A COMPARATIVE ANALYSIS OF

CAPITAL STRUCTUREOF COMMERCIAL BANKS

(with reference to Himalayan bank and Bank of Kathmandu limited)

A Thesis

Submitted

By

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CERTIFICATION OF AUTHORSHIP

I certify the work in this thesis has not previously been submitted for a degree nor has it been submitted as part of requirements for a degree except as fully acknowledged within the text. I also certify that the thesis has been written by me. Any help that I have received in my research work and the preparation of the thesis has been acknowledged. In addition, I certify that all information sources and literature used are indicated in the reference section of the thesis.

……

Puspa Pathak

January, 2019

RECOMMENDATION LETTER

It is certified that this thesis entitled **A COMPARATIVE ANALYSIS OF CAPITAL STRUCTURE OF COMMERCIAL BANKS IN NEPAL** submitted by **PUSPA PATHAK** is an original piece of research work carried out by the candidate under my supervision. Literary presentation is satisfactory and the thesis is in a form suitable for publication. Work evinces the capacity of the candidate for critical examination and independent judgment. Candidate has put in at least 60 days after registering the proposal. The thesis is forwarded for examination.

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APPROVAL SHEET

We, the undersigned, have examined the thesis entitled **'A COMPARATIVE ANALYSIS OF CAPITAL STRUCTURE OF COMMERCIAL BANKS IN NEPAL'** presented by **PUSPA PATHAK**, a candidate for the degree of **Masters of Business Studies** (MBS) and conducted the Viva-Voce examination of the candidate. We hereby certify the thesis is worthy of acceptance.

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PUSPA PATHAK

RESEARCHER

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ABBREVIATIONS

BOK	Bank of Kathmandu Limited
B.S.	Bikram Sambat
C.E.	Capital Employed
DFL	Degree of Financial Leverage
DPS	Dividend Per Share
EBIT	Earning Before Interest and Tax
EBT	Earning Before Tax
EPS	Earning Per Share
FY	Fiscal Year
HBL	Himalayan Bank Limited
LTD	Long Term Debt
MPS	Market Price Per Share
NIB	Nepal Investment Bank Limited
NEPSE	Nepal Stock Exchange
NI	Net Income
NOI	Net Operating Income
PE	Probable Error
Rs	Rupees
ROA	Return on Assets
ROE	Return on Equity
ROSHE	Return on Shareholders' Equity
SHE	Shareholders' Equity
TD	Total Debt
TA	Total Assets

ABSTRACTS

Capital Structure is the composition of debt and equity that comprise a firm's financing of its assets. Capital structure plays vital role to increase the profitability, to ensure the minimum cost of capital and the maximum return to equity holder. The financial soundness and strengths of a bank depend to a large extent on the composition of capital and assets. The Purpose of the study was to compare the capital structure of Commercial Banks of Nepal. Himalayan Bank and Bank of Kathmandu LTDwere taken as sample on convenience sampling basis. The annual reports were used for this study which covers a period of 5yrs from 2013 to 2017.

The Findings showed that Nepalese Commercial banks do not have appropriate ratio of long term debt and have not used it properly. Banks have used low debt so as to pay lesser amount as interest on debt. The interest coverage ratio shows that banks are able to cover the interest but have not maintained higher interest coverage ratio. Return on assets and return on shareholder's equity has fluctuating trend. Banks have the problem of instable return. The use of debt and equity has fluctuated over the years and return on shareholder's equity has not been satisfactory in commercial banks of Nepal. Shareholders have not gained considerate amount in earnings from investment in shares. Banks have used low debt so as to pay lesser amount as interest on debt.

An optimal capital structure would fulfill the interest of equity shareholder and financing requirement of a company as well as other concerned groups. The study concludes that with the increased use of leverage, overall cost of capital declines and the total value of the firm rise. The firm with the highest value and the least cost of capitalization rate is considered to have the best capital structure. Similarly change in the leverage do not lead to change in the total value of the firm and market price of the share, as the overall cost of capital is independent of the degree of leverage. The commercial banks have to take corrective actions to decrease the risk.

CHAPTER-I

INTRODUCTION

1.1 Background of the Study

Commercial banks are a financial institution which accepts deposits, makes business loans, and offers different services to the customer. Banks also allow for a variety of deposit accounts, such as checking, savings, and time deposit. Banking institutions are run to make a profit and owned by a group of individuals. The dominant privately owned financial institution in Nepal and in the economies of most major countries is the commercial bank (Shakya, 2010). Banks offers the public both deposit and credit services, such as investment advice, security underwriting, selling insurance, and financial planning. Financial activities are run by banks so that their activities should be focused on interest of customers. Banks are putting their focused toward profit. Profit is only possible after delivery of quality service to the customers. Commercial banks are established to improve people's economies welfare and facility, to provide loan to the agriculture, industry and commercial and to offer banking services to the people and the country. (Pandey, 2003)

Capital structure plays a vital role in accelerating the economic growth of nation, which in turns in basically determined, among others by saving and investment propensities. But the capacity of saving in the country is quite low with relatively higher marginal propensity of consumption. As a result developing countries are badly trapped into the vicious circle of poverty. The basic problem for the developing countries is raising the level of saving and investment. In order to collect the enough saving and put them into productive channels, financial institution like banks is necessary. It will either be diverted abroad or used for unproductive consumption or speculative activities. (Goyal , 2013)

Banks are the institutions offering deposits subject to withdrawal on demand and making loans of a business nature. Banks offers wide range of financial services like credit, savings, payments services etc. Bank is concerned with the accumulation of the idle money of the general public for the purpose of advancing to others for

expenditure or investment. Awunyo-Vitor and Badu (2012) examined the effect of capital structure on performance of listed banks in Ghana. The results showed an inverse relationship between capital structure and banks performance. The implication was that banks cannot rely on debt as a measure of reducing agency cost thereby enhancing shareholders returns. Banks must control total deposit and the bank must also control investment. The bank needs to reduce its expenses and control fluctuations in the earnings per share to improve its market price per share.

Banks must safeguard money of the general public and utilize it properly. For this, optimal capital structure must be maintained by banks. Capital structure decision is a complex multi-dimensional problem thus capital structure decisions are likely to be the product of multifarious group processes (Yeogen, 2014). This clearly demands for examining the current status of commercial banks in Nepal in the context of capital structure maintained by Banks.

1.2 History of Bank

When, where and how the modern banking actually came in existence cannot be pointed out. But from the different historical facts it reveals that some banking activities have been carried out since the time immemorial. At that time merchants, money lenders, goldsmiths, etc performed the banking transactions. Latter the transactions started increasing and they became the activities of money exchange securing the valuable goods, deposit money, lending money and so on. For all these types of activities written receipts began to be used and the modern banking started. In the historic age sources say that goldsmiths and money lenders contributed to large extent in the growth of banking system. They used to store peoples gold charging nominal charges issued receipts to the depositors, which was good for payments. Latter they started advancing money charging interest on it. So the goldsmiths and money lenders started performing the functions of modern banking i.e. accepting deposits and advancing loans. However, the modern banking originated in Italy. The word bank was derived from the Italian word “Banco” which means accumulation of money or stock. Bank as an institution was originated from Italy. The bank of Venice which was established in 1157 A.D was the first bank in the history of banking and it was established to finance the monarch in the wars. The Bank of Barcelona Spain

which was established in 1404A.D. was the second bank in the World and then. The Bank of Genoa was set up in 1407 AD.

The first central bank though was the bank of England which was established in 1844 A.D. Banking has come to the present advanced form through various stages. Some sorts of banking activities have been carried out since the time immemorial. Traditional forms of banking were traced during the civilization of Greek, Rome and Mesopotamia. With large banking firms established in Florence, Rome, Venice and other Italian cities the banking activities spread throughout the Europe and it slowly spread throughout the world.

1.3 Banking Industry in Nepal

The specific date of beginning of money and banking transaction in Nepal is unknown. The banking functions were carried out in unorganized sectors. It is found that minted coins, copper coins, silver coins, and gold coins were introduced by different kings.

Institutional development of modern banking in Nepal had begun from early 1990s. With the establishment of Nepal Bank Limited in 1994 B.S, the new era of banking sector had started in Nepal. As a central bank, Nepal Rastra Bank was established in 2013 B.S. under the provision of Nepal Rastra Bank Act 2012, with the objectives of helping in the development of monetary and financial sector by undertaking various functions. Another step was added when Rastriya Banijya Bank was established in 1966(2022BS) under the Banijya Bank Act 1965(2021BS). Likewise, Agriculture Development Bank was established in 1965(2024BS) with the objective of increasing the life standard of those people who are involved in agriculture.

The banks opened before the decade of 1980s were by the government. No private sector was permitted to open banks in Nepal. The process of development adopted liberalized economic policies to develop the financial sector. As a pre-condition to economic liberalization, the Foreign Investment and Technology Transfer Act, 1981 came into existence. The government allowed private sectors to open banks. Joint venture projects were also allowed. Many joint venture commercial banks and financial institutions were established. As a result, Nepal Arab Bank Limited was

established as a first joint venture commercial bank in 1985 under the provision of Commercial Bank Act, 1974 and Company Act 1965. Then, Nepal Indosuez Bank Limited was established in 1985 and Nepal Grind lays Bank Limited in 1986. In 2001, the name of Nepal Grind lays Bank Limited has been changed into Standard Chartered Bank Nepal Limited and Nepal Indosuez Bank Limited has been changed into Nepal Investment Bank in 2002, which has not foreign share now.

After the restoration of multiparty democracy, the newly formed government adopted liberalized policies aimed at accelerating economic growth and considerably reducing state interference in business. The governments encouraged foreign and private investment by offering attractive incentives and facilities including 100% foreign ownership in all but few sectors. This help to create conductive business environment for banking. As a result, additional commercial banks came into existence. When the internal violence shows green signal to manage and Nepal Rastra Bank make ease for rules and regulations, many new commercial banks are coming existence and existing development banks and financial institutions are upgrading them as commercial banks.

1.4 Capital Structure of Commercial Banks

Every business firm or Bank requires the initial funds for its sound operation. Capital is the blood of the business. A business firm or enterprises cannot run their business without capital. Enterprises whether they are government owned or privately owned have to make pertinent capital structure decision in identifying exactly how much capital is needed to run their operation smoothly.

The fund required are generated usually by two means: equity and debt, equity provides the ownership of the firm to the shareholders. On the other hand, debt is a fund borrowed with fixed charges to be paid periodically to the debtor, the term capital structure refers to the proportion of debt and equity capital or the composition of long term sources of finance, such as preference capital debentures, long term debt and equity capital including services and surpluses (i.e. retained earnings and excluding short term debts).

The term capital structure refers to the mix of different types of funds a company uses to finance its activities. Capital structure varies greatly from one company to another. For example, some companies are financed mainly by shareholders finds whereas others make much greater use of borrowings. Firstly, we must decide what we mean by a good capital structure. This would be a capital structure, which results in a low overall cost of capital for the company, that is, a low overall rate of return that needs to be paid on funds provided. If the cost of capital is low, then the discounted value of future cash flows generated by the company is high resulting in a high overall company value. The objective is therefore to find the capital structure that gives the lowest overall cost of capital and consequently, the highest company value.

The capital structure decision affects the total value of the firm. The proper balance between debt and equity is necessary to ensure a tradeoff between risk and return to the shareholders. The capital structure of the bank should be such that leads to the value maximization. The optimal capital structure, i.e. the capital structure with reasonable proportion of debt and equity minimizes the opportunity cost of capital and maximizes the shareholders' wealth.

1.5 Focus of the study

As we have stated above the meaning and importance of the capital structure of financial institution. The main purpose of this study is to evaluate the capital structure of the private banks. The capital structure decision is a major decision, which affects the overall cost of capital, total value of the firm and earnings per share. This study is based upon the study of overall cost of capital structure by using various relative measurement tools. It considered earning per share, dividend per share, return on total assets etc. Optimal capital structure plays vital role in every organization. So, this study tries to evaluate the optimality of their capital structure using various financial variables for the purpose of comparative evaluation. Hence the focus of this study mainly deals with the effects of the capital structure on the growth of the firm and the extent to which the capital structure policy is followed by the commercial banks.

1.6 Statement of the problems

Bank plays a significant role in the economic development of the country by extending credit to the people. Although banking industry in Nepal is making remarkable progress and growth. It's not without the problems. Optimal capital structure plays vital role in every organization. There has been question about effects of the capital structure on the growth of the firm and the extent to which the capital structure policy is followed by the commercial banks. Pandey (2003) analyzed the interrelationship of capital structure with a earning per share, dividend per share and net worth of the joint venture banks. The study concluded that all the joint venture banks are using high percentage of total debt in raising the assets and all the banks are able to pay the interest.

Abor (2005) examined the effect of capital structure on profitability of the relationship between capital structure and firm value. Throughout the literature, debate has centered on whether there is an optimal capital structure for an individual firm or whether the proportion of debt usage is irrelevant to the individual firm's value. The capital structure of a firm concerns the mix of debt and equity the firm uses in its operation. Awunyo-Vitor and Badu (2012) examined the effect of capital structure on performance of listed banks in Ghana. The results showed an inverse relationship between capital structure and banks performance. The implication was that banks cannot rely on debt as a measure of reducing agency cost thereby enhancing shareholders returns. Banks must control total deposit and the bank must also control investment. The bank needs to reduce its expenses and control fluctuations in the earnings per share to improve its market price per share.

Mujahid et al (2014) studied the impact of capital structure on performance in Pakistan. The results showed that capital structure has positive impact on bank performance. Anarfo Bugn (2015) examined capital structure and banks performance in sub-Sahara Africa by the using the total debt as a proxy for capital structure since it includes both the short-term and long-term debt ratios. The results showed that the capital structure of banks in Africa is statistically insignificant. This implies that capital structure do not impact banks performance that is, banks performance does not depend on their capital structure that depends on banks performance.

An optimal capital structure would fulfill the interest of equity shareholder and financing requirement of a company as well as other concerned groups. Poudyal (2002*)* studied the impact of Capital Structure on value of a Firm to examine the interrelationship between the objectives of achieving an optimal capital structure. At the present context, the problem of banking industry is lack of optimal capital structure in the commercial banks. The success and prosperity of a bank relies heavily on maximization of the wealth of the shareholders or return on equity. Nepalese banks do not take the capital structure concept seriously. The combination of debt and equity used in the capital structure is not proportionate which in turn affects the value maximization of the bank. Thus this study addresses the problem raised by dealing with the following issues:

i) Whether the capital structure affects the growth of a bank or not?

ii) To what extent the capital structure policy is followed by the commercial banks?

iii) What are the main problems faced by the commercial banks in developing and implementing the capital structure policy?

1.7 Purpose of the study

The main objective of the study was to analyze the behavior of the capital structure of the selected commercial banks. The study involved 5 years financial data of two commercial banks to evaluate, compare and examine their capital structure. The main objectives of selected commercial banks are given below:

i) To analyze the effects of capital structure on the growth of the commercial banks in Nepal.

ii) To analyze the capital structure of the commercial banks in Nepal.

iii) To examine the relationship of capital structure with variables such as earning per share, dividend per share and net worth.

1.8 Significance of the study

First of all, it is the fact that this study is undertaken to apply the theoretical concept and knowledge of Financial Management to the practical aspect as a partial fulfillment of the requirement of Master of Business Study (MBS) under faculty of Management, Tribhuvan University. This study would contribute an overall look at the coming up new capital policies to be taken by the bank and the factors that should be taken in consideration while preparing the next year's policy. The bank which would be included in as sample would likely see the point of their weakness and significance of this study on their future plan.

