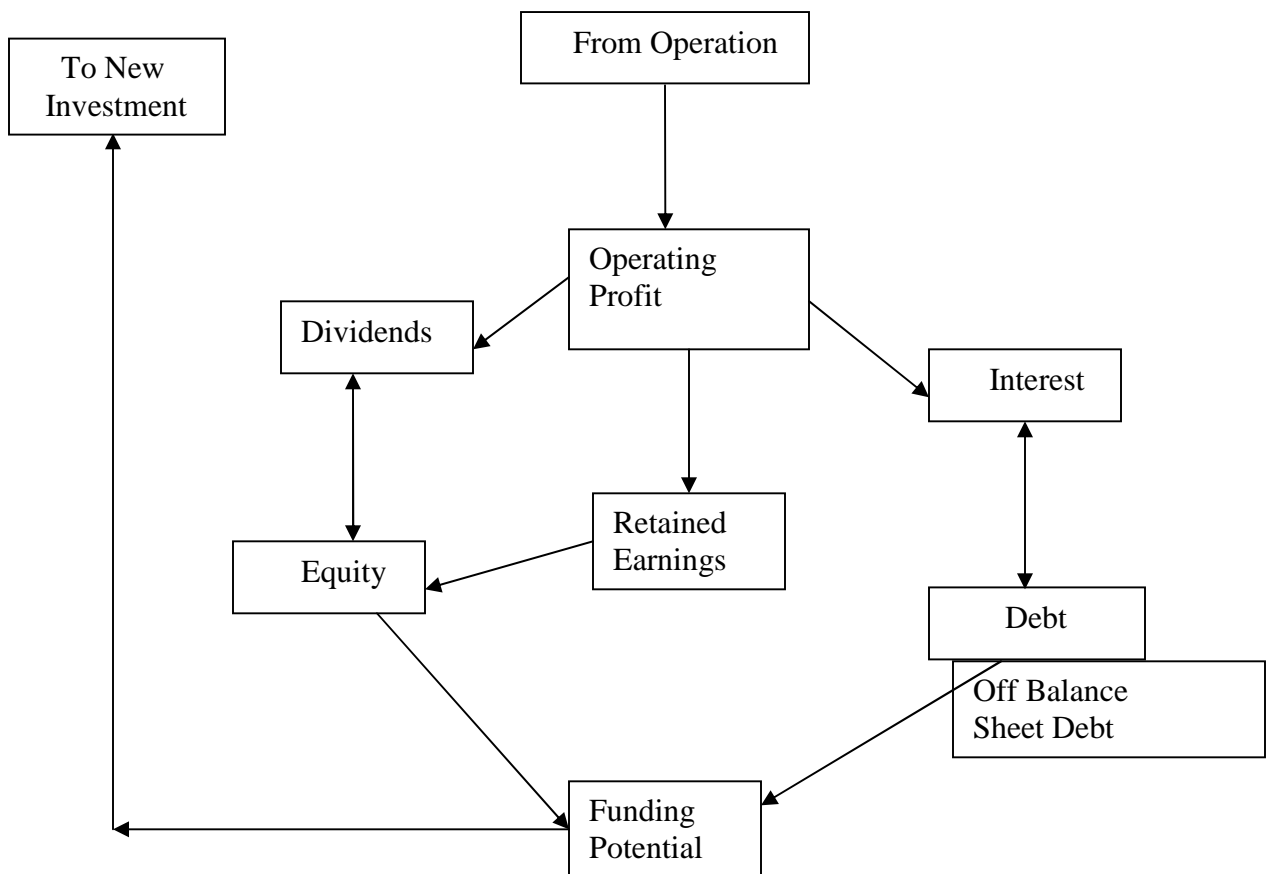
2.1.4 Capital Structure Components:

The components of capital structure of any firm can be broadly categorized into two types of funds: debt and equity. Numerous types of equity ranging from straight common equity to convertible shares and preferred stocks, can be used for new ownership funding while conversely, existing funds can also be returned through approaches of the company share in the open market. The latter has become an important aspect of capital structure management, for repurchasing stock with corporate cash flow reduce the number of shares outstanding, making each remaining share proportionately more valuable. At the same time no dividends need to be paid on the purchased shares.

The trade of each between adding value through new investment and adding value through reduced ownership claims. Although repurchase is better case of Nepal, it is restricted by the company act 2053, section No.4 Clause 47.

The choices of debt instrument are also varied. As per (Helfert,1997:13), these also include leases and similar long term obligations, which are called off balance sheet debt. Because they are no listed on the balance sheet and only impact the operating statements as annual expenses. Proper capital structure decision needs close insight of each of its components. The following figure serves for better understanding of the components and their effect in any business system.