This study is also important for owners, creditors and potential investors to make their attitude on investment. The study will also have significance for management, policy maker, stakeholder of the banks and others those having investment on capital structure decision.

The main significance of the study is:

1. It will be valuable property for the library use.
2. The study will be used as a pilot work for the future research.
3. It will be helpful to other Commercial Banks and others.

1.9 Limitations of the study

Each study is conducted under some constraints and limitations. Likewise this study is also limited by some common constraints. This study is prepared for partial fulfillment of MBS degree which has to be finished within a short span of time and under different strains. Some of the basic limitations are as follows:

i) This study was based on secondary data.
ii) It covered data of only five fiscal years.
iii) Only factors considering capital structure were taken into consideration.
iv) Only two banks were taken as the sample for the study among whole population.

1.10 Organization of the study

This study has been organized into five chapters. Each is developed to some aspect of the study to effect of capital structure.

The first chapter contains the introduction part of the study. It gives some earlier history of concern title and some related term as will. It present systematically of objective of the research, problem of the study, significant of the study and limitation of the study.

The second chapter is review of literature which presents some principles, theoretical aspects, some pilot studies had been made under some report, journals and some relevant studies on the topics of this thesis.

Similarly, the third chapter explains the research methodology including research design, nature and resource of data, sample size, data collection procedure, tabulation, analysis and interpretation of data, period covered of research and review of literature.

The fourth chapter presents analysis and interpretation data. It particularly concentrated to trace out the fact by the given data through the primary and as well as secondary.

The fifth chapter includes the summary, conclusions, and implications of the study. It also provides recommendations to the stakeholder of the research subject. Reference and appendix have also been incorporated at the end of the study.

CHAPTER-II
LITERATURE REVIEW

2.1 Introduction

In this chapter, the review of various articles, research studies, journals and books has been made to have a clear understanding about the comparative analysis of capital structure of commercial bank and its relevance in different part of the world. This chapter will help to recall the theories and previous studies made by various researches in different part of the world. Literature review is basically a stock taking work of available literature. The purpose of literature review is thus to find out what principle are established and what research studies have been conducted in the field of study and what remains to be done. Literature review also minimizes the risk of pursuing the dead end in research. This chapter 'literature review' has been categorized in the following headings.

- Conceptual Review
- Review of Previous Studies
    - Review of Journals
    - Review of Articles
    - Review of Previous Thesis

2.2 Conceptual Review

2.2.1 Concept of Capital Structure

Capital structure refers to the mix of long-term sources of funds such as debenture long-term debt, preference share capital and equity share capital. If companies do not plan their capital structure, they many face difficulties in rising funds to finance their activities. Thus, the firms cannot achieve their goal. The capital structure decision affects the overall cost of capital, total value of the firm and earnings per share. The financial manager should plan optimal capital. The optimal structure refers the combination of debt, preferred stock and equity, which maximize value of the firm and EPS and minimize the cost of capital. Thus, the capital structure does not affect

the total operating earnings of a firm but it affects the earning per share and value of the firm.

“Capital structure is the permanent financing of the firm, represented primarily long-term debt, preferred stock and common equity, but excluding of all short-ten credit” (Weston and Brigham, 1982). Capital Structure should not be confused with “Capitalization”. Capitalization is a quantities aspect of financial planning as it refers to the total amount of securities issued by Company, while capital structure is concerned with qualitative aspect as is refers to the kings of securities and the proportionate amounts that make up capitalization. Capitalization = total of all types of long term capital structure = proportions of types of long term capital, financial structure = Proportions of all types of long term and short term capital. (Upadhaya, 1985)

Capital structure is composition of debt and equity that comprises a firm’s financially of its assets. Both debt and equity are used in large organization. “the choice of the amount of debt and equity is made after a comparison of certain characteristics of each kinds of security of internal factor related to the firm’s operations and of external factor that can affect the firm”. (Hampton, 1986) The financial or capital structure decision is a significant managerial decision as it influences the shareholder’s return and risk. Consequently, whenever funds have to capital structure initially at the time of its promotion and subsequently, whenever funds have to be raised to finance in investments capital structure decision involved. (VanHone, 1991)

The term capital structure refers to the proportion of debt equity capital. “A company can finance its investment by variety of sources, such as debt, preference share capital and common share capital, including, reserves and surplus”(Pandey,1988). Capital structure known as financial plays refers to composition of long-term debt, preference share capital and equity share including reserve and surplus.

The basic patter of capital structure can be simple or complex. A simple capital structure consists of equity share and preference shares. But a complex capital structure consists of multi securities as equity shares, preference shares, debenture bonds etc.

The capital structure has many relevant dimensions. The financing mix is one of them other dimensions involved the investment decisions of the firm and optimal use of leverage, within the constraints imposed by the internal and external environmental conditions. These conditions, in turn affect the decision of the firm with respect to the timing of investment and financing transactions as well as the acceptable levels of risk and liquidity.

2.2.2 Approaches to Capital Structure

Some approaches to capital structure like

- Traditional approach
- Net income approach
- Net operating income approach
- Modigliani-Miller's approach

All the above have some common assumption. Weston and Brigham assumes that there is no tax on corporate income and only two types of capital are employed i.e. long term debt and common stock. While the firm's total assets are fixed, but its capital structure can be changed immediately by setting debt to repurchase common stock, or stock to retire debt. As all the earnings are paid out as dividends, the investors have the same subjective probability distributions of expected future operating earnings (EBIT) for a given firm; the operating earnings of the firm are not expected to grow, that is, the firm's expected EBIT is same in all future periods. Even though The firm's business risk is constant over time and is independent of its capital structure and financial risk, the firm is expected to continue indefinitely.

In addition to these assumptions, approach uses the following basic definitions and symbols:

S = total market value of the stock. (Equity)

B = total market value of the bonds (Debt)

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

EBIT = earnings before interest and taxed= net operating income (NOI)

I = Interest payments

Debt

$$CostofDebt(Kd) = \frac{Interest}{Debt} = \frac{I}{B}$$

$$ValueofDebt(B) = \frac{Interest}{Kd} = \frac{I}{Kd}$$

Equity or common stock

$$CostOfEquityCapital(Ks) = \frac{d1}{P0} + g$$

where,

$d1 = NextDividend$

$P0 = Currentpricepershare$

$g = ExpectedGrowthRate$

Overall or Weighted Average cost of capital

$$K = Kd(B/V) + Ks(S/V) = \frac{Kd(B)}{B+S} + \frac{Ks(S)}{B+S}$$

The total value of the firm is thus,

$$V = B + S = \frac{I}{Kd} + \frac{EBIT - I}{Ks}$$

2.2.2.1. Traditional approach

The traditional view of capital structure, which is also known as an Intermediate approach, is a compromise between the Net Income Approach and the Net Operating Income Approach. It states that when a company starts to borrow, the advantages outweigh the disadvantages. The cheap cost of debt, combined with its tax advantage, will cause the WACC to fall as borrowing increases. However as gearing increases, the effect of financial leverage causes shareholders to increase their required return (i.e., the cost of equity rises). At high gearing the cost of debt also rises because the chance of the company defaulting on the debt is higher (i.e. bankruptcy risk). So at higher gearing, the WACC will increase.

According to this view, the value of firm can be increased or the cost of capital can be reduced by a judicious mix of debt and equity capital, and that an optimum capital

structure exists for every firm. This approach very clearly implies that the cost of capital decreases within the reasonable limit of debt and then increases with leverage. Thus, an optimum capital structure exists, and it occurs when the cost of capital is either minimum or the value of firm is maximum. The statement that debt funds are cheaper than equity funds carries the clear implication that the interest rate of debt plus the increased yield on the common stock, together on the weighted basis will be less than yield (cost of equity) which existed on the common stock before debt financing (Barges, 1963). That is the weighted average cost of capital will decrease with the use of debt up to a limit.

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. (Soloman, 1963)

First stage: Increasing Value

The first stage starts with the introduction of debt in the firm's capital structure. In this stage, the cost of equity (Ks) either remains constant or rises slightly with debt because of the added financial risk. But it does not increase fast enough to offset the advantage of low cost debt. In other words, the advantage arising out of the use of debt is so large that, even after allowing for higher cost of equity, the benefit of the use of the cheaper sources of funds are still available. As a result the value of the firm (V) increases as the overall cost of capital falls with increasing leverage. During this stage cost of debt (Kd) remains constant or rises only modestly. The combined effect of all these will be reflected in increase in market value of the firm and decline in overall cost of capital (K).

Second stage: Optimum value

In the second stage, further application of debt will raise cost of debt and equity capital so sharply as to offset the gains in net income. Hence, the total market value of the firm would remain unchanged. While the firm has reached a certain degree of leverage, increase in it has a negligible effect on the value of the firm or overall cost of capital of the firm. The increase in the degree of leverage increases the cost of equity due to the added financial risk that offsets the advantage of low cost debt.

Within the range of such debt level or at a specific point, the value of the firm will be maximum or the cost of capital will be minimum.

Third stage: Declining value

Beyond the acceptable limit of leverage, the value of the firm decreases with the increase of the leverage or the overall cost of capital increases with the additional leverage, this happens because investors perceive a high degree of financial risk, which increases the cost of equity by more than enough to offset the advantage of low cost debt.

The overall effect of these three stages is to suggest that the cost of capital is a function of leverage, i.e. first falling and after reaching minimum point or range it would start rising. The relation between cost of capital and leverage is graphically shown in figure below.

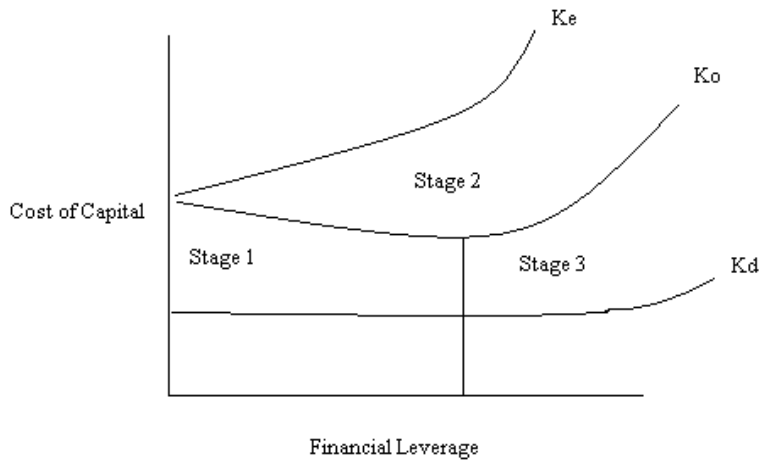

Fig 1: Effect of leverage on cost of capital under traditional theory

Source: Kandel, 2008

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

the traditional position implies that the cost of capital is not independent of capital structure of the firm and that there is an optimal capital structure.

2.2.2.2. Net Income approach

David Durand proposed the Net Income Approach. This approach stated that firm can increase its value or lower the cost of capital by using the debt capital. According to NI approach, there exists positive relationship between capital structure and valuation of firm and change in the pattern of capitalization bring about corresponding change in the overall cost of capital and total value of the firm. Thus with an increase in the ratio of debt to equity, overall cost of capital will decline and market price of equity stock as well as value of firm will rise (Durand, 1959). The converse will hold true if ratio of debt to equity tends to decline. The approach assumes no change in the behavior of both stockholders and debt holders as to the required rate of return in response to a change in the debt-equity ratio of the firm. They want to invest since debt holder are exposed to lesser degree of risk, assumed of a fixed rate of interest and are given preferential claim over the profit and assets, the debt holders' required rate of return is relatively lower than that of equity holders. So, the debt financing is relatively cheaper than equity. For this reason, at constant cost of equity (Ks) and cost of debt (Kd), the overall cost of capital (K) declines with the increased proportion of the debt in the capital structure. This suggests that higher the level of debt, lower the overall cost of capital and higher the value of firm.

It means that a firm attends an optimal capital structure when it used 100% debt financing. Running a business with 100% debt financing, however, is quite uncommon in the real world. The firm can achieve optimal capital structure by making judicious use of debt and equity and attempt to maximize the market price of its stock.

In sum, as per NI approach, increase in ratio of debt to total capitalization brings about corresponding increase in total value of firm and decline in cost of capital. On the contrary, decrease in ratio of debt to total capitalization causes decline in total value of firm and increase cost of capital. Thus, this approach is appeared as relevancy theory. This approach is based on the following assumptions:

1. The cost of equity and debt remain constant to the acceptable range of leverage.
2. The corporate income taxes do not exist.
3. The cost of debt rate is less than the cost of equity.
4. The increasing leverage brings about no deterioration in the equity of net earnings so long as borrowing is consigned to the amount below the acceptable limits.

Graphically, the effect of leverage on the firm's cost of capital and the total market value of the firm is shown below.

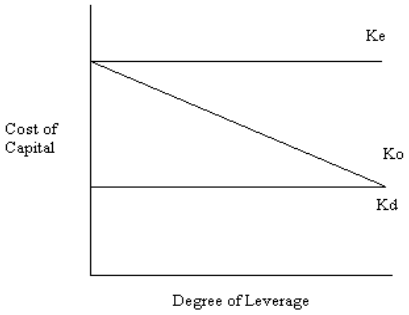

Figure 2: The Effect of Leverage On the Capital Structure

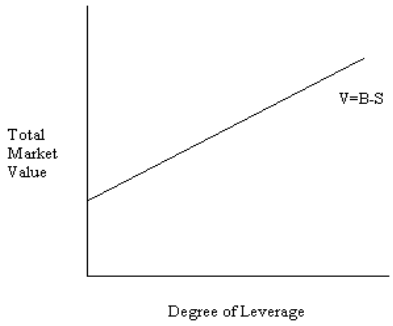

Figure 3: The Effect of Leverage on the Total Market Value of the Firm

Source: Kandel,2008

Figure 2 shows a continuous decrease in K with the increase in debt-equity ratio, since any decrease in K directly contributes to the value of the firm it increases with the increase in the debt-equity ratio (figure 3). Thus the financial leverage, according to the NI approach is an important variable in the capital structure decision of a firm. Under the NI approach, a firm can determine an optimal capital structure. If the firm is unleveled the overall cost of capital will be just equal to the equity capitalization rate.

In brief, the essence of the net income approach is that the firm can lower its cost of capital by using debt. The approach is based on the assumption that the use of debt does not change the risk perception of the investor. Consequently, the interest rate of debt and the equity capitalization rate remain constant to debt. Therefore, the

increased use of debt results in higher market value of shares and as a result, lower overall cost of capital (K).

2.2.2.3. Net Operating Income approach (NOI)

NOI approach is another behavioral approach suggested by Duran David. This approach is diametrically opposite from the NI approach with respect to the assumption of the behavior of equity holders and debt holders. The essence of this approach is that the leverage/capital structure decision of the firm is irrelevant. The overall cost of capital is independent of the degree of leverage; any change in leverage will lead to change in the value of the firm and the market price of the shares. Net operating approach is slightly different from NI approach, unlike the NI approach in NOI approach, the overall cost of capital and value of firm are independent of capital structure decision and change in degree of financing. Leverage does not bring about any change in the value of firm and cost of capital.

The main difference between NI and NOI approach is the base that investors use to value the firm. Under NOI approach, the Net operating income, i.e. the earnings before interest and tax (EBIT), instead of net income is taken as the base. Like the NI approach, the NOI approach also assumes a constant rate of Kd, which means that the debt holders do not demand higher rate of interest for higher level of leverage risk. However, unlike the assumption of NI approach, NOI approach assumes that the equity holders do react to higher leverage risk and demand higher rate of return for higher debt-equity ratio. This approach says that the cost of equity increase with the debt level and the higher cost of equity offset the benefit of cheaper debt financing resulting in no effect at all on overall cost of capital.

The NOI approach is based on following assumption:

1. The market capitalizes the value of the firm as a whole. Thus, the split between debt and equity is not important.
2. The market uses an overall capitalization rate, K to capitalize the net operating income. K depends on the business risk. If the business risk is assumed to remain unchanged, K is constant.
3. The use of less costly debt funds increases the risk of shareholders. This causes the equity-capitalization rate to increase. Thus, the

advantages of debt are offset exactly by the increase in the equity capitalization rate, Ks.

4. The debt capitalization rate, Kd is constant
5. The corporate income taxes do not exist.

The function of Ks under NOI approach can be expressed in equation as follows:

$$Ks = K + (K - Kd)B/S$$

The relationship between financial leverage and K, Ks, and Kd has been graphically depicted in following figures.

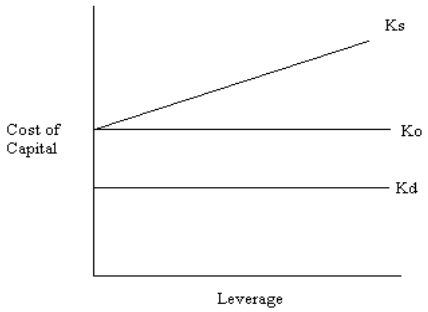

Figure 4: The Effect of Leverage on Cost of Capital

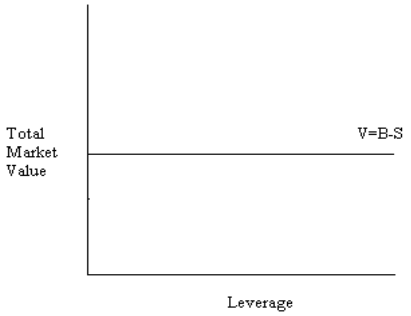

Figure 5: The Effect of Leverage on Total Market Value of the Firm

Source: Kandel,2008

In the figure 4 above, it is shown that the curve K and Kd are parallel to the horizontal X-axis and Ks are increasing continuously. This is because K and Kd remain constant under all the circumstances but the Ks increases with the degree of increase in the leverage. Thus, there is no single point or range where the capital structure is optimum. We know obviously from the figure 4 that under the NOI approach, as low cost of debt is used, its advantage is exactly offset by increase in cost of equity in such a way that the cost of capital remains constant. By this, value of the firm also remains constant. At the extreme degree of financial leverage, hidden cost becomes very high hence the firm's cost of capital and its market value are not influenced by the use of additional cheap debt fund. (Gitman, 1988)

2.2.2.4. Modigliani-Miller approach (MM approach)

The Modigliani-Miller thesis (Modigliani F and M.H. Miller, The Cost of Capital, Corporate Finance and The Theory of Investments", American Economic Review,

XLVIII June 1958) relating to the relation is akin to net operating income approach. MM approach, supporting the net operating income approach argues that, in the firm remain invariant to the capital structure changes. They make a formidable attach on the transitional position by offering behavioral justification for having the cost of capital, K, remain constant through all degree of leverage. (Ibid,) MM contend that cost of capital is equal to the capitalization rate of a pure equity stream of income ant the market value is ascertained by capitalizing its expected income at the appropriate discount rate of its risk class. MM position is based on the idea that no matter how you divide up the capital structure of a firm among debt, equity and other claims, there is conversion of investment value. (Ibid,) However, the following assumption regarding the behavior of the investors and the capital market, the actions of the firms and the tax environment are crucial for the validity of the MM hypotheses.

1. Perfect capital markets: the implication of perfect capital market is that securities are infinitely divisible, investors are free to buy and sell securities, investors can borrow without restrictions on the same terms and conditions as firms can, there are no transaction costs and investors are rational and behave accordingly.
2. Firms can be grouped into homogenous risk classes. Firms would be considered to belong to a homogeneous risk class as their expected earnings, adjust for scale differences have identical risk characteristics. The share of the homogeneous firm would be perfect substitute for one another.
3. Firms distribute all net earnings to the shareholders, i.e. dividend payout ratio is 100 percent.
4. There are no taxed. This assumption is removed later.
5. The assumption of perfect information and rationality, all investors has the same exception of firm's net operating income with which to evaluate the value of any firm.

The MM cost of capital hypotheses can be best expressed in terms of their proposition I and II. (Modigliani and Miller, 1969)

Proposition I

Given the above assumption, MM argues that for the same risk class, the total market value is independent of the debt-equity mix and is given by capitalizing the expected net operating income by the rate appropriate to the risk class (Ibid, 268).. This is their proposition I. In equation this can be expressed as follows:

$$ValueOftheFirm = MarketValueofDebt(B) + MarketValueofEquity(S)$$
$$= \frac{ExpectedNetOperatingIncome}{ExpectedOverallCapitalizationRate} = \frac{EBIT}{EBT}$$

For an unlevered firm,

$$Vu = \frac{EBIT}{Ks}$$

Where K=Ks in case of unlevered firm.

Proposition I can be expressed in terms of the firm's overall capitalization rate, K, which is the ratio of Net operating income to the market value of all its securities. That is:

$$K = \frac{NOI}{S+B} = \frac{NOI}{V}$$

K can also be expressed as

$$K = \frac{Ks(S)}{S+B} + \frac{Kd(B)}{S+B}$$

It means K is the weighted average of the expected rate of return of equity and debt capital of the firm since the cost of capital is defined as the expected net operating income divided by the total market value of the firm and since MM conclude that the total market value of the firm is unaffected by the financing mix, it follows that the cost of capital is independent of the capital structure and is equal to the capitalization rate of a pure equity stream of its class. (Pandey, 1981)

The overall cost of capital function as hypotheses by MM is shown in figure below:

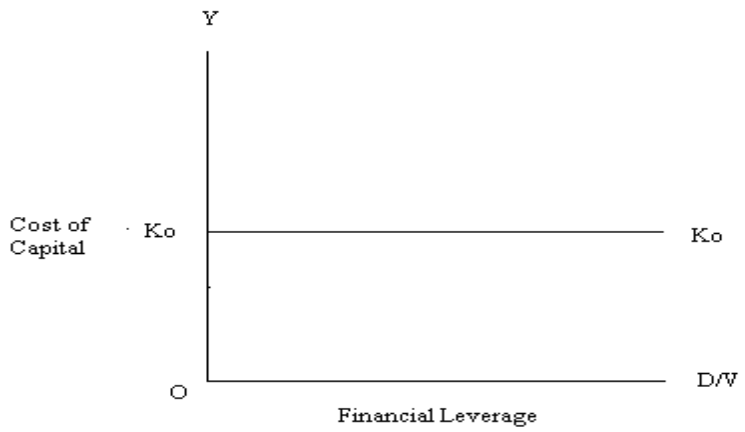

Figure 6: The Cost of Capital Under the MM Hypothesis

Source: kandel,2008

Thus two firms identical in all respects except for their capital structure cannot command different market values nor have different cost of capital. But if there is a discrepancy in the market values or the cost of capital, arbitrary will take place, which will enable investors to engage in personal leverage to restore equilibrium in the market. (Pandey, 1981)

Proposition II

MM proposition II, which defines the cost of equity, follows from their proposition me and shows the implications of the net operating approach. The proposition II states that the cost of equity rise proportionately with the increase in the financial leverage in order to compensate in the form of premium for bearing additional risk arising from the increasing leverage. (Pradhan, 1992) The equation for the cost of equity can be derived from the definition of the average cost of capital.

$$K = \frac{Ks(S)}{S+B} + \frac{Kd(B)}{S+B}$$

$$Ks = \frac{K(B+S)}{S} - \frac{Kd(B)(B+S)}{(S+B)S}$$

$$Ks = K(I + \frac{D}{S}) - \frac{Kd(D)}{S}$$

$$Ks = K + (K - Ks)\frac{B}{S}$$

The above equation states that for any firm in a given risk class the cost of equity, Ks, is equal to the constant average cost of capital, K, plus a premium for the financial risk, which is equal to debt-equity ratio times the spread between the constant average cost of capital and the interest rate. As their proportion of debt increase, the cost of equity increases continuously even though K and KD are constant, the crucial part of the MM hypothesis is that K will not rise even if very excessive use of leverage is made. This conclusion could be valid if Kd remains constant for any degree of leverage. But in practice Ks increases with leverage beyond a certain acceptable level of leverage. However, MM maintains that even if Ks are a function of leverage. K will remain constant as Ks will increase at a decreasing rate to compensate. This can be shown as:

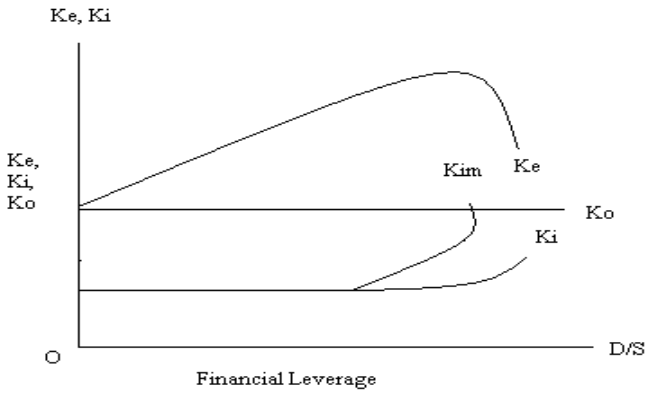

Figure 7: Behavior of Ko, Ki and Ke under MM Hypothesis

Source: Kandel,2008

It is clear from the figure that Ks will increase till the marginal rate of interest (Kim) is below the cost of capital. As soon as the marginal rate of interest cuts the cost of capital, Ks will start falling.

2.2.3 Leverage

The term leverage may be defined as the use of that source of funds in the business for which the firm has to pay fixed charges, irrespective to the earnings of firm. There are two types of leverage: Financial leverage and operating leverage. Leverage

associated with investment activities is called operating leverage and associated with financial activities is called financial leverage.

2.2.3.1 Financial leverage

Financial leverage is the ratio of total debt to total assets or the total value of the firm (Weston and Brigham, 1981). The use of fixed sources of funds, such as debt and preference capital along with the owners' equity in the capital structure is described as financial leverage (Waterman and Martin, 1963). Financial leverage refers to the response of shareholders income to change in earnings before interest and tax and is created by debt or preferred stock financing with fixed interest and dividend payment (Schell and Haley, 1983).

The debt is risky as well as more advantageous in the context of earning. The use of debt and preferred stock financing provide the income advantage over the common stock financing of the firm under the favorable condition and they increase the risk too. Leverage is employed by the company to earn more. The surplus will increase the return on equity. Since the interest and principle payments are the contractual obligation to the firm. It is risky in the viewpoint of the shareholders.

2.3 Review of Previous Studies

The Modigliani- Millers (1958) used the previous works of Allen and Smith in support of their independence hypothesis. Allen's study consisted of an analysis of the relation between security yields and financial structure for 43 large electric utilities, which is based on average figure for the years 1947 and 1948, while smith designed his study of 42 electric utilities. In the first part of their work MM tested their proposition I, the cost of capital is irrelevant to the firm's capital structure by correlation after tax cost of capital with leverage B/V. they found that the correlation co-efficient is statistically insignificant and positive in sign. In the second part of their study, they tested their proposition II the expected yield on common share is linear function of debt to equity ratio. The second part of their study is consistent with their views i.e. if the cost of borrowed funds increases, the cost of equity will decline to offset this increase. MM conducted the second study in 1963, correcting their original hypothesis for corporate income taxes and expected cost of capital to be affected by

leverage of its tax advantages or not. For this they conducted the mathematical analysis regarding the effect of leverage and other variable on the cost of capital, they found that the leverage factors are significant only because of the tax advantage involved.

Yegon et al (2014) examined the effect of capital structure on firms profitability using sampled from banks from Kenya. Their study found a positive relationship between short term debt and profitability, but found a negative relationship between long term debt and profitability. Finally, the study found no relationship between total debt and profitability. The authors argue that the implication of these findings is that the association of short term debt and the financial performance in contrast attests the static trade-off theory. The study also used a sample size of 11 which is too small for a study is this magnitude. However, it is usually the case in the studies using developing the countries. The study admitted that in the light of whole debate it is suggested that exiting theories of capital structure contribute to some extend in decision-making process through certain aspects of the theories are partially refuted. The definite reason is the fact that the capital structure decision is a complex multi-dimensional problem thus capital structure decisions are likely to be the product of multifarious group processes. Simply it is difficult if not impossible to mull over all relevant factors with bounded rationality at least in the current scenario. In-depth case study observations of individual institutions financing decision over time would be especially valuable in exploring the diversity.

Awunyo-Vitor and Badu (2012) examined the effect of capital structure on performance of listed banks in Ghana. The study used a sample of 7 banks listed on the Ghana Stock Exchange. The results showed an inverse relationship between capital structure and banks performance. The implication is that banks cannot rely on debt as a measure of reducing agency cost thereby enhancing shareholders returns. However, it is my view that 7 banks are too small to generalize the findings for banks in Ghana. The study could have rather focused on all banks irrespective of their listing status and ignore the use of the Tobin which required share price. That notwithstanding it provides a starting point for other studies to be carried out such as the one I will be conducting. The study did not advance any theory in the initial stages

of the paper except the state that it shares in the views of Modigliani and Miller (1958).

Dang (2005) examined the performance of two influential but contradicting theories of capital structure, known as the trade-off and pecking order theory. In general, our finding suggests that the trade-off theory holds well under both a partial adjustment and an error correction framework. In specifications that nest both theories, the former theory outperforms the latter theory. The introduction of the cash flow deficit variable has added little amount of additional explanatory power to the trade-off framework. Furthermore, the estimated coefficient on that variable is not fund to be statistically equal to unity as it would be if the strict interpretation of the pecking order theory were to hold. The results consistently show that the adjustment process prevails with the speed of adjustment coefficient significant and relatively high. There has been also some compelling evidence in favor of the relationships between gearing and the conventional determining factors except profitability, as predicted by trade-off framework. Non-debt tax shields and growth opportunities are reported to be inversely related to debt to the ratio, while collateral value of assets and size are found to have positive effects upon gearing. In other respect, the study has posed serious questions on the empirical validity of the pecking order theory. However, given the simplicity of the empirical model it is impossible to reject the pecking order theory prediction completely.

Abor (2005) examined the effect of capital structure on profitability of the relationship between capital structure and firm value has been the subject of considerable debate. Throughout the literature, debate has centered on whether there is an optimal capital structure for an individual firm or whether the proportion of debt usage is irrelevant to the individual firm's value. The capital structure of a firm concerns the mix of debt and equity the firm uses in its operation. Brealey and Myers contend that the choice of capital structure is fundamentally a marketing problem. According to Weston and Brigham, the optimal capital structure is the one that maximizes the market value of the firm's outstanding shares.

Other theories that have been advanced to explain the capital structure of firms include bankruptcy cost, agency theory, and the pecking order theory. Bankruptcy

costs are the cost directly incurred when the perceived probability that the firm will default on financing is greater than zero. The bankruptcy probability increases with debt level since it increases the fear that the company might not be able to generate profits to pay back the interest and the loans. The potential costs of bankruptcy may be both direct and indirect. Examples of direct bankruptcy costs are the legal and administrative costs in the bankruptcy process. Examples of indirect bankruptcy costs are the loss in profits incurred by the firm as a result of the unwillingness of stakeholders to do business with them. The use of debt in capital structure of the firm also leads to agency costs. Agency costs arise as a result of the relationships between shareholders and managers and those between debt-holders and shareholders. The need to balance gains and costs of debt financing emerged as they known as the static trade-off theory by Myers. It values the company as the value of the firm if unleveled plus the present value of the tax shield minus the present value of bankruptcy and agency costs.