Figure –2.10: The Business System (Financing Segment)



Source: Helfert, 1997, p. 11

The diagram shows different components of financing segment of any business system. Funding potential for any investment project is developed with the incorporation of equity and debt. Retained earnings reinforce issue of new shares. Similarly, amount of debt is supported by off balance sheet debt like leases. The operating profit is allocated to lenders as interest in debts- given out to share holders as dividend- and retained in the firm as retained earnings for further reinvestment.

2.1.5 Optimal Capital Structure:

Capital structure is a mix of long term sources of financing. The optimal capital structure in general is that mix of sources of long term funds that maximizes the value of shares and minimizes the overall cost of capital.

According to Asch and Kaye (1996), conclude that, “The optimal capital structure for an actual firm has never been specified, nor has the precise cost of capital for any given capital structure. This should not be a surprise as decisions concerning the firm’s capital structure are a matter of judgment by the management.”

According to (Van Horne, 1998:473), “Modigliani and Miller’s proposition assuming perfect capital market and absence of corporate taxes- is based on the notion that there is a conservation of investment value. No matter how the pie is divided between debt and equity claims. The size of the pie or investment value of the firm remains unchanged. Therefore, leverage is said to be irrelevant and there is no optimal capital structure.”

According to (Weston and Bringham,1981: 580), “whenever the return on assets fairly exceeds the cost of debt, leverage is favorable. And the probable return on equity is raised using it. However, leverage is a two- edged sword, and if the returns on assets are less than the cost of debt, leverage reduces the returns on equity. The more leverage a firm employs, the greater this reduction becomes. As a result, leverage may be used to boost stockholder returns, but it is used at the risk of increasing losses if the firm’s economic fortunes decline. Thus gain and losses are magnified by leverage. The higher the leverage employed by a firm. The greater will be the volatility of its returns.”

According to (Helfert,1997:296-297), “The higher the proportion of debt in the capital structure, the greater the demand will be for profit dollars to be used as interest expense, and the greater the firm’s risk exposure will be. That means potential inability to meet interest obligations and/or repayment during a downturn. The key trade-off, in this regard, is one of risk versus reward. Introducing leverage in to a capital structure will tend to lower the overall cost of capital because of the least-cost nature of debt.”

The magic of capital structure decision remains on the tax-deductibility of interest on debt. Even when interest rate is higher than the return on equity, the effective rate of interest (multiplied by a factor one minus tax rate) will be less due the pre tax deduction of interest.

(Helfert,1997: 297), further clarifies, “the overall cost of capital generally moves in a relatively narrow band between the extremes of leverage conditions, usually on more than two percentage points. This is due in part to the tax- deductibility of interest, which moderates the impact of higher rates as leverage increases. But, the cost involved in financing is one of many other considerations entering the complex trade-offs in capital structure planning.”

According to (Pradhan,1992: 243), “If we can determine the size of EBIT that makes no difference between the EPS under debt financing and the EPS under equity financing, it can be used as a cut- off level for limiting equity and debt financing.” The capital structure that can make EBIT equal to the cut-off level can be termed as optimal capital structure.

According to (Tracy, 1996: 342),“Cash dividend paid to the stock holders- even though these payments for the use of equity capital certainly can be viewed as substantially the same as interest payments for the use of debt capital – are not deductible to determine taxable income. This basic distinction has a significant impact on the amount of operating profit that has to be earned to cover company’s cost of capital.”

Although optimal capital structure can not be determined in a point level, by analyzing different variables affecting the cost of capital the range can be obtain for the proximity of optimum level.

Many study shown that, as a general rule, the cost of capital will tent to be lowest at debt proportions of around one – third versus two- thirds of equity in various forms. But specific risk characteristics of the particular company and its industry certainly affect this general result.

2.1.6 Risk Measure in Capital Structure:

(Western and Brigham,1981: 290) have presented a very clear picture about the relationship between risk and leverage and have stated: risk, as measured by the standard deviation, has a linear relationship to the debt to equity ratio measured at the book value but an upward curvilinear relationship to the debt to total assets ratio at book value. Conversely, when risk is measured by the co-efficient of variation, the relationship to the book debt to total assets ratio is linear.

Because of the theoretical relationship between beta and leverage, the relevant leverage ratios for comparison with beta are at market values. At market values, the relationship between beta and the debt to equity ratio is linear, and between beta and the ratio of debt to the total value of the firm is curvilinear upward. The different shapes of the relationship stem from the basic underlying theory of the computations involved.

But what is common to all of the six portrayals of the relationship between risk and leverage is that to obtain the higher expected earnings (whether measured by earning per share or return on shareholder's equity) that go with increased leverage, the firm must incur more risk.

There is a positive relationship between return and risk, and there is also a positive relationship between risk and the degree of leverage employed. Finally higher leverage reflects higher return and higher risk in the organization.