Pinto & Quadras (2016) examined the impact of capital structure on financial performance Indian banks. The study covered a sample of 21 banks from both public and private sector. A period of five years was considered for the study. Three variables, via, Net profit, Net Interest Margin and Return on Capital Employed were considered as profitability control variables for the study. The debt to equity and debt to total assets have been used as proxy for the capital structure. It is observed that the financial risk of the banking industry is reducing as their debt to equity ratio is decreasing year by year. The results of the hypothesis testing reveals significant impact of debt equity ratio and debt to total assets on the net profit, net interest margin, as well as return on capital employed indicating that capital structure has a significant impact on the financial performance in the banking industry.

Mujahid et al (2014) studied the impact of capital structure on performance in Pakistan. The results showed that capital structure has positive impact on bank performance. Anarfo Bugn (2015) examined capital structure and banks performance in sub-Sahara Africa by the using the total debt as a proxy for capital structure since it includes both the short-term and long-term debt ratios. The result shows that the capital structure of banks in Africa is statistically insignificant. This implies that

capital structure do not impact banks performance that is, banks performance does not depend on their capital structure that depends on banks performance.

Goyal (2013) studied the impact of capital structure on performance of listed public-sector banks in India for establishing relationship between return on equity, return on assets, and EPS with capital structure, regression analysis has been used which showed a positive relationship of short debt with profitability. Rajkumar, P. (2014) examined the relationship between the financial leverage performances of the John Keells Holdings plc in Srilanka during the periods of 2006-2012. The findings of the study show a negative relationship between the financial leverage and the financial performance of the John Keell Holdings plc. But the financial leverage has a significant impact on the financial performance of the John Keells Holdings plc in Srilanka.

Poudyal (2002*)* studied the impact of Capital Structure on value of a Firm to examine the interrelationship between the objectives of achieving an optimal capital structure and to provide conceptual framework for the determination of the optimal capital structure. For this, a hypothetical firm was constructed and different assumptions are laid down to analyze the effect of capital structure. Various statistical and financial tools like ratio analysis are used to extract reasonable figure for the hypothetical firm. It is observed that the minimum weighted average cost of capital, maximum value of the firm and price per share are attended at debt ratio of 30%. Furthermore, if there is flexibility to select capital structure in any proportion, optimal capital structure range from 30% to 40%. An optimal capital structure would fulfill the interest of equity shareholder and financing requirement of a company as well as other concerned groups.

Pandey (2003) stressed that “one of the main objectives of a commercial bank is to safeguard the money of depositors. With the economic trends highlights the performance of the economy in the first month of the current fiscal year (mid july1997- mid March 1998). Revenue collection grew by mere 4.3% while the non-budgetary and other receipts registered a decline in absolute terms. Thus, total resources fell by 2.3%. On the expenditure side, an overall increase of 8.0% was observed. Development expenditure continued to stagnate whilst regular expenditure

surged. Consequently, the fiscal deficit widened to USD 75.5 Million. Around 75% of the fiscal deficit was financed through foreign cash loans with the remainder being financed through the sale of treasury Bills and borrowing from NRB (NRB Press Communication, 1998).

Gill et al (2011) studied the effect of capital structure on profitability by examining the effect of capital structure on profitability of the American service and manufacturing firms. A sample of 272 American firms listed on New York Stock Exchange for a period of 3 years from 2009-2007 was selected. The findings of this paper also showed a positive relationship between short-term debt to total assets and profitability, long-term debt to total assets and profitability, and between total debt to total assets and profitability in the manufacturing industry.

Shakya (2010) analyzed different ratio of Nepal SBI Bank Limited and Everest Bank Limited for the period of five years. The liquidity position of EBL is slightly stronger where as in some cases the ratio of NSBIBL is higher. It concludes that liquidity position of these two banks is sound. NBBL has better utilization of resources in income generating activity than EBL. They are on decreasing trends while interest earned to total assets and return or net worth ratio of EBL is better than NSBIBL. It seems overall profitability position of EBL is better than NSBIBL and both banks are highly leveraged.

Regmi (2007) studied about the Financial Performance of HBL and NBBL and suggested NBBL to increase its current assets because the bank is not maintaining adequate liquidity position in comparison with HBL. As capital structures of both the bank are highly levered both the banks are recommended to maintain and improve mix at debt and owner's equity by increasing equity share. He further suggests to HBL to improve the efficiency in utilizing the deposits in loan and advance for generating the profit NBBL should try to maintain present position on this regards. Profitability position of HBL is comparatively better than the same of NBBL. So, NBBL is recommended to utilize its resources more efficiently for generating more profit margins. If resources held idle, bank faces high cost and causes the low profit margin. An ideal dividend payout ratio is based upon shareholders expectations and

the growth requirement of the banks, NBBL is suggested to increase its dividend payout ratio. (Regmi, 2001)

Shah (2004*)* analyzed the debt serving capacity of the mentioned manufacturing companies, examining the relation between Return on equity and total debt, Return on equity and debt ratio, earning after tax and total debt and interest and earnings before interest and tax. Both financial tools such as ratio analysis as well as statistical tools such as correlation coefficient and regression analysis have been used as the methodology. The study revealed that Nepal Lever Ltd. is fully equity based and has not been using long term debt. The Bottlers Nepal Ltd. is free of long term debt because of improved cash flows and effective management. The Sriram Spinning Mills has 66.33% of assets financed with debt and hence there is less flexibility to the owners. The degree of Financial Leverage analysis of Jyoti Spinning Mills shows the failure of the company to gain expected profits. And the Arum Vanaspati Udhyog has a fluctuating debt equity ratio. Its long term debt is decreasing and only creditors make a small share of finance.

Pandey (2003) analyzed the interrelationship of capital structure with various important variables such as earning per share, dividend per share and net worth of the joint venture banks and to provide suggestions to overcome various issues and gaps. The study used financial tools such as Ratio Analysis, EBIT-EPS analysis, overall capitalization rate, equity capitalization rate, total value calculation etc and Statistical tools such as Karl Pearson's correlation and probable errors. The study concluded that all the joint venture banks are using high percentage of total debt in raising the assets and all the banks are able to pay the interest. The study suggested that the bank must control total deposit and the bank must also control investment. The bank needs to reduce its expenses and control fluctuations in the earnings per share to improve its market price per share.

CHAPTER-III
RESEARCH METHODOLOGY

3.1 Introduction

Researcher needs sequential steps to adopt realistic study or studying a problem with certain object/objects in view. Therefore, through research methodology researcher can get appropriate guidelines and knowledge about the various sequential steps to adopt a systematic analysis. Research methodology is the investigation tools of any certain area and it means clearly observation of certain object.

Research is the process of systematic and in depth study or search any particular topic, subject or area of investigation backed by collection presentation and interpretation of relevant details or data. This process of investigation involves a series of well throughout activities of gathering, recording, analysis and interpreting the data with the purpose of finding answers to the problem.

This chapter mainly dealt with the research methodology used to ascertain the study objectives. Under this, research design, nature and sources of data, population and sample and method of data analysis technique have been described.

3.2 Research Design

The main objective of the present study was to analyze the capital structure of the two commercial banks of Nepal. Descriptive research design and analytical study of collected data of various financial statements over the time period was used. 28 commercial banks were considered as population and two of them were taken as sample. The data of five recent fiscal years was analyzed.

3.3 Population and Sample design

There were all together 28 commercial banks in Nepal at the time of study. Yadav (2010) used two leading commercial banks of Nepal as samples in her study of capital structure. Privately owned commercial banks which have successfully completed 20 years of operation were considered for sample selection. Out of the 10 banks to do so, only 2 Commercial banks were selected as sample on the basis of convenience

sampling method. The banks used as samples were Himalayan Bank Limited and Bank of Kathmandu Limited. Data of five fiscal years were used to analyze the purpose of the study.

3.4 Data Collection Procedure

The Study was based on secondary data. For the secondary data and information, Publication of Nepal Rastra Bank, Annual Reports of NRB, Annual Reports of Himalayan Bank and Bank of Kathmandu Ltd, Annual Reports of Security board, various publications. Apart from these various books, Journal, Seminar paper available in the Library and related articles, Unpublished Master Degree Thesis.

3.5 Nature and Sources of Data

Mainly, the study was conducted on the basis of secondary data. The required data were extracted from balance sheets, profit and loss accounts and different financial schedules of concerned banks annual reports. Other supplementary data were collected from a number of institutions and regulation authorities like Nepal Rastra Bank, Nepal Stock Exchange Ltd., security exchange board, etc. and from different related websites. This study was based in the historical data of 5 year period.

3.6 Tools for Analysis

The major tool employed for the analysis of the data was ratio analysis, which established the numerical relationship between two variables of the financial statement. Besides financial tools, the statistical tools were also used.

3.6.1 Financial Tools

The financial tools that were used for data analysis are:

- Ratio analysis
- Leverage analysis
- Capital structure analysis
- Traditional analysis
- Modigliani-Miller's approach

3.6.1.1 Ratio Analysis

Ratio analysis is a technique of analyzing interpreting financial statements to evaluate the performance of an organization by creating the ratios from the figures of different accounts consisting in balance sheet and income statement. The qualitative judgment concerning financial performance of a firm can be carried out with the help of ratio analysis. Even though there are many ratios, only those ratios have been covered in this study, which are related to investment operation of the bank.

This study contains following ratios:

Long Term Debt to Total Debt

The long term debt to total debt ratio measure the percentage of long term debt to total debt used in the companies. So it is the percentage of long term debt among the total debt employed by the company.

The Long Term Debt to Total Debt is calculated as:

$$LongTermDebttoTotalDebtRatio = \frac{LongTermDebt}{TotalDebt} X100$$

Long Term Debt to Capital Employed

This 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 shareholders" fund in the capital structure. This ratio is calculated as:

$$LongTermDebttoCapitalEmployed = \frac{LongTermDebt}{CapitalEmployed}$$

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.

Debt to Total Assets

This ratio measure the extent to which borrowed funds have been used to finance the company's assets. It is related to calculate total debt to the total assets of the firm. The total debt included long term debt and current liabilities. The total assets consist of permanent assets and other assets. It is calculated as:

$$DebttoTotalAssetRatio = \frac{TotalDebt}{TotalAssets} X100$$

The lower total debt to total assets ratio indicates that the creditors claim in the total assets of the company is lower than the owner's claim and vice versa.

Debt to Equity Ratio

The debt equity ratio measures the long term components of capital structure. Long term debt and shareholder's equity are used in financing assets of the companies. So, it reflects the relative claims of creditors and shareholders against the assets of the firm. Debt to equity ratio indicated the relative proportions of debt and equity. The relationship between outsiders claim and owners' capital can be shown by debt equity ratio. It is calculated as:

$$DebttoEquityRatio = \frac{LongTermDebt}{Shareholder'sEquity} X100$$

This ratio is also known as debt to net worth ratio. A high debt equity ratio indicates that the claims of the creditors are greater than that of the shareholders or owners of the company.

Interest Coverage Ratio

This ratio indicates the ability of the company to meet its annual interest costs or it measures the debt servicing capacity of the firm. It is determined by using following formula:

$$InterestCoverageRatio = \frac{EarningBeforeInterest\tan dTax}{Interest}$$

Hence, higher interest coverage ratio indicates the company's strong capacity to meet interest obligations. A firm always prefers interest coverage ratio because low interest coverage ratio is a danger signal. Lower interest coverage ratio means the firm is using excessive debt and does not have an ability to offer assured payment of interest to the creditors.

Return on Total Assets

Return on total assets ratio measures the profitability of bank that explains a firm to earn satisfactory return on all financial resources invested in the banks' assets. The ratio explains net income for each unit of assets.

The return on total assets ratio is calculated using the formula below:

$$\mathrm{Re}turnOnTotalAssets = \frac{Net\,\mathrm{Pr}ofitAfterTax}{TotalAssets}$$

Higher ratio indicates efficiency in utilizing its overall resources and vice versa. From the point of view of judging operational efficiency, rate of return on total assets is more useful measure.

Return on Shareholders' Equity

Shareholders are the owners of the company. To measure the return of shareholders, we use return on shareholders' equity. This ratio analyze whether the company has been able to provide higher return on investment to the owners or not. It is calculated

$$\mathrm{Re}turnOnShareholder'sEquity = \frac{Net\,\mathrm{Pr}ofitAfterTax}{Shareholder'sEquity}$$

A company's owners always prefer higher ratio of return on shareholders' equity. And higher ratio represents the higher profitability of the firm and vice versa.

Earnings Per Share (EPS) Analysis

The profitability of bank from the point of view of the ordinary shareholders is earning per share. The ratio explains net income for each unit of share. Earnings per share of an organization give the strength of the share in the market. It shows how much of the total earnings belong to the ordinary shareholders. EPS is calculated as:

$$EPS = \frac{NetIncome}{NoOfSharesOuts\tan ding}$$

Dividend Per Share (DPS) Analysis

Dividend per share is calculated to know the share of dividend that the shareholders receive in relation to the paid up value of the share. A large number of present and potential investors may be interested in the dividend per share, rather than the earning per share. Therefore, an institution offering a high dividend per share is regarded as efficient in fulfilling shareholders expectations, which will also enable to increase the value of an institution.

Dividend per share is the earning distribute to ordinary shareholders divided by the number of ordinary shares outstanding, i.e.,

$$DPS = \frac{TotalDividend}{NoOfOrdinaryShares}$$

3.6.1.2 Leverage Analysis

The degree of financial leverage as part of leverage analysis also reflects the leverage of the firm as similar as above ratios. The degree of financial leverage analyzes the burden of interest expenses and financial risk of the company. The degree of financial leverage (DFL) is defined as the percentage change EPS due to a given percentage change in EBIT or this is a relationship between EBIT and EBT. In this study the following relationship will be used. It is expressed as:

$$DFL = \frac{\%ChangeinEPS}{\%ChangeinEBIT} or$$

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

The higher ratio of DFL indicates the higher financial risk as well as higher fixed charges of the company and vice versa.

3.6.1.3 Capital Structure Analysis

Various approaches have been developed under the relevancy of the capital structure, which helps to evaluate value of the firm, such as Net Income approach (NI), Net Operating Income approach (NOI), Traditional Method and MM approach. These all approaches are based on the market value. Practical usualness of other approaches is bit complex thus NI and NOI approaches are used in this study.

$$MarketValueofFirm(V) = MarketValueOfDebt(B) + MarketValueofEquity(S)$$

$$CostofOverallCapitalizationRate(Ko) = \frac{NetOperatingIncome(EBIT)}{TotalMarketValueofThefirm(V)}$$

$$CostofEquity(Ke) = \frac{EarningAvailableToCommonStockHolders(NI)}{MarketValueofStock(S)}$$

3.7 Statistical Tools

The statistical tools that used for data analysis were:

- Mean
- Karl Pearson's Coefficient of Correlation
- Probable Error

3.7.1 Mean

The arithmetic mean is the sum of total values to the number of values in the sample.

3.7.2 Corrélation Coefficient (r)

Correlation coefficient measures the relationship between two and more than two variable, when they are so related that the change in the value of one variable is accompanied by the change in the value of the other. Or it indicates the direction of relationship among variables.

A method of measuring correlation is called Pearson's coefficient of correlation. It is denoted by 'r'. The correlation coefficient can be calculated by using following formula:

$$r = \frac{N\sum XY - \sum X \sum Y}{\sqrt{N\sum X2 - (\sum X)2} \times \sqrt{N\sum Y2 - (\sum Y)2}}$$

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 have perfectly positive correlated.