2.1.7 Determinants of Capital Structure:

Following factors are the determinants of the capital structure:

1.Stability of Sales and Growth Rate:

Firm whose sales are relatively stable can use more debt and incur higher fixed charges than a company with unstable sales. As far as growth rate is concerned, other things remaining the same, faster-growing firms must rely more heavily on external capital. Thus, rapidly growing firms tend to use somewhat more debt than slower growing companies.

2.Cost of Capital:

Cost of capital comprises using costs and issuing costs (flotation cost). Flotation cost of various kinds of securities should also be considered while raising funds. The cost of floating a debt is generally less than the cost of floating equity and hence it may persuade the management to raise debt financing.

3.Assets 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 in real estate companies are usually highly leveraged, whereas companies involved in technological research employ less debt.

4.Management Attitude:

Some management tends to be more conservative than others, and thus use less debt than the average firm in their industry, whereas aggressive management uses more debt in the quest for higher profits.

5. Lender Attitude:

Lender attitude frequently influence capital structure decisions. 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 for the industry, lenders may be unwilling to accept such debt increases.

6. Operating Leverage:

Other thing remaining the same, a firm with less operating leverage is better able to employ financial leverage. In other words, firms having lower degree of operating leverage can take higher degree of financial risk and use more debt to increase profit. Interaction of operating and financial leverage determines the overall effect of a change in sales on operating income and net cash flows.

Other factors like; taxes, profitability, interest rates, control, flexibility, nature and size of the firm, period of finance and legal requirements are also affect the capital structure decision.

2.1.8 Arbitrage Process:

MM model of irrelevant theory of capital structure is based on the assumption of an arbitrage mechanism. In a perfect capital market the capital structure of two firms, like every other aspect, must have the same total value. Otherwise, arbitrage will be possible, and its occurrence will cause the two firms to sell in the market at the same total value.

Arbitrage is the process of simultaneously buying and selling the same or equivalent securities in different markets to take advantage of price differences and make a profit. Arbitrage truncations are risk free.

The essence of arbitrage is that the investors are able to substitute personal or homemade leverage for corporate leverage. The behavior of the investors will have the effect of:

- i. Lowering the price of shares of the firm whose share are being sold.
- ii. Increasing the share price of the firm whose shares are being purchased. This arbitrage process will continue until the value of the two firms become equal.

Steps of Arbitrage:

- i. A rational investor sells the holding shares of a levered firm.
- ii. The investor borrows an equal amount of debt in proportional ownership in the levered firm.
- iii. The investor buys the shares of an unlevered firm in equal proportion as that of a levered firm.

Income Calculation in Livered and Un Livered Firms:

Livered firm:

Total income = Net income \times Proportion of ownership in the firm.

Unlivered firm:

Total net income = Net income of firm \times proportion of ownership – Interest on personal borrowing of debt.

In this arbitrage mechanism total income from both firms must be equal.

2.1.9 Leverage:

Leverage is the results from the use of fixed cost assets or fund to magnify returns to the firm's owners. Level of Changes in leverage occurs changes in the return and related risk.

Commonly, increase in leverage ratio brings increase in return and risk, and decrease in leverage ratio brings decrease return and risk.

The level of leverage in firm's capital structure is the mixture of long-term debt and equity balanced by the firm. Mainly, three types of leverage can be described with leverage to the firm's income statement. They are degree of operating leverage, degree of financial leverage and degree of total leverage.

Income Statement Schedule is mentioned below.

Figure-2.11: Income Statement Schedule and Types of Leverage

.....

Operating Leverage	Sales Revenue
	Less –Cost of goods sold
	Gross profit
	Less Operating expenses
Total	
Financial Leverage	Earning before interest and taxes (EBIT)
	less- interest
	Net profit before Taxes
	Less –Taxes
	Net Profit after Taxes
	Less- Preferred stock dividends
	Earning available to common stockholders
Earning per share (EPS)	

In above table, it is clear that operating leverage is concerned with the relationship between the firm's sales revenue and its operating interest and taxes or EBIT. While financial leverage is concerned with the relationship between the firm's earnings before

interest and taxes (EBIT) and its earnings per shares of common stock. The study focuses Financial Leverage as a core.

Financial Leverage:

Financial leverage, the advantage lies in the possibility that funds borrowed at a fixed interest rate can be used for investment opportunities earning a rate of return higher than the interest paid. Financial leverage, result from the presence of fix financial cost in the firm's income stream. Financial leverage can be defined as the potential use of fixed financial cost to magnify the effect of

changes in earning before interest and taxes on the firm's earning per share. The two fixed financial cost normally found on the firm's income statement which are:

-) Interest of debt and
-) Preferred Stock dividend

These changes must be paid regardless of the amount of earning before interest and tax available to pay them. The effect of financial leverage is such that an increase in the firm's earning before interest and tax result in a greater than proportional increase in the firm's earnings per share, while a decrease in the firm's earning before interest and tax result in a more than proportional decrease in Earning per share.