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

3.7.3 Probable Error (P.E.)

P.E. interprets the value of correlation co-efficient. It helps to determine applicability for the measurement of reliability of computed value of the correlation coefficient 'r'. It can be calculated as:

$$P.E. = 6 \times \frac{0.6745 \times (1 - r2)}{\sqrt{N}}$$

Where,

r = correlation coefficient

N = number of pairs of observations.

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

4.1 Introduction

To analyze the financial performance in respect to capital structure, various presentation and analysis have been presented in this chapter according to analytical research design mentioned in the third chapter using various financial and statistical tools. It is already stated that capital structure refers to the combination of preference share, equity share capital including reserve and surplus as well as long-term debt. Optimal capital structure refers to that combination of funds, which maximizes the EPS, value of the firm and overall cost of capital. Thus this chapter emphasizes the position of capital structure of BOKL and HBL. The analysis is divided into following section, which is directly and indirectly related to the capital structure.

- Ratio Analysis
- Analysis of Capital Structure
- Leverage Analysis
- Correlation Analysis

4.2 Ratio Analysis

4.2.1 Long Term Debt to Total Debt Ratio

The relationship between long term debt and total debt has a decisive impact on the financial structure of the companies. This relationship indicates what percentage of total debt is covered by long term debt of the firm. Normally firms use short term and long term debt. Current liabilities and provisions are also needed during the operation of the firm.

The relationship of long term debt and total debt is presented in the following table along with the percentage change in that ratio to show the movement of trend individually. But the detailed calculation is shown in the appendix 2.

$$LongTermDebtToTotalDebtRatio = \frac{LongTermDebt}{TotalDebt} \times 100$$

Table No. 4.1

Long term Debt and Total Debt Position

Fiscal Years	Long Term Debt to Total Debt (%)	
	HBL	BOKL
2012/13	2.08	3.55
2013/14	1.60	1.50
2014/15	0.77	2.75
2015/16	1.73	4.52
2016/17	0.66	1.42
Average	1.36	2.75

Source: Appendix 1

Table No.4.1 shows the long term debt to total debt ratio of HBL and BOKL. The analysis reveals that the long term debt to total debt ratio of both banks are in fluctuating trend over the years. The average value denotes that 1.36% of total debt is covered by Long term debt in HBL which means that about 98.64% of the total debt is contributed by current liabilities. Long term debt has higher cost than Short term debt. Similarly BOKL has the average ratio of 2.75%. HBL has low long term debt as compared to BOKL which indicates that HBL has to pay less interest for using the fund or the cost of using the long term debt is less than BOKL.

4.2.2 Long Term Debt to Capital Employed Ratio

The optimal capital structure has important relationship with the long term debt to capital employed ratio. This relationship suggests the portion of long term debt and capital employed used in the capital structure of the firm. This ratio highlights the need of long term debt in the capital employed but the firm. Long term debt includes the debt, which matures in more than one accounting period whereas capital employed includes long term debt and shareholders' equity of the firm. The relationship of long term debt and capital employed can be analyzed by establishing the ratio between them. This ratio is called the long term debt to capital debt ratio. Larger the ratio, larger the proportion of long term debt in the capital employed and

vice versa. This ratio can be calculated by dividing the long term debt with capital employed by the firm. This ratio is also known as debt to permanent capital ratio, whereas permanent capital means total assets minus current liabilities. The long term debt to permanent capital ratio is presented in the following table:

$$LongTermDebtToCapitalEmployedRatio = \frac{LongTermDebt}{CapitalEmployed}$$

Table No. 4.2

Comparative Long term Debt to Capital Employed Ratio

Fiscal Years	Long Term Debt to Capital Employed (times)	
	HBL	BOKL
2012/13	0.18	0.24
2013/14	0.15	0.13
2014/15	0.08	0.23
2015/16	0.15	0.29
2016/17	0.05	0.10
Average	0.12	0.19

Source: Appendix 2

Table No.4.2 shows the long term debt to capital employed ratios of HBL and BOKL. It indicates that long term debt to capital employed ratios of both HBL and BOKL is on regular range over the years. However, BOKL has higher ratio than HBL. This indicates that BOKL is using more long term debt financing as its capital.

4.2.3 Debt to Total Assets Ratio

Debt to total assets ratio express the relationship between creditors fund and total assets. It is also the leverage ratio, which is generally called the debt ratio. This type of capital structure ratio is a variant of debt equity ratio. Calculating debt to total assets is one calculation approach of the debt to capital ratio. Debt includes all loans and total assets include all types of assets of the fir, it measures the percentage of total funds provided by creditors.

This ratio can be calculated by simply dividing long term debt by the total assets of the firm.

$$DebtTotalAssetsRatio = \frac{TotalDebt}{TotalAssets} \times 100$$

Table No. 4.3

Comparative Debt to Asset Ratios

Fiscal Years	Debt to Asset (%)	
	HBL	BOKL
2012/13	0.019	0.032
2013/14	0.015	0.014
2014/15	0.007	0.025
2015/16	0.016	0.041
2016/17	0.006	0.012
Average	0.013	0.025

Source: Appendix 3

Table No.4.3 shows that the long term debt to total capital assets ratios of HBL and BOKL. Debt to total assets ratio express the relationship between creditors fund and total assets. The ratio has decreased for both HBL and BOKL from previous year. The long term debt to total capital assets ratio of BOKL is greater than HBL. This indicates that BOKL uses more of debt capital, as compared with assets, than HBL. The debt to total assets ratio of both HBL and BOKL is negligible.

4.2.4 Debt Equity Ratio

Debt equity ratio is used to show the relationship between borrowed funds and owners' capital. It reflects the relative claims of creditors and shareholders against the assets of the firm. It is an important tool for the financial analysis to appraise the financial structure of a firm. The ratio reflects the relative contribution of owners and creditors capital of business in its financing. In other word, this ratio exhibits the relative proportions of capital contributed by owners and creditors. Debt equity ratio can be calculated in the basis of shareholders' equity and long term debt. Shareholders' equity includes reserve and accumulated profit, preference share and equity share capital. Where long term debt includes total debt minus short term debt or current liabilities, here debt equity ratio is also computed by simply dividing long

term debt of the firm by shareholders' equity. The high D/E ratio shows the large share of financing in the capital by the creditors then the owners or it also reflects that the creditors claim is higher against the assets of firm and vice versa. D/E ratios of concerned companies are shown in the following table that is referred from the appendix 1.

$$Debt Equity Ratio = \frac{Long Term Debt}{Shareholder's Equity} \times 100$$

Table No. 4.4

Comparative Debt - Equity Ratios

Fiscal Years	Debt to Equity (%)	
	HBL	BOKL
2012/13	0.224	0.315
2013/14	0.181	0.151
2014/15	0.087	0.294
2015/16	0.181	0.417
2016/17	0.055	0.115
Average	0.15	0.26

Source: Appendix 4

Table No.4.4 shows the debt-equity ratio of HBL and BOKL. BOKL has the highest debt equity ratio among the two with the average ratio of 0.26. HBL has used low percentage of debt in the financial structure in the recent years as a result it has lesser amount to be paid as interest on debt.

4.2.5 Interest Coverage Ratio

The interest coverage ratio is useful tool to measure long term debt serving capacity of the firm. It is also called interest earned ratio. Interest is fixed charges of the companies, which is charged in long term and short term loans. Generally, interest coverage ratio measured the debt serving capacity of a firm and it is concerned with long term loans. It shows how many times the interest charges are covered by EBIT out of which they will be paid. This ratio examines the interest paying capacity of the firm by how many times the interest charges are covered by EBIT.

Interest coverage ratio is calculated dividing EBIT by interest. So, it is necessary to analyze EBIT and interest. This ratio is useful to measure long term debt serving capacity of the firm. The high ratio shows that the firm may imply unused debt capacity and the firm has greater capacity to handle fixed charges liabilities of creditors. Whereas, low ratio is a signal that the firm is using excessive debt and does not have the ability to offer assured payment of interest to the creditors. The calculated interest coverage ratios of two companies are presented in the following table.

$$InterestCoverageRatio = \frac{EBIT}{Interest}$$

Table No. 4.5

Comparative Interest Coverage Ratio

Fiscal Years	Interest Coverage Ratio (times)	
	HBL	BOKL
2012/13	1.65	1.73
2013/14	1.72	1.27
2014/15	1.74	1.34
2015/16	2.76	1.62
2016/17	1.98	1.54
Average	1.97	1.49

Source: Appendix 5

Table No.4.5 shows the interest coverage ratio of HBL and BOKL. Interest coverage ratio shows how many times the interest charges are covered by EBIT out of which they will be paid. The average ratio of HBL is 1.97, which implies the number of times the interest covered by its EBIT. The interest coverage ratio of HBL shows an increasing trend which is greater than BOKL. HBL has been successful to obtain higher interest coverage ratio. The high ratio of HBL shows that it has greater capacity to handle fixed charges liabilities of creditors. Both the banks are able to maintain to pay interest on their debt capital financing more than one times.

4.2.6 Return on Total Assets

Return on total assets ratio measures the profitability of bank that explains a firm to earn satisfactory return on all financial resources invested in the bank's assets. The ratio explains net income for each unit of assets. Higher ratio indicates efficiency in utilizing its overall resources and vice versa. From the point of view of judging operational efficiency, rate of return on total assets is more useful measure.

The return on total assets ratio is calculated using the formula below:

$$\text{Return on Total Assets} = \frac{\text{Net Profit After Tax}}{\text{Total Assets}}$$

Table No. 4.6

Position of comparative Return on Total Assets

Fiscal Years	Return on Total Assets	
	HBL	BOKL
2012/13	1.51	1.90
2013/14	1.28	0.65
2014/15	1.31	0.74
2015/16	1.91	0.82
2016/17	2.01	1.57
Average	1.60	1.14

Source: Appendix 6

Table 4.6 shows the comparative position of return on total assets of HBL and BOKL. The average ROA of HBL is greater than BOKL. The return of 1.60 indicates that for every one unit of assets utilized by HBL it earns 1.60 times. HBL's return is in satisfactory level than BOKL. HBL's capacity to gain profit seems attractive due to proper mobilization of available resources. BOKL is unable to generate more because of the lack of proper utilization of its available resources.

4.2.7 Return on Shareholders' Equity

Shareholders' fund represents that part of long term source of funds, which is collected by issuing equity shares and preference shares. Shareholders are actually the owners of the company. If the company's earning is good, shareholders' earning is

greater than outside investors because they are ultimate owners and they are bearing high risk as well. But outside investors return before the owners that is fixed. Shareholders get the return after paying the fixed interest charge to the creditors and tax to the government. Earnings after tax (EAT) are the profit of the shareholders. Therefore this ratio is calculated on the basis of EAT.

$$\text{Return on Shareholder's Equity} = \frac{\text{Net Profit After Tax}}{\text{Shareholders' Equity}}$$

Table No. 4.7

Position of comparative ROSHE

Fiscal Years	Return on Shareholder's Equity	
	HBL	BOKL
2012/13	0.178	0.186
2013/14	0.158	0.072
2014/15	0.159	0.086
2015/16	0.219	0.084
2016/17	0.186	0.145
Average	0.18	0.11

Source: Appendix 7

Table No.4.7 exhibits ROSHE of HBL and BOKL. The average ratio of HBL is greater than BOKL i.e. 18.00%, whereas the average ratio of BOKL is 11.0%. The ratio of 18% implies that one rupee investment by shareholders' equity earned 18paisa in one year in HBL. HBL has high average ratio than BOKL during the five year period. HBL is efficiently utilizing its shareholder fund in generating profit. High ratio indicates better utilization of its fund. Comparatively, the rate of return of HBL on shareholder's fund is greater than BOKL. HBL's capacity to utilize its owner's fund is very good.

4.2.8 Earning per share

The profitability of bank from the point of view of the ordinary shareholders' is earning per share. The ratio explains net income for each unit of share. Earnings per

share of an organization give the strength of the share in the market. It shows how much theoretically belongs to the ordinary shareholders. The EPS is calculated as below:

$$Earning Per Share = \frac{Net Income}{No. Of Shares Outs\tan ding}$$

Table No. 4.8

Position of comparative EPS

Fiscal Years	Earnings Per Share	
	HBL	BOKL
2012/13	34.19	36.64
2013/14	33.09	13.25
2014/15	33.38	15.78
2015/16	43.03	14.32
2016/17	41.88	23.31
Average	37.11	20.66

Source: Appendix 8

Table No.4.8 shows the earnings per share of HBL and BOKL. The overall trend of EPS is fluctuating. The average EPS of HBL is 37.11 which is greater than BOKL. This indicates that each share owned by equity shareholders earn Rs. 37.11. The highest EPS is 43.03 in the year 2015/16. Similarly, the average EPS of BOKL is 20.66. HBL has been able to maintain higher EPS than BOKL making HBL a more profitable company.

4.3 Capital Structure

4.3.1 Net Income (NI) Approach

Net income (NI) approach is known as dependent hypothesis of capital structure. The essence of this approach is that the firm can reduce its cost of capital by using debt and total valuation of the firm through the reduction in the cost of capital leading to an increase in the cost of capital thus leading to an increase in the degree of leverage. According to this theory, optimum capital structure is that, where the total value of the company is highest and the overall capitalization rate is lowest. The overall

capitalization rate can be calculated simply by dividing EBIT by the value of the company. Calculated rates are presented below that is referred from appendix 9.

Table No. 4.9

Comparative Position of Overall Capitalization Rate

	HBL		BOKL	
Fiscal Years	Cost of Capital (Ko)	Value of Firm (in million Rs)	Cost of Capital (Ko)	Value of Firm (in million Rs)
2012/13	0.170	20508.43	0.013	93147.14790
2013/14	0.137	28370.18	0.011	1083.000273
2014/15	0.123	27694.85	1.197	1210.642354
2015/16	0.063	69087.18	1.532	2123.680671
2016/17	0.108	58155.78	0.334	2600.865152
Average	0.120	40763.284	0.618	20033.0

Source: Appendix 9

Table No.4.9 shows the computed overall capitalization rate of HBL and BOKL. The average cost of HBL is lowest at 12.0% with highest value of Rs.40763.284 million. The average cost of BOKL is highest at 61.8% with lowest value of Rs.20033.0. BOKL has higher overall capitalization rate than HBL. Optimum capital structure is that, where the total value of the company is highest and the overall capitalization rate is lowest. This indicates that HBL has optimal capital structure as compared to BOKL.

4.3.2 Net Operating Income (NOI) Approach

It is an independent hypothesis of capital structure decision of the firm and which is irrelevant to the value of firm an overall cost of capital. Change in leverage will not lead to any change in the total value of the firm and market price of share, as the overall cost of capital is independent of the degree of leverage. Increases in Ko are exactly offset by using cheaper debt fund keeping Ko constant. So equity capitalization rate Ke is calculated here by simply dividing EBT by the market value of common equity, which is presented in the following table. Detail calculation of Ke is presented in the appendix.

Table No. 4.10

Comparative Position of Effect of Debt on Equity Capitalization Rate

	HBL		BOKL	
Fiscal Years	Cost of Equity (Ke)	Long Term Debt (in million Rs)	Cost of Equity (Ke)	Long Term Debt (in million Rs)
2012/13	0.017	1188.429	0.009	1039.3228
2013/14	0.056	1100.00	0.035	536.00
2014/15	0.054	600.00	0.041	1131.00
2015/16	0.041	1600.00	0.045	3247.00
2016/17	0.053	640.00	0.073	1040.00
Average	0.044	1025.68	0.0812	1398.66

Source: Appendix 10

Table No.4.10 shows the equity capitalization rates of HBL and BOKL. The average cost of HBL is lowest at 4.4% with lowest average long term debt of Rs.1025.68 million. The average cost of BOKL is highest at 8.12% with highest average long term debt of Rs.1398.66 million. Change in leverage does not lead to any change in the total value of the firm and market price of share, as the overall cost of capital is independent of the degree of leverage. The increase in leverage leads to an increase in financial risk of the ordinary shareholders.

4.4 Leverage Analysis

4.4.1 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 charge is high the company can have advantage of tax shield but it will affect to owners' return i.e. net profit as well. The degree of financial leverage of sampled companies is presented in the following table.

$$DFL = \frac{\%ChangeInEPS}{\%ChangeInEBIT} = \frac{EBIT}{EBT}$$

Table No. 4.11

Comparative Degree of Financial Leverage

Fiscal Years	Degree of Financial Leverage	
	HBL	BOKL
2012/13	2.539	2.379
2013/14	2.403	4.688
2014/15	2.343	3.971
2015/16	1.569	2.611
2016/17	2.023	2.868
Average	2.176	3.303

Source: Appendix 11

Table No.4.11 shows the calculated DFL of HBL and BOKL. The average DFL of HBL is 2.176 times. The average DFL of BOKL is 3.303 times. DFL explains the relationship between earnings before interest and taxes and net profit of the company. High the financial leverage, high will be the financial risk and also high will be the shareholders' return. It can be concluded that both bank are in financial risk position, with BOKL more risky.

4.5 Correlation Analysis

Correlation analysis enables us to have an idea about the degree and direction of the relationship between the two or more variables. Although there are three types of correlation i.e. simple, partial and multiple but here we focus on simple correlation based on 'Pearson's coefficient of correlation'. In the following section correlation between different variables are calculated and presented of the sampled companies.

- Total debt and shareholders’ equity
- Long term debt and earnings per share
- EBIT and interest
- EBIT and DPS

4.5.1 Total Debt and Shareholders' Equity

The relationship between total debt (TD) and shareholders' equity (SHE) have been shown in the following table below. P.E. interprets the value of correlation co-efficient. It helps to determine applicability for the measurement of reliability of the computed value of the correlation coefficient (r).

Table No. 4.12

Comparative Coefficient between TD and SHE with Probable Error

HBL		BOKL	
Correlation Coefficient (r)	Probable Error 6(P.E.)	Correlation Coefficient (r)	Probable Error 6(P.E.)
0.291	0.243	0.985	0.052

Source: Appendix 12

Table No.4.12 shows that the Pearson's correlation coefficient between total debt and shareholders' equity of HBL is 0.291. There is positive correlation between TD and SHE. The probable error 6(PE) of HBL is 0.243. PE is less than correlation coefficient (r). Hence, there is significant relationship between two variables. Similarly, the correlation coefficient of BOKL is 0.985, which is positive. The probable error of 0.052.779 is greater than r which shows there is no significant relationship between two variables.

4.5.2 Long term Debt and Earning per Share

Long term debt is the source of long term financing or long term finds. Company should pay interest for this debt capital. Whereas earning per share (EPS) is earning of a share of a firm form one year business. EPS has positive relationship with company's earning. In this section the relationship between these two variables has been shown using Karl Pearson's correlation coefficient method. The calculated correlation coefficient and their respective probable error have been shown in the following table referred form appendix.

Table No. 4.13

Correlation Coefficient between Long Term Debt (LTD) and Earning per Share (EPS) and their respective Probable Error

HBL		BOKL	
Correlation Coefficient (r)	Probable Error (P.E.)	Correlation Coefficient (r)	Probable Error (P.E.)
0.29	1.66	0.82	0.59

Source: Appendix 13

Table No.4.13 shows that the correlation coefficient between long term debt and earnings per share of HBL is 0.29, which implies that there is positive correlation between LTD and EPS. The Probable error (PE) of HBL is 1.66 PE is greater than correlation coefficient (r). Hence, there is no significant relationship between two variables. In the case of BOKL, correlation coefficient is 0.82, which implies that there is positive correlation between LTD and EPS. The Probable error (PE) of BOKL is 0.59. PE is less than correlation coefficient (r). So, there is significant relationship between two variables.

4.5.3 EBIT and Interest

Long term debt holders get the interest as return and EBIT is operating profit of the company. Following table shows the relationship between these variables of sampled companies.

Table No. 4.14

Correlation Coefficient between EBIT and Interest, and their respective Probable Error

HBL		BOKL	
Correlation Coefficient (r)	Probable Error (P.E.)	Correlation Coefficient (r)	Probable Error (P.E.)
-0.788	0.686	0.986	0.052

Source: Appendix 14

Table No.4.14 shows the correlation coefficient of HBL and BOKL.HBL is found to be -0.788 i.e. there is negative correlation between Interest and EBIT. PE of respected correlation is 0.686, which is greater than correlation coefficient (r). So, there is no significant relationship between two variables. Similarly, in the case of BOKL, the correlation coefficient between Interest and operating profit is 0.986. It is positive. The Probable error of respected correlation is 0.052, which is less than correlation coefficient (r) indicating that there is significant relationship between two variables.

4.5.4 EBIT and DPS

Shareholders get the dividend as return and EBIT is operating profit of the company. Here, correlation coefficient of EBIT and DPS has been presented of concerned companies to analyze whether there is positive or negative correlation between dividends and operating profit. Following table shows the relationship between these variables of sampled companies. And to check the significance of these calculated correlations. PE is also presented, which is referred from appendix:

Table No. 4.15

Correlation Coefficient between EBIT and DPS and their respective Probable Error

HBL		BOKL	
Correlation Coefficient (r)	Probable Error 6(P.E.)	Correlation Coefficient (r)	Probable Error 6(P.E.)
-0.79	0.68	0.98	0.08

Source: Appendix 15

Table No.4.15 shows the correlation coefficient of both commercial banks. HBL is found to be -0.79, i.e. there is negative correlation between EBIT and DPS. 6PE of respected correlation is 0.68, which is greater than correlation coefficient (r).So there is no significant relationship between two variables. Similarly, in case of BOKL, the correlation coefficient between operating profit and dividend is 0.98 and it is positive. The 6PE of respected correlation is 0.08, which is less than correlation coefficient (r). So, there is significant relationship between two variables.

4.6 Major findings of the Study

The percentage of total debt of the firm covered by long term debt is indicated by long term debt to total debt ratio. HBL has 1.36% of average long term debt to total debt ratio. Similarly BOKL has average ratio of 2.75%. In two cases, the total debt is contributed by current liabilities to a large extent. The analysis of two companies reveals the fluctuating trend of long term debt to total debt ratio. Among the two, BOK has used maximum long term debt in comparison to HBL.

The analysis shows that among the two banks, HBL has least and BOKL has the highest long term debt to capital employed ratio of 0.124 and 0.199 respectively. This indicates that BOKL is using more long term debt financing as its capital. It can be said that long term debt to capital employed ratio of both companies are inappropriate.

The long term debt for financing used by both sample companies is very minimum or negligible. Hence, the debt to total assets ratio of HBL and BOKL is negligible. The debt equity ratio shows the claim of creditors on the total asset of the company. The trend analysis shows fluctuating trend in two sample banks. The average debt equity ratio of HBL is 0.15, which shows that the creditors have 15.0% claims on the assets of HBL. It also indicates that the company has used less amount of debt as financing and has lesser amount to be paid as interest on debt. BOKL has the highest debt equity ratio among the two with the average ratio of 0.26. It implies that the claim of creditors is 26.0% which is higher than that of owners of the company. The ratio shows that BOKL. It also indicates that the company has used less amount of debt as financing and has lesser amount to be paid as interest on debt.

The analysis shows that both the sample companies HBL and BOKL are able to pay the interest amount. Among the two, BOK has the lowest interest coverage ratio of 1.49, which shows that the firm is able to pay the interest amount. In case of HBL, the average interest coverage ratio is 1.97. In comparison, HBL and BOKL have the average return on asset of 1.60 and 1.14 respectively. The overall return on asset of HBL is fluctuating in trend and of BOKL is decreasing trend.

The returns on shareholder’s equity of both banks are fluctuating over the period of five years. The average return of HBL is Rs.18.0% which indicates that the

shareholders earned Rs.18.00 paisa investing rupee one. By analyzing the average return, we can conclude that return earned by the shareholders' equity of HBL is highest among two companies i.e. 18.0%

The earnings per share explains net income for each unit of share. It shows the market position of the market. The average earning per share of HBL is Rs.37.11. The average earning per share of BOKL is Rs.20.66. Among the two, HBL has the highest earning per share.

Overall capitalization rate (ko) of HBL is in fluctuating trend. With the increased use of leverage, overall cost of capital declines and the total value of firm rise. From the calculations, HBL has the optimum capital structure because it has the least cost of capital and the highest value of the firm.

Net operating income (NOI) approach is an independent hypothesis of capital structure. Any changes in leverage will not lead to any change in the total value of the firm and market price of share. From the position of average cost of equity, it is found that BOKL has an average cost of equity of 8.12% with an average long-term debt of Rs.1025.68 million, which in comparison to HBL is higher, where HBL has average cost of equity of 4.4% at long term debts of Rs.1398.66 million. So we can say that BOKL has the optimum capital structure compared to HBL.

The financial leverage analysis helps to evaluate the financial risk of the firm. The average degree of financial leverage of HBL and BOKL are 2.18 and 3.30 respectively, which concludes that BOK is bearing the highest risk and HBL is bearing the least financial risk among the two.

HBL has positive correlation between TD and SHE of 0.93 that is they deviate in the same direction. Likewise, the probable error is 0.24, less than correlation coefficient, i.e. relationship between TD and SHE is significant. In case of BOKL the correlation coefficient is 0.982. The 6(PE) of BOKL is 0.065 which shows that the value of r is significant.

Correlation coefficient and PE ratio between long term debt and earnings per share of HBL and BOKL shows that there is positive correlation and insignificant relationship

in HBL and significant in BOKL as PE is greater than correlation coefficient of HBL and less than correlation coefficient of BOKL.

The correlation coefficient between EBIT and interest of both banks are positive correlation and insignificant relationship in HBL and significant in BOKL as PE is greater than correlation coefficient of HBL and less than correlation coefficient of BOKL.

The correlation coefficient between EBIT and DPS of HBL is - 0.79 and 6PE is 0.69 indicating negative and insignificant correlation. In case of BOKL the correlation is positive and less probable error indicating significant correlation.

CHAPTER- V

CONCLUSIONS

This is the concluding chapter of the study. This chapter is divided into three sections: Summary, Conclusions and Recommendations. In this chapter, we summarize the study in brief. In the last section of this chapter some recommendations have given, which are useful to stakeholders and to concerned companies as well. They can use these recommendations to take some corrective actions to draw decisions.

5.1 Summary

Capital Structure is the composition of debt and equity that comprise a firm's financing of its assets. Capital structure plays vital role to increase the profitability, to ensure the minimum cost of capital and the maximum return to equity holder. The financial soundness and strengths of a bank depend to a large extent on the composition of capital and assets. A company can finance its investment by a variety of sources such as debt, share capital, including reserves and surpluses.

The Nepalese financial sector is composing of banking sector and Non-banking sector. As shown by the study of NRB, the commercial bank is simply a business corporation organized for the purpose of maximizing the value of shareholder's wealth invested in the bank at an accepted level risk. Financing the firm assets is very crucial problem in every business and as a general rule there should be a proper mix of debt and equity capital.

The basic objectives of the study are:

- To analyze the capital structure of the Himalayan Bank Ltd &Bank of Kathmandu Ltd.
- To analyze the relationship of the capital structure with various important variables such as Earning Per Share, Dividend Per Share, & Net Worth.
- To provide suggestion and recommendation on the basis of analysis to improve the financial weakness of the Himalayan Bank Ltd &Bank of Kathmandu Ltd.

Various financial and statistical tools have been used to achieve the objectives of the study. For this purpose, statistical tools such as Karl Pearson's coefficient of correlation have been calculated to show the relationship between various variables.

This study was based on secondary data with regard to the secondary data; there are 28 commercial banks in Nepal, for the purpose of the study only two banks have been selected. The necessary data on capital structure average cost of capital, cost of equity, and other related variables were collected for the period, 2012/13-2016/17, from the published annual report of the bank and Securities Board of Nepal.

5.2 Conclusion

The study concludes that capital structure of commercial banks has not been optimal. Debt has been either underused or overused over the years. Commercial banks do not have appropriate ratio of long term debt and have not used it properly. Banks have used low debt so as to pay lesser amount as interest on debt. The interest coverage ratio shows that banks are able to cover the interest but have not maintained higher interest coverage ratio. Return on assets and return on shareholder's equity has fluctuating trend. Banks have the problem of instable return.

The results of the study are quite similar with Yadav (2010) who studied about capital structure of Commercial banks in Nepal. The findings of Yadav (2010) showed that commercial bank in Nepal have not been able to maintain optimal capital structure. Similarly Shrestha's (2013) study on the Capital Structure of selected and listed public companies found that most of the companies have debt capital relatively higher than equity capital. The results were similar because the use of debt and equity has fluctuated over the years and return on shareholder's equity has not been satisfactory in commercial banks of Nepal. Shareholders have not gained considerate amount in earnings from investment in shares. Banks have used low debt so as to pay lesser amount as interest on debt.

Furthermore, the study found that total debt and shareholder's equity deviate in the same direction but insignificantly. Gumanju (2004) found the similar results as he concluded the positive relationship between total debt and net profit. Gill et al (2011) studied the effect of capital structure on profitability of the American service and

manufacturing firms and found positive relationship between short-term debt to total assets and profitability, long-term debt to total assets and profitability, and between total debt to total assets and profitability.

An optimal capital structure would fulfill the interest of equity shareholder and financing requirement of a company as well as other concerned groups. The study concludes that with the increased use of leverage, overall cost of capital declines and the total value of the firm rise. The firm with the highest value and the least cost of capitalization rate is considered to have the best capital structure. Similarly change in the leverage do not lead to change in the total value of the firm and market price of the share, as the overall cost of capital is independent of the degree of leverage. The commercial banks have to take corrective actions to decrease the risk.

5.3 Implications

In this section of study, few points that can be helpful to stakeholders as well as to the company are recommended based upon above calculations and drawn conclusions. These recommendations are guidelines, which would be helpful in taking prompt and appropriate decision about capital structure. These recommendations are given below:

First of all, the companies lack the theoretical knowledge regarding the capital structure. They have not given significant attention to the capital structure matter. Capital structure is a serious matter. It affects EPS, Value of the firm, cost of capital etc. So it is recommended that these companies should follow the theoretical aspects of the capital structure management or give bit more attention in this matter and try to manage their activated accordingly.

Observing the return on shareholders' equity, earning per share, dividend per share, return on assets, HBL seems to have better capital structure but with greater financial risk than the BOKL. The companies along with the return should also consider the risk associated. The companies' shareholders not only seek the high return from their investment but also consider the risk of the investment. So it is recommended to all these companies to plan their capital structure well by analyzing the possible financial alternatives considering high return and least risk.

The companies are also recommended to minimize the financial and other expenses so the interest coverage ratio could be increased. They are recommended to use less cost debt, improve strategy of promotion activities, analyze and evaluate before making investments etc to increase the return and decreases risk.