Measurement of Degree of Financial Leverage:

The degree of financial leverage is the numerical measure of the firm's financial leverage. It can be computed in fashion similar to that used to measure the degree of operating leverage. It can be derived by using following formula:

$$DFL = EBIT/ EBT$$

There is a financial leverage Where DFL is greater than 1.

2.2 Review of Journals and Research Works:

Modigliani and Miller (First Study):

They used the previous work of 'Allen and Smith' in support of their independence hypothesis. In first part of their work, M-M tested their proposition I, the cost of capital is irrelevant to the firm's capital structure, by correlating after tax cost of capital, with leverage B/V . They found that the correlation coefficient are statically insignificant and positive in sign. The regression line doesn't sanction a curvilinear, 'U' shaped cost of capital key of traditional view, when the data are shown in scatter diagram.

In the second part of their study, they tested their proposition II, the expected yield on common shares, is a linear function of debt to the equity ratio. The second part of their study is consistent with their views i.e. if the cost of capital borrowed fund increases, the cost of equity will decline to offsets this increase.

Modigliani and Miller (Second Study):

Second study in 1963 with correcting their original hypothesis for corporate income taxes and expected cost of capital to be affected by leverage for its tax advantages. They therefore wanted to test whether leverage had tax advantage or not. For this, they conducted the mathematical analysis regarding the effect of leverage and other variables on the cost of capital. They found that the leverage factor is significant of the tax advantage involved.

Shrestha Study (1985):

Shrestha, page: 54 researched on the, "An analysis of capital structure in selected public enterprises". In this study he has concluded that the selected public enterprises under study have a very confusing capital structure since the corporations are not guided by the objective based on financial plan and policies. In many instances ad-holism became the basic of capital structure and in that also most of them, want to criminate debt if possible to relative financial obligations. He has also suggested that, the debt equity ratio should

neither be highly levered to create too much financial obligation that lies beyond the capacity to meet target nor should it be too much low levered to infuse operational strategy to by pass responsibilities without performance. The calculation of equity capitalization rate is according to the given date providing is incredible results in many areas, although they carry valid and meaningful results in some instances.

Safieddine and Titman Study (1999):

They researched on the, “Leverage and corporate performance, evidence from unsuccessful takeovers” has revealed some facts as below.

In many of the failed takeovers, the target’s management expressed the opinion that the acquirer’s offer was insufficient and that the firm would be worth more if it remained independent. Whatever the stated reason, it is clear that investors are generally skeptical when target managers terminate a takeover attempt. The study found that investors anticipate the positive effects associated with high leverage. Despite the initial drop at the time of the termination announcement, target managers may have been acting in the interests of shareholders when they turned down the takeover offer.

The study concludes that investors under react to both leverage increasing and leverage decreasing announcements. Agreeing with the study of Daniel, Hirshleifer and Subramanyam (1998) the study argues that investors are overconfident about their abilities to value the stocks prior to the announcement. Thus the investors place too little weight on the information conveyed by the leverage changes.

Bruno and Catherine Study (1999):

Their research was on, “Optimal Leverage and Aggregate Investment”. The researchers analyzed the optimal financing of investment project when managers must exert unobservable effort and can also switch to less profitable riskier ventures. As per their findings optimal financial contracts can be implemented by a combination of debt and equity when the risk shifting problem is the most severe. While sock options are also needed when the effort problem is the most serve. Further finding of the study was that worsening of the moral hazard problems leads to decrease in investment and output at

the macroeconomic level. Moreover, aggregate leverage decreases with the risk shifting problem and increases with the effort problems.

The study has taken the conclusion of some previous studies into consideration and stated that leverage is high for regulated firms and firms in low-tech industries and it is low in high-tech industries. Similarly, leverage decreases with R&D expenditures, i.e. in innovative industries. In determining the investment decision the study found that there is a tension between two moral hazard problems. To induce the manager to exert effort, one has to promise his/her large payoffs when the cash flow generated by the firm is large. Unfortunately, this can make risk taking too attractive for the manager. When this tension is too strong, it can lead to credit rationing.

The researchers concluded that if the risk shifting problems are dominant, the optimal financing scheme is a combination of debt and outside equity. When the effort problem is the major source of moral hazard, stock options awarded to the manager must be added to the array of financial instruments.

Garvey and Hanka Article (1999):

On their article, page 519-545, “Capital Structure and Corporate Control, The Effect of Antitakeover Statutes on Firm Leverage” have stated as below.

It was found that firms protected by ‘second generation’ state Antitakeover laws substantially reduce their use of debt, and that unprotected firms to the reverse. This result supports recent models in which the threat of hostile takeover motivates managers to take on debt they would otherwise avoid. An implication is that legal barriers to takeovers may increase corporate slack.

Corporate managers have discretion over capital structure choices, as the firm’s founding shareholders cannot write a comprehensive ex ante contract specifying all future financing decisions. Most capital structure models make the simplifying assumption that managers choose capital structure in the interests of shareholders. Examples of this approach range from the classic static trade-off between tax benefits and expected costs of financial distress to Lenand and Toft’s (1996) dynamic analysis

that allows for agency problems between debt holders and shareholders. Increasingly, however, research into capital structure has explicitly recognized that managers' self-interest can lead to financial policies that do not maximize shareholder wealth. An early example is Doanaldson's (1969) field study of financing choices, which emphasizes goal such as organizational survival and growth.

Garvey and Hanka state, entrenchment models of financial policy envision managers who take on debt to reduce the threat of hostile takeover. A direct implication is that impediments to takeovers will allow managers to reduce leverage, forgoing the tax and agency benefits of debt in order to reduce the risk of financial distress and avoid constraints on their allocation of cash flows. Finally the researchers conclude that the results provide a concrete instance of the disciplinary role of takeover threats, and they support the view that capital structure is affected by managerial discretion.

2.3 Review of Related Thesis

Karki (2005) on the comparative evaluation of Capital Structure between Butwal Spinning Mills Ltd. and Jyoti Spinning Mills Ltd., analyzed the Capital Structure of these companies by using financial and statistical tools. He has concluded his study as:

- Both the sample companies have high debt equity ratio and are highly levered and increased financial risk to the considerable extent.
- Both the companies have positive correlation coefficient between long-term debt and shareholders equity. Or there is significant relationship between long-term debt and shareholders equity. But there is no significant relationship between interest payment and EBIT.
- Total debt has not been fully utilized in the management of assets.
- Debt removing capacity is weak in both the companies. And return on capital employed is not significant.
- Both the companies have negative overall capitalization and equity capitalization rate but the market value per share of those companies are higher than the par value.

To overcome these problems he has suggested to:

- Maintain Optimal Capital Structure.
- Minimize the operating cost.
- Utilize optimal capacity.

- Install diesel plant for electricity.
- Enhance competitive capacity.
- Revise the capitalization rate.
- Expand operation.

Shrestha, (2006) has concluded research on "Study on Capital Structure Management of Gorakhkali Rubber Udyog Limited". It was analyzed all the variables in the form of ratio analysis.

In these findings especially to the capital structure and profitability position, following issue had drawn.

- As compared to the shareholder's equity and the trend of debt/equity ratio the ratio was increasing every year.
- Company's debt servicing capacity was very poor due to the negative interest coverage ratio.
- The operational performance was not satisfactory due to negative earnings and low volume of sales revenue.
- The company was not able to utilize its capacity more than 50% which resulted the huge losses.

Pradhan (2007) conducted the study on " Capital Structure Position in Arihanta Multi Fiber Ltd. " In this study he concluded that the long term financial position of the company is not favorable. The company has long term debt financing to acquire fixed assets. The interest on capital employed ratio seems to be low as it fails to pay off interest. The return on owner's equity is negative, which indicated that debt capacity to generate income is not favorable. Debt to equity ratio is high, which shows the outsiders claims on return are greater than that of equity holders. These all shows that the financial risk of the company is in increasing trend.

Shakya (2008) "A Study on Capital and Assets Structure of Nepal Bank Limited" analyzed the different financial aspects of NBL and remarked that the total deposit and total investment were not significantly related. It was concluded that the net worth was used in unproductive assets of the bank and further recommended that the bank needs to have productive use of its net worth.

Dhakal (2009) has conducted research on "A Study on Capital Structure of Industrial Public Enterprises". In this study, effect of leverage was tested and measured the relationship between capital investment and earnings generations and also measured the relationship of capital structure with profit.

Under this study, it was concluded that the overall result was unsatisfactory and suggested improving their self efficiency in the financial performance. Furthermore, it was advised that the subsidy and donation should be reduced where has been the main cause of inefficiency of the management.

Giri (2010) had submitted a thesis study on "An evaluation of Capital Structure of Bottlers Nepal Limited". He has found that the long-term debt on BNL is increasing year by year because the company has borrowed more long-term debt. Different ratio analyses show the inefficient capital structure management of the company. He had made his analyses only five years periods and he suggested that the company has to follow good policy to set capital structure. The calculation of leverage position indicates the bad performance of the company because it is in increasing trend. After doing all calculations like ratio, leverage, capital structure position, correlation and P/E ratio etc, it was found that the company is facing bad situation due to inefficient capital structure. So the company has to lower down the amount of debt and to obtain additional fund through the issue of equity share by using cheaper source of collecting funds. In order to build up public image, share must be issued to the general public. Moreover the company should think about other new product for winter season to increase good image of the company. The company ahs regarded as highly geared up capital structured company. Thus, to design suitable pattern of capital structure for the company, the management must bring about a satisfactory compromise among these conflicting factors of cost, risk, control and timing. He recommended that the company to shift debt capital to equity capital when the company has high earning per share.