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APPENDICES

APPENDIX 1 : Long Term Debt to Total Debt

$$Long\,Term\,Debt\,to\,Total\,Debt\,Ratio = \frac{Long\,Term\,Debt}{Total\,Debt} X100$$

Long Term Debt to Total Debt of HBL

F/Y	Long Term Debt	Total Debt	(LTD/TD)%
2012/13	1188.429	57186.89	2.08
2013/14	1100.00	68635.41	1.60
2014/15	600.00	77794.428	0.77
2015/16	1600.00	92394.149	1.73
2016/17	640.00	96797.001	0.66
Average			1.36

Long Term Debt to Total Debt of BOKL

F/Y	Long Term Debt	Total Debt	(LTD/TD)%
2012/13	1039.3228	29240.969	3.55
2013/14	536.00	35485.506	1.50
2014/15	1131.00	41115.954	2.75
2015/16	3247.00	71868.870	4.52
2016/17	1040.00	73368.639	1.42
Average			2.75

APPENDIX 2 : Long Term Debt to Capital Employed

$$LongTermDebtToCapitalEmployed = \frac{LongTermDebt}{CapitalEmployed}$$

Long Term Debt to Capital Employed HBL

F/Y	Long Term Debt	Capital Employed	LTD/CE
2012/13	1188.429	6488.137	0.18
2013/14	1100.00	7183.4110	0.154
2014/15	600.00	2554.263	0.079
2015/16	1600.00	10423.7690	0. 154
2016/17	640.00	12345.197	0.052
Average			0.124

Long Term Debt to Capital Employed BOKL

F/Y	Long Term Debt	Capital Employed	LTD/CE
2012/13	1039.3228	4343.966	0.239
2013/14	536.00	4084.559	0.131
2014/15	1131.00	4985.114	0.226
2015/16	3247.00	11025.819	0.295
2016/17	1040.00	10075.959	0.103
Average			0.199

Appendix 3 : Debt to Total Asset Ratio

Long Term Debt-Total Asset Ratio HBL

F/Y	Long Term Debt	Total Asset	LTD/TA
2012/13	1188.429	62486.557	0.019
2013/14	1100.00	74718.816	0.015
2014/15	600.00	84753.328	0.007
2015/16	1600.00	101217.918	0.016
2016/17	640.00	108502.198	0.006
Average			0.013

Long Term Debt-Total Asset Ratio BOKL

F/Y	Long Term Debt	Total Asset	LTD/TA
2012/13	1039.3228	32545.613	0.032
2013/14	536.00	39034.065	0.014
2014/15	1131.00	44970.058	0.025
2015/16	3247.00	79647.689	0.041
2016/17	1040.00	83600.095	0.012
Average			0.025

Appendix 4 : Debt-Equity Ratio

Debt to Equity Ratio of HBL

F/Y	Long Term Debt	Total Equity	D/E Ratio
2012/13	1188.429	5299.708	0.224
2013/14	1100.00	6083.411	0.181
2014/15	600.00	6958.900	0.087
2015/16	1600.00	8823.769	0.181
2016/17	640.00	11705.197	0.055
Average			0.15

Debt to Equity Ratio of BOKL

F/Y	Long Term Debt	Total Equity	D/E Ratio
2012/13	1039.3228	3304.643	0.315
2013/14	536.00	3548.559	0.151
2014/15	1131.00	3854.114	0.294
2015/16	3247.00	7778.819	0.417
2016/17	1040.00	9035.959	0.115
Average			0.26

Appendix 5 : Interest Coverage Ratio

Interest Coverage Ratio of HBL

F/Y	EBIT	Interest	I/C Ratio
2012/13	3495.755	2119.062	1.65
2013/14	3869.959	2248.798	1.72
2014/15	3409.146	1954.263	1.74
2015/16	4314.719	1565.896	2.76
2016/17	6275.042	3173.334	1.98
Average			1.97

F/Y	EBIT	Interest	I/C Ratio
2012/13	2103.714	1219.400	1.73
2013/14	1768.555	1390.497	1.27
2014/15	1956.167	1463.506	1.34
2015/16	2503.297	1544.407	1.62
2016/17	5451.083	3550.903	1.54
Average			1.49

Appendix 6 : Return on Total Assets

$$ReturnOnTotalAssets = \frac{NetProfitAfterTax}{TotalAssets}$$

Return on Total Assets of HBL

F/Y	Net Profit	Total Assets	ROA
2012/13	943.698	62486.557	1.51
2013/14	959.107	74718.816	1.28
2014/15	1112.286	84753.328	1.31
2015/16	1935.908	101217.918	1.91
2016/17	2178.235	108502.198	2.01
Average			1.60

Return on Total Assets of BOKL

F/Y	Net Profit	Total Assets	ROA
2012/13	617.090	32545.613	1.90
2013/14	254.442	39034.065	0.65
2014/15	334.569	44970.058	0.74
2015/16	6t55.276	79647.689	0.82
2016/17	1312.353	83600.095	1.57
Average			1.14

Appendix 7 : Return on Shareholders' Equity

$$ReturnOnShareholder'sEquity = \frac{NetProfitAfterTax}{Shareholder's Equity}$$

Return on Shareholders' Equity of HBL

F/Y	Net Profit	S.E.	ROE
2012/13	943.698	5299.708	0.178
2013/14	959.107	6083.411	0.158
2014/15	1112.286	6958.900	0.159
2015/16	1935.908	8823.769	0.219
2016/17	2178.235	11705.197	0.186
Average			0.18

F/Y	Net Profit	S.E.	ROE
2012/13	617.090	3304.643	0.186
2013/14	254.442	3548.559	0.072
2014/15	334.569	3854.114	0.086
2015/16	6t55.276	7778.819	0.084
2016/17	1312.353	9035.959	0.145
Average			0.11

Appendix 8 : Earning Per Share

$$EPS = \frac{NetIncome}{NoOfSharesOuts\tan ding}$$

Earning Per Share of HBL

F/Y	EBIT	Interest	Tax	EAT	No. of Shares(N)	EPS
2012/13	3495.755	2119.062	432.995	943.698	27600000	34.19
2013/14	3869.959	2248.798	662.054	959.107	28980000	33.09
2014/15	3409.146	1954.263	342.597	1112.286	33327000	33.38
2015/16	4314.719	1565.896	812.915	1935.908	44991450	43.03
2016/17	6275.042	3173.334	923.473	2178.235	64916235	41.88
Average						37.11

Earning Per Share of BOKL

F/Y	EBIT	Interest	Tax	EAT	No. of Shares(N)	EPS
2012/13	2103.714	1219.400	267.224	617.090	16843967	36.64
2013/14	1768.555	1390.497	123.617	254.442	19202123	13.25
2014/15	1956.167	1463.506	158.092	334.569	21202123	15.78
2015/16	2503.297	1544.407	303.614	655.278	45678910	14.32
2016/17	5451.083	3550.903	587.828	1312.353	56295760	23.31
Average						20.66

Appendix 9 : Calculation of NI Approach

$$MarketValu\,eofEquity(S) = NoofShares\,Outs\,\text{tan}\,ding \times Clo\,\text{sin}\,gMPS$$

$$MarketValueofFirm(V) = MarketValueOfDebt(B) + MarketValueofEquity(S)$$

Value of firm of HBL

F/Y	No. of Shares(N)	Closing MPS	Market Value of Share (S)	Market Value of Debt (B)	V=S+B
2012/13	27600000	700	19320.00	1188.429	20508.43
2013/14	28980000	941	27270.18	1100.00	28370.18
2014/15	33327000	813	27094.85	600.00	27694.85
2015/16	44991450	1500	67487.175	1600.00	69087.18
2016/17	64916235	886	5751.784	640.00	58155.78
Average					40763.28

Value of firm of BOKL

F/Y	No. of Shares(N)	Closing MPS	Market Value of Share (S)	Market Value of Debt (B)	V=S+B
2012/13	16843967	553	9314713751	1039.3228	9314714790
2013/14	19202123	564	1082999737	536.00	1083000273
2014/15	21202123	571	1210641223	1131.00	1210642354
2015/16	45678910	464	2123677424	3247.00	2123680671
2016/17	56295760	462	2600864112	1040.00	2600865152
Average					326658064.8

Calculation of Overall Capitalization rate (Ko)

$$CostOfOverallCapitalization(Ko) = \frac{NetOperatingEarnings(EBIT)}{TotalMarketValueofTheFirm(V)}$$

Calculation of Overall Capitalization rate (Ko) of HBL

F/Y	EBIT	Value of Firm	Ko
2012/13	3495.755	20508.43	0.170
2013/14	3869.959	28370.18	0.137
2014/15	3409.146	27694.85	0.123
2015/16	4314.719	69087.18	0.063
2016/17	6275.042	58155.78	0.108
Average			0.120

Calculation of Overall Capitalization rate (Ko) of BOKL

F/Y	EBIT	Value of Firm	Ko
2012/13	2103.714	9314714790	0.013
2013/14	1768.555	1083000273	0.011
2014/15	1956.167	1210642354	1.197
2015/16	2503.297	2123680671	1.532
2016/17	5451.083	2600865152	0.334
Average			0.618

Appendix 10: Calculation of NOI Approach

$$Costofequity(Ke) = \frac{EquityAvailableToCommonStockholders(NI)}{MarketValueOfStock(S)}$$

Calculation of Equity Capitalization rate of HBL

F/Y	EBT	Market Value of Equity, S	Ke
2012/13	1376.693	19320.00	0.017
2013/14	1621.161	27270.18	0.056
2014/15	1454.883	27094.85	0.054
2015/16	2748.823	67487.175	0.041
2016/17	3101.708	5751.784	0.053
Average			0.044

Calculation of Equity Capitalization rate of BOKL

F/Y	EBT	Market Value of Equity, S	Ke
2012/13	88431441	9314713751	0.009
2013/14	37805868	1082999737	0.035
2014/15	49266077	1210641223	0.041
2015/16	95888942	2123677424	0.045
2016/17	190018050	2600864112	0.073
Average			0.0812

Appendix 11: Degree of Financial Leverage

$$DFL = \frac{\%\,Change\,in\,EP \quad S}{\%\,Change\,in\,EB \quad IT} \; or$$

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

Calculation of Degree of Financial Leverage of HBL

F/Y	EBIT	EBT	DFL
2012/13	3495.755	1376.693	2.539
2013/14	3869.959	1621.161	2.403
2014/15	3409.146	1454.883	2.343
2015/16	4314.719	2748.823	1.569
2016/17	6275.042	3101.708	2.023
Average			2.176

Calculation of Degree of Financial Leverage of BOKL

F/Y	EBIT	EBT	DFL
2012/13	2103.714	884.31441	2.379
2013/14	1768.555	378.05868	4.688
2014/15	1956.167	492.66077	3.971
2015/16	2503.297	958.88942	2.611
2016/17	5451.083	1900.18050	2.868
Average			3.303

Appendix 13 : Correlation Coefficient Between Total Debt and Shareholders Equity with Probable Error

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

Where,

N = number of observations

X & Y are variables .

$$P.E=\frac{6 \times 0.6745 \times(1-r^2)}{\sqrt{N}}$$

Where,

r= Correlation Coefficient

N= number of pairs of observations.

Correlation Coefficient Between TD and SHE of BOK

F/y	TD(X)	SHE(Y)	XY	X^2	Y^2
2012/13	29240.969	3304.643	96630963.52	8550342681.10	10920665.36
2013/14	35485.506	3548.559	12t59224117	1259221136.00	12592270.98
2014/15	41115.954	3854.114	158465573.9	1690521673.00	14854194.72
2015/16	71868.87	7778.819	559054931.50	5165134475.00	60510025.03
2016/17	73368.639	9035.959	662956013.9	5382957189.00	81648555.05
Average	251079.938	27522.094	1603029895	14352868741.00	180525711.1

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

$$=\frac{5\times 1603029895-251079.938\times 27522.94}{868741-(251079.9380)^2\times 5\times 180525711.1-(2}$$

$$= 0.982$$

$$P.E=\frac{6 \times 0.6745 \times(1-r^2)}{\sqrt{N}}$$

$$=\frac{6 \times 0.6745 \times(1-0.982^2)}{\sqrt{5}}$$

$$= 0.065$$

Correlation Coefficient Between TD and SHE of HBL

F/y	TD(X)	SHE(Y)	XY	X^2	Y^2
2012/13	57186.89	5299.708	303073818.4	3270340388.00	28086904.89
2013/14	68635.41	6083.411	417537408.2	4710819506.00	37007889.39
2014/15	77794.428	6958.9	541363645	6051973028.00	48426289.21
2015/16	92394.149	8823.769	815264627.70	8536678769.00	77858899.37
2016/17	96797.001	11705.197	1133027966	9369659403.00	137011636.80
Total	392807.88	38870.985	3210267465.00	31939471984.00	328391619.60

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

$$= \frac{5\times 3210267465 \times -392807.878 \times 38870.985}{471984 - (392807.878)^2 \times \ 5\times 328391619.6 - (3}$$

$$= 0.93$$

$$P.E = \frac{6 \times 0.6745 \times (1-r^2)}{\sqrt{N}}$$

$$= \frac{6 \times 0.6745 \times (1-0.93^2)}{\sqrt{5}}$$

$$= 0.24$$

Appendix 14 : Correlation Coefficient Between Long Term Debt and Earning Per Share with Probable Error

Correlation Coefficient Between LTD and EPS of BOK

F/y	LTD(X)	EPS(Y)	XY	X^2	Y^2
2012/13	1039.32	36.64	3808.79	1080192.30	1342.4896
2013/14	536.00	13.25	7102.00	287296.00	175.5625
2014/15	1131.00	15.78	17847.18	1279161.00	249.0084
2015/16	3247.00	14.32	46497.04	10543009.00	205.0624
2016/17	1040.00	23.31	24242.40	1081600.00	543.3561
Total	6993.32	103.30	133769.41	14271258.30	2515.479

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

$$=\frac{5\times133769.407-6993.3228\times103.3}{4271258.3-(6993.3228)^2\times\sqrt{5}\times2515.479-(1(}$$

$$= \quad 0.82$$

$$P.E = \frac{6 \text{ x } 0.6745 \text{ x}(1-r^2)}{\sqrt{N}}$$

$$= \frac{6 \text{ x } 0.6745 \text{ x}(1-0.82^2)}{\sqrt{5}}$$

$$= \quad 0.59$$

Correlation Coefficient Between LTD and EPS of HBL

F/y	LTD(X)	EPS(Y)	XY	X^2	Y^2
2012/13	1188.43	34.19	40632.39	1412363.49	1168.96
2013/14	1100.00	33.09	36399.00	1210000.00	1094.95
2014/15	600.00	33.38	20028.00	360000.00	1114.22
2015/16	1600.00	43.03	68848.00	2560000.00	1851.58
2016/17	640.00	41.88	26803.20	409600.00	1753.93
Total	5128.43	185.55	192710.59	5951963.49	6983.64

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

$$= \frac{5 \times 192710.5875 - 5128.429 \times 185.55}{51963.488 - (5128.429)^2 \times \sqrt{5 \times 6983.6432 - (1}$$

$$= 0.29$$

$$P.E = \frac{6 \times 0.6745 \times (1 - r^2)}{\sqrt{N}}$$

$$= \frac{6 \times 0.6745 \times (1 - 0.29^2)}{\sqrt{5}}$$

$$= 1.66$$

Appendix 15 : Correlation Coefficient Between EBIT and Interest with Probable Error

Correlation Coefficient Between EBIT and Interest of BOK

F/y	EBIT(X)	Interest(Y)	XY	X^2	Y^2
2012/13	2103.71	1219.40	2565268.85	4425612.59	1486936.36
2013/14	1768.56	1390.50	2459170.42	3127786.79	1933481.907
2014/15	1956.17	1463.51	2862862.14	3826589.33	2141849.812
2015/16	2503.30	1544.41	3866109.41	6266495.87	238519213
2016/17	5451.08	3550.90	19356266.98	29714305.87	12608912.12
Total	13782.82	9168.71	31109683.81	47360790.45	20556373.18