CHAPTER - III

RESEARCH METHODOLOGY

3.1 Introduction

Research Methodology describes the method and process applied in the entire aspects of the study focus of data, data gathering and processing and methods of analysis. Research methodology is a way to systematically solve the research problem. It may be understood as a science of studying how research is done scientifically. In it we study the various steps that are generally adopted by a researcher in studying her research problem along with the logic behind them (Kothari, 1990:10)

This chapter will include research design population and samples, sources of data, data gathering procedure, data processing procedures and analysis tools.

3.2 Research Design

As per the nature of the study, case study, field study, descriptive and analytical research design has been followed. The case study research design describes about current status of the clients of microfinance program case study was intended to assemble more detailed qualitative information from a few selected entrepreneurs. This method facilitated the capturing of interesting clients and important impact statements. Field study research design describes the attitude, values, perceptions and behavior of the participants and non-participants of the microfinance program. The descriptive research design is used to assess the opinions, behaviors or characteristics of sample beneficiaries and to describe the situation and events occurring present. Analytical research design makes analysis of collected information and data & makes a critical evaluation of it.

3.3 Nature and Sources of Data

The data used in this study are secondary in nature. Published annual reports of the concerned banks are taken as basic source of data. The data relating to financial performance are directly obtained from the concerned banks. Similarly, related books, magazines, journals, articles, reports, bulletins, data from Nepal Stock Exchange and

Nepal Rastra Bank, Central Bureau of statistics, related website from internet etc. as well as other supplementary data and various economic surveys are also used. Previous related studies to the subject are also counted as source of information.

3.4 Population and Sample:

The term “population” of universe for research means the universe of research study in which the research is based” (Pant, 2000:75). At present there are 31 commercial banks operating in Nepal and most of their stocks are traded actively in the stock market. All 31 commercial banks are the population of this study. Among them Nabil Bank and Everest Bank are chosen as samples for the present study on the basis of good financial performance.

5.5 Data Collecting Procedure

Since the data have been obtained from secondary sources, after collection of financial statement, master sheet of financial data have been extracted and tabulated as per the need of this study. In order to process the data, financial statement and other available information were reviewed. These data were grouped in different tables and charts according to their nature. Most of the data have been compiled in one form and processed and interpreted as required.

3.6 Tools and Techniques Employed

As mentioned earlier, this study is confined to the single analysis of capital structure and profitability of the private commercial bank. To reach the objectives, the collected data are computed and analyzed using statistical and financial tools.

3.6.1 Financial Analysis

A widely used tool for the financial analysis is ratio analyses. It is defined as the systematic use of ratio to interpret the financial statement so that the strength and weaknesses of a firm as well as its historical performance and current financial condition can be determined. Management should be able to analyze the financial strength so as to

find out the weakness of the company and erase them out by making rational decision. In other words, management may have different types of weaknesses, which may be the causes of unsuccessful organization. So the company should use an analytical tool to know about its own situation and take a suitable and corrective action to relieve from arisen problems. The most useful tool of financial analyses is ratio analysis.

Various ratios can be computed but ratios which are directly related with the study of leverage and profitability are computed and analyzed in this study.

1. Long term Debt to total Debt Ratio

It specifies the contribution of long term debt holders to the total debt of the company. It is calculated by Long term debt divided by the total debt.

$$\text{Long term debt to Total debt} = \frac{\% \text{ Long term debt (LTD)}}{\text{Total debt}}$$

Higher ratio indicates the higher contribution of long term debt to the total debt i.e. higher leverage risk and vice versa.

2. Long term Debt to Shareholder's Equity Ratio

This ratio also measures the leverage risk of the company. It specifies the contribution of owner to the total capital. It can be calculated by the long term debt divided by shareholders' equity.

$$\text{Long-term debt to shareholders' equity} = \frac{\text{Long term debt (LTD)}}{\text{Shareholder's equity}}$$

Higher ratio indicates the higher contribution of owner than creditors. It also indicates the lower leverage risk and vice versa.

3. Total Debt to Shareholder's Equity Ratio

The total debt to shareholder's equity ratio is vital tool used to analyze the long-term solvency of firm this ratio equals the firm's debt divided by its equity, where debt can be defined as total debt or as long-term debt .Thus, it is computed as :

$$\text{Total debt to shareholders' equality} = \frac{\text{Total debt}}{\text{Shareholder's equity}}$$

Higher ratio indicates the comparatively higher contribution of debt holders than shareholders. It also indicates that at the time of liquidation higher portion of total assets will be claimed by the debt holders.

4. Total Debt to Total Assets Ratio

It is commonly known as debt ratio. It specifies the contribution of debt holders to the total assets of the firm. It is measured by using following formula.

$$\text{Total Debt to Total assets} = \frac{\text{Total debt}}{\text{Total assets}}$$

Higher ratio specifies the higher leverage risk or higher contribution of debt holders to the total assets. Too high ratio leads the carelessness of shareholders to the business activities.

5. Shareholder's Equity to Total assets

This ratio also indirectly measures the leverage risk of the company. It can be computed either subtracting debt ratio from 1 or using following formula.

$$\text{Shareholder's equity to Total assets} = \frac{\text{Shareholder's equity}}{\text{Total assets}}$$

Higher ratio indicates the lower leverage risk and vice versa.

6. Interest Coverage ratio

The interest coverage ratio also known as the time interest-earned ratio is one of the most conventional coverage ratio used to test the firm's debt servicing capacity. This ratio

show the number of times the interest charges are covered by funds that are ordinarily available for their payment. The interest coverage ratio is thus computed as;

$$\text{Interest coverage ratio} = \frac{\text{EBIT}}{\text{Interest}}$$

Higher ratio indicates the strong debt service capacity of the company and vice versa.

Too high ratio refers the unused debt capacity of the company.

6. Long Term Debt to Capital Employed

The ratio is used to express the relationship between long-term debt and capital employed by the firm. It shows the proportion of long term debt and shareholder's fund in the capital structure. This ratio is calculated as;

$$\text{The Long term Debt to Capital Employed} = \frac{\text{Long Term Debt}}{\text{Capital Employed}}$$

The higher ratio of long term debt to capital employed ratio shows the higher contribution of long term debt to the capital structure and vice versa.

7. Return on Shareholder's Equity (ROE)

A return on shareholder's equity is calculated to see the profitability of owner's investment. The shareholder's equity includes paid-up share capital share, premium and reserves and surplus less accumulated losses. The return on shareholder's equity is net profit after taxes divided by shareholder's equity.

$$\text{Return on shareholder's equity} = \frac{\text{Net Profit after tax}}{\text{Shareholder's equity}}$$

Higher ratio is more efficient of management and utilization of shareholder's funds and vice versa.

8. Return on Assets (ROA)

A ratio between net profits to assets is known as return on asset. But generally return on asset can express the relationship between net profit after taxes and total assets.

$$= \frac{\text{Net profit after tax}}{\text{Total assets}}$$

Higher ratio implies that the available source and tools are employed efficiently.

9. Earning per share (EPS)

The income per share of common stock is known as earning per share. This ratio is mostly used in capital structure to know the availability of return for shareholders. The earnings per share are calculated by dividing the profit after taxes by the total number of common share outstanding.

$$\text{EPS} = \frac{\text{Net profit available to common shareholders}}{\text{Number of share out standing}}$$

The increasing EPS means the increasing return for shareholders.

10. Divided per Share (DPS)

Dividend per share is the earnings distributed to ordinary shareholders divided by the number of ordinary shares outstanding.

$$\text{DPS} = \frac{\text{Dividend}}{\text{Number of share outstanding}}$$

11. Overall Capitalization rate Under NI approach

The NI approach Known as relevant theory of capital structure is already discussed in former chapter. Hence, the formulas used to compute the value of the firm and overall capitalization rate under NI approach is given. Market value of the firm = market value of debt + Market value of stock.

Or, $V=B+S$

And,

$$\text{Overall capitalization rate} = \frac{\text{EBIT}}{\text{Value of the Firm}}$$

Or,

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

12. Equity capitalization Rate under NIO approach

The equity is one of the sources of capital, which has its own cost and it is known as cost of equity. A large amount of equity means the higher amount of cost of equity. The equity capitalization rate under NIO approach can be calculated as.

$$\text{Equity capitalization rate} = \frac{\text{EBT}}{\text{Market value of common shares}}$$

$$\text{Or, } K_e = \frac{\text{EBT}}{S}$$

3.6.2 Statistical Analysis

Statistical tools are equally important to meet the objectives of this study. This will help us to analyze the relationship between two or more variables. For this research following statistical tools are used. They are:

-) Arithmetic Mean
-) Standard deviation
-) Karl Pearson's coefficient of correlation
-) Probable error

) **Arithmetic mean**

Arithmetic mean also called the mean' or average arithmetic mean is the most popular and widely used method of central tendency. It is the ratio of sum of all observations. It is calculated from ungrouped data and frequency.