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

$$=\frac{5\times 31109683.81-13782.816\times 9168.713}{)790.45-(13782.816)^2\times\sqrt{5\times 20556373.18-(9}}$$

$$= 0.985$$

$$P.E = \frac{6 \text{ x } 0.6745 \text{ x}(1-r^2)}{\sqrt{N}}$$

$$= \frac{6 \text{ x } 0.6745 \text{ x}(1-0.98^2)}{\sqrt{5}}$$

$$= 0.072$$

Correlation Coefficient Between EBIT and Interest of HBL

F/y	EBIT(X)	Interest(Y)	XY	X^2	Y^2
2012/13	3495.76	2119.06	7407721.58	12220303.02	4490423.76
2013/14	3869.96	2248.80	8702756.06	15186289.45	5057092.445
2014/1t5	3409.15	1954.26	6662367.89	11627820.38	3819143.873
201t5/16y	4314.72	1565.90	6756401.22	18616800.05	2452030.283
2016y/17	6275.04	3173.33	19912804.13	39376152.10	10070048.68
Total	21391.62	11061.35	49442050.88	97027365.00	25888738.98

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

$$=\frac{5\times 49442050.88-21391.621\times 11061.353}{27365-(21391.621)^2\times\sqrt{5}\times 25888738.98-(110}$$

$$= 0.75$$

$$P.E=\frac{6\ \text{x}\ 0.6745\ \text{x}(1-r^2)}{\sqrt{N}}$$

$$=\frac{6\ \text{x}\ 0.6745\ \text{x}(1-0.75^2)}{\sqrt{5}}$$

$$= 0.770$$

Appendix 16 : Correlation Coefficient Between EBIT and DPS with Probable Error

Correlation Coefficient Between EBIT and DPS of BOK

F/y	EBIT(X)	DPS(Y)	XY	X^2	Y^2
2012/13	2103.71	0.74	1556.75	4425612.59	0.55
2013/14	1768.56	0.55	972.71	3127786.79	0.30
2014/15	1956.17	1.37	2679.95	3826589.33	1.88
2015/16	2503.30	0.00	0.00	6266495.87	0.00
2016/17	5451.08	21.32	116217.09	29714305.87	454.54
Total	13782.82	23.98	121426.49	47360790.45	457.27

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

$$=\frac{5\times 121426.4918-13782.816\times 23.98}{7360790.45-(13782.816)^2\times\sqrt{5}\times 457.2694-(2}$$

$$= 0.98$$

$$P.E = \frac{6 \text{ x } 0.6745 \text{ x}(1-r^2)}{\sqrt{N}}$$

$$= \frac{6 \text{ x } 0.6745 \text{ x}(1-(0.98)^2)}{\sqrt{5}}$$

$$= 0.08$$

Correlation Coefficient Between EBIT and DPS of HBL

F/y	EBIT(X)	DPS(Y)	XY	X^2	Y^2
2012/13	3495.76	10.00	34957.55	12220303.02	100.00
2013/14	3869.96	6.05	23413.25	15186289.45	36.60
2014/15	3409.15	7.11	24239.03	11627820.38	50.55
2015/16	4314.72	1.58	6817.26	18616800.05	2.49
2016/17	6275.04	1.32	8283.06	39376152.10	1.74
Total	21391.62	26.06	97710.14	97027365.00	191.38

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

$$= \frac{5 \times 97710.14 - 21391.62 \times 26.06}{\sqrt{5 \times 97027365 - (21391.62)^2} \times \sqrt{5 \times 191.38 - (26.0}$$

$$= -0.79$$

$$P.E = \frac{6 \times 0.6745 \times (1 - r^2)}{\sqrt{N}}$$

$$= \frac{6 \times 0.6745 \times \{1 - (-0.790^2)\}}{\sqrt{5}}$$

$$= 0.69$$

A COMPARATIVE ANALYSIS OF CAPITAL STRUCTURE OF COMMERCIAL BANKS

(with the reference of Himalayan Bank and Bank of Kathmandu limited)

A Thesis Proposal

By

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Tribhuvan University

Kritipur, Kathmandu

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1. Background of Study

Commercial banks are a financial institution which accepts deposits, makes business loans, and offers different services to the customer. Banks also allow for a variety of deposit accounts, such as checking, savings, and time deposit. Banking institutions are run to make a profit and owned by a group of individuals. The dominant privately owned financial institution in Nepal and in the economies of most major countries is the commercial bank. Banks offers the public both deposit and credit services, such as investment advice, security underwriting, selling insurance, and financial planning. Financial activities are run by banks so that their activities should be focused on interest of customers. Banks are putting their focused toward profit. Profit is only possible after delivery of quality service to the customers. Commercial banks are established to improve people's economies welfare and facility, to provide loan to the agriculture, industry and commercial and to offer banking services to the people and the country.

Capital structure plays a vital role in accelerating the economic growth of nation, which in turns in basically determined, among others by saving and investment propensities. But the capacity of saving in the country isquite low with relatively higher marginal propensity of consumption. As a result developing countries are badly trapped into the vicious circle of poverty. The basic problem for the developing countries is raising the level of saving and investment. In order to collect the enough saving and put them into productive channels, financial institution like banks is necessary. It will either be diverted abroad or used for unproductive consumption or speculative activities.

Banks are among the most important financial institutions in the economy of the country. Bank is a business establishment that safeguards people's money and uses it to make loans and investments. A bank is an organization concerned with the accumulation of the idle money of the general public for the purpose of advancing to others for expenditure or investment. A bank is the institution, which accepts deposits from the public and in turn advances loans by creating credit.

Commercial Banks

Commercial banks means a bank which operates currency exchanges transactions, accept deposits, provides loan performs dealing relating to commerce except the banks whichhave been specified for the cooperative, agriculture, industry or other similar specific objectives. There are 28 commercial banks in Nepal.

1.1 History of Bank

The modern banking was originated in Italy. The bank of Venice which was established in 1157 A.D was the first bank in the history of banking and it was established to finance the monarch in the wars. The Bank of Barcelona Spain which was established in 1404A.D. was the second bank in the World and then. The Bank of Genoa was set up in 1407 AD.

The first central bank though was the bank of England which was established in 1844 A.D. Banking has come to the present advanced form through various stages. Some sorts of banking activities have been carried out since the time immemorial. Traditional forms of banking were traced during the civilization of Greek, Rome and Mesopotamia. With large banking firms established in Florence, Rome, Venice and other Italian cities the banking activities spread through out the Europe and it slowly spread through out the world.

1.2 Banking Industry in Nepal

The specific date of beginning of money and banking transaction in Nepal is unknown. The banking functions were carried out in unorganized sectors. It is found that minted coins, copper coins, silver coins, and gold coins were introduced by different kings.

Institutional development of modern banking in Nepal had begun from early 1990s. With the establishment of Nepal Bank Limited in 1994 B.S, the new era of banking sector had started in Nepal. As a central bank, Nepal Rastra Bank was established in 2013B.S.Under

the provision of Nepal Rastra Bank Act 2012, with the objectives of helping in the development of monetary and financial sector by undertaking various functions.

Another step was added when RastriyaBanijya Bank was established in 1966(2022BS) under the Banijya Bank Act 1965(2021BS). Likewise, Agriculture Development Bankwas established in 1965(2024BS) with the objective of increasing the life standard of those people who are involved in agriculture.

The banks opened before the decade of 1980s were by the government. No private sector was permitted to open banks in Nepal. The process of development adopted liberalized economic policies to develop the financialsector. As a pre-condition to economic liberalization, the Foreign Investment and Technology Transfer Act, 1981 came into existence. The government allowed private sectors to open banks. Joint venture projects were also allowed. Many joint venture commercial banks and financial institutions were established. As a result, Nepal Arab Bank Limited was established as a first joint venture commercial bank in 1985 under the provision of Commercial Bank Act, 1974 and Company Act 1965. Then, Nepal Indosuez Bank Limited was established in 1985 and Nepal Grindlays Bank Limited in 1986. In 2001, the name of Nepal Grindlays Bank Limited has been changed into Standard Chartered Bank Nepal Limited and Nepal Indosiez Bank Limited has been changed into Nepal Investment Bank in 2002, which has not foreign share now. After the restoration of multiparty democracy, the newly formed government adopted liberalized policies aimed at accelerating economic growth and considerably reducing state interference in business. The governments encouraged foreign and private investment by offering attractive incentives and facilities including 100% foreign ownership in all but few sectors. This help to create conductive business environment for banking. As a result, additional commercial banks came into existence. When the internal violence shows green signal to manage and Nepal Rastra Bank make ease for rules and regulations, many new commercial banks are coming existence and existing development banks and financial institutions are upgrading them as

commercialbanks. At present there are 28 commercial banks registered and operated in Nepal.

1.3 Capital Structure of Commercial Banks

The term capital structure refers to the proportion of debt and equity capital or the composition of long term sources of finance, such as preference capital debentures, long term debt and equity capital including services and surpluses (i.e. retained earning and excluding short term debts.)

The term capital structure refers to the mix of different types of funds a company uses to finance its activities. Capital structure varies greatly from one company to another. For example, some companies are financed mainly by shareholders finds whereas others make much greater use of borrowings.

The capital structure decision affects the total value of the firm. The proper balance between debt and equity is necessary to ensure a trade off between risk and return to the shareholders. The capital structure of the bank should be such that leads to the value maximization. The optimal capital structure, i.e. the capital structure with reasonable proportion of debt and equity minimizes the opportunity cost of capital and maximizes the shareholders' wealth.

1.5 Statement of the problems

Bank plays a significant role in the economic development of the country by extending credit to the people. Although banking industry in Nepal is making remarkable progress and growth. It's not without the problems. At the present context, the main problem faced by the business sector as well as bank is the unstable political and economic condition of the country.

The present study will try to analyze and examine the practice of capital structure in the commercial banks in Nepal. This study specially deals with the following problems.

i) Whether the capital structure affects the growth of a bank or not?

ii) To what extent the capital structure policy is followed by the commercial banks.

iii) What are the main problems faced by the commercial banks in developing and implementing the capital structure policy.

2. Purpose of the study

The main objective of the study is to analyze the behaviour of the capital structure of the selected commercial banks.The study involves 5yrs financial data of two commercial banks to evaluate, compare and examine their capital structure. The main objectives of selected commercial banks are given below:

i) To study and evaluate the role of capital structure on the growth of the commercial banks in Nepal.

ii) To analyze the capital structure of the commercial banks in Nepal.

iii) To examine the relationship of capital structure with variables such as earning per share, dividend per share and net worth.

3. Significance of the study

This study would contribute an overall look at the coming up new capital policies to be taken by the bank and the factors that should be taken in consideration while preparing the next year's policy. The bank which would be included in as sample would likely see the point of their weakness and significance of this study on their future plan.

This study is also important for owners, creditors and potential investors to make their attitude on investment. The study will also have significance for management, policy maker, stakeholder of the banks and others those having investment on capital structure decision. The main significance of the study is:

i) It will be valuable property for the library use.

ii) The study will be used as a pilot work for the future research

iii) It will be helpful to other Commercial Banks and others.

4. Limitation of the study

Each study is conducted under some constraints and limitations. Likewise this study is also limited by some common constraints. This study is prepared for partial fulfillment of MBS degree which has to be finished within a short span of time and under different strains. Some of the basic limitations are as follows:

i) This study is based on secondary data.
ii) It covers data of only five fiscal years.
iii) Only factors considering capital structure are taken into consideration.
iv) Only two banks are taken as the sample for the study among whole population.

5. Review of the literature

Review of literature is a compilation of theoretical review and the review of the thesis/dissertation carried out in the similar field. Review of the literature is supported to revise the eminent literatures relating to the study. This chapter aims to gives a conceptual framework and makes a review of the relevant studies that have already been done in this research topic so that some new contributions could be given to the established body of knowledge.

"The company earns profit only when it is able to sell its product and not when it produces them. It is no use of producing goods that are not likely to be sold and for which there is a limited demand. In some business, it is necessary to establish that the product will sell even before it is produced. In normal times of keen competition, the sales forecast must be realistic. It is undoubtedly true that past can provide experience and information which will be an assistance in estimating present and future revenue but care must be taken in presenting past facts to management so that incorrect conclusions may not be drawn there from" (Mohan & Goyal, 1992:10).

“The revenue plan should be designed to coordinate the efforts of the sales department, production department and all other departments. Many factors must be considered when sales budget is established, including sales trends, limitations on the supply of merchandise or the company's market, competing products, the expected amount of advertising, and general level of the economy. Since most of these unknown companies frequently maintain a specially trained staff to increase them”(SeilerRobert,1964:659-660).

“The revenue planning process is a necessary part of PPC because (a) it provides for the basic management decisions about marketing, and (b) based on those decisions, it is an organized approach for developing a comprehensive sales plan. If the revenue plan is not realistic, most if not all of the other parts of the overall profit plan also are not realistic. Therefore, if the management believes that a realistic revenue plan cannot be developed; there is little justification for PPC. Despite the views of a particular management, such a conclusion may be an implicit admission of incompetence. Simply, if it is really impossible to assess the future revenue potential of a business, there would be little incentive for investment in the business initially or for continuation of it except for purely speculation ventures that most managers and investors prefer to avoid” (Welsch, Hilton,Gordon,2000:171)

“The roles of cash forecasting, cash management accountability, and the elementsaffecting disbursement and collection time intervals are outlined, includinggenerally accepted management principles and techniques. However, liquid assetshave traditionally been justified for transaction motives, to meet the needs thatcome from the firm’s normal activities, as well as for precautionary motives, tohelp meet unforeseen requirements for cash’’ (Baumol, 1952; Miller and Orr, 1966;Meltzer, 1993; and Mulligan, 1997).

“The objectives of cash management are straightforward – maximize liquidity and control cash flows and maximize the value of funds while minimizing the cost of funds. The strategies for meeting such objectives include varying degrees of long-term

planningrequirements. Everywhere in the world, much treasury activity is concentrated on cash management. This includes financing the corporation, administration of debts (loans, bonds, commercial papers, etc.), good relationships with the banks, payments to suppliers and collections from customers, control of foreign currency and interest positions according to the company's needs for finance, and finally the reporting and technical support of all these functions" (Agrawal, 2003: 124).

6. Research Methodology

Research is the process of systematic and in depth study or search any particular topic, subject or area of investigation backed by collection presentation and interpretation of relevant details or data.

Research is a systematic and organized effort to investigate a specific problem that needs a solution. This process of investigation involves a series of well through out activities of gathering, recording, analysis and interpreting the data with the purpose of finding answers to the problem.

This chapter mainly deals with the research methodology used to ascertain the study objectives. Under this, research design, nature and sources of data, population and sample and method of data analysis technique have been described.

6.1 Research Design

The main objective of the present study was to analyze the capital structure of the two commercial banks of Nepal. Descriptive research design and analytical study of collected data of various financial statements over the time period was used. Descriptive research design makes the comparison and establishes relationship between two or more variables.

6.2 Data Collection Procedure

The Study was based on secondary data. For the secondary data and information, Publication of Nepal Rastrya Bank, Annual Reports of NRB, Annual Reports HimalayanBank and Bank of Kathmandu Ltd, Annual Reports of Security board, various publications. Apart from these various books, Journal, Seminar paper available in the Library and related articles, Unpublished Master Degree Thesis.

6.3 Population and Sample

There are all together twenty-Eight commercial banks in Nepal, out of them only two commercial bank were selected as sample. Samples were taken on the basis of convenience sampling. The sampled commercial banks were Himalayan Bank Limited and Bank of Kathmandu Limited.

6.4 Nature and Sources of Data

Mainly, the study is conducted