$$\overline{X} = \frac{\sum X}{N}$$

Where,

$$\overline{X} = \text{Mean Average}$$

$$\sum = \text{Summation}$$

$$N = \text{No of Years}$$

) **Standard Deviation**

Standard deviation is the most popular and most useful measure of dispersion and gives uniform, correct and stable results. The main characteristics of standard deviation are that, it based on mean. Furthermore a standard deviation is always a positive number and it is superior to the mean deviation. A standard deviation is the positive square root of average sum of squares of deviations of observations from the arithmetic mean of the distribution.

$$SD = \frac{\sqrt{\sum (X - \bar{X})^2}}{N}$$

Where,

SD = Standard deviation

= Summation

X = Sample Date

\bar{X} = Average mean

N = No. of Years

) **Correlation Coefficient (r)**

For the purpose of comparison and further analysis it is necessary to get a numerical measure for the correlation between two variables. A relative measure of this type is developed by Karl Pearson called Pearson's coefficient of correlation or product movement coefficient. It measures the relationship between two or more than two variables and they are so related that the change in the value of one variable is accompanied by change in the value of the other or it indicates the direction of relationship among others. It is denoted by (r). The correlation coefficient can be calculated as:

$$\text{Correlation coefficient } (r) = \frac{\sum \phi_{xy} - \frac{\sum \phi_x \sum \phi_y}{N}}{\sqrt{\sum \phi_x^2 - \frac{(\sum \phi_x)^2}{N}} \sqrt{\sum \phi_y^2 - \frac{(\sum \phi_y)^2}{N}}}$$

Where,

N = number of observations.

X and Y are variables.

The decision criteria:

When,

r = 0, there is no relationship between the variables.

r = 1, the variables are perfectly positive correlated.

r = -1, the variables are perfectly negative correlated.

) Probable Error (P.E)

The Degree of reliability of computed correlation can be judged with the help of its probable error (P.E) It can be calculated as:

$$P.E = \frac{0.6745 \sqrt{1 - r^2}}{\sqrt{N}}$$

Where,

r = correlation co-efficient.

N = number of pairs of observation

If the value of 'r' is less than the probable error there is no evidence of correlation i.e., the value of r is not significant.

If the value of r is more than 6 times of probable error the coefficient of correlation is practically certain, i.e. the value of r is significant.

CHAPTER-IV

DATA PRESENTATION AND ANALYSIS

In this chapter, data collected from the secondary sources are presented and analyzed by using the statistical tools and techniques. The analysis is based on secondary data and data are presented in tables, graphs, and charts according to need. The available data are analyzed and interpreted so that the capital structure of banks can be evaluated easily. To evaluate the capital structure and profitability management of NABIL and EBL, financial and statistical tools are used in this study.

4.1. Leverage Analysis:

Leverage and capital structure are closely related concepts linked to cost of capital and capital structure budgeting decision. Leverage results from the use of fixed cost or trends to magnify return to the firm's owners changes in leverage results in changes in level of return and associated risk. Generally increase in leverage result in increase in return and risk where as decrease in leverage result in decrease return and risk. The amount of leverage in the firm's capital structure or the mix of long term debt and equity maintained by the firm can significantly affect its value by affecting return and risk .Because of its value the financial Manager must understand how to measure and evaluate leverage when attempting to create the best capital structure.

Generally, Leverage refers to the use of special force of power to have more than normal results from a particular action. Similarly in financial term it is used to describe about utilization of funds for which the firm has to pay fixed cost and to have more return than normal having more risk as well. Leverage may be used to boost owner's returns but it is used at the risk of increasing losses if the firm's economic fortune declines. Thus gain and losses are magnified by leverage and the higher the leverage employed by the firm, the greater will be the volatility of its return. There are three types of leverage: - Operating leverage, financial leverage and combine leverage. Operating leverage is the function of fixed cost, contribution margin and sales volume.

Financial leverage is the relation between EBIT and EBT and combined leverage is the combine of operating and financial leverage.

The operating leverage is indicates the impact of changes in sales. An operating income and financial leverage exit when the capital structures of the firm comprise debt capital. Financial leverage is related to the capital structure of the firm. So, financial leverage is relevant issue of this study, which is explained in this section.

4.1.1 Analysis of Financial Leverage

When the company employs debt or other fund carrying fixed charges i.e, interest in the capital structure, financial leverage exists. If the financial leverage is high the company can have advantage of tax shield but it will affect to owner return i.e, net profit as well. Financial leverage explains the relationship between earning before interest and taxes and net profit of the company.

Two methods either dividing percentage change into EPS by percentage change into EBIT or dividing percentage change into EBT by EBIT can calculate degree of financial leverage. In this analysis of financial leverage second method is chosen. The higher the degree of financial leverage the more volatile EPS will be, all other things remaining the same. The degree of financial leverage of sampled banks is presented in the following table. The formula is follows.

$$DFL = \frac{EBIT}{EBT}$$

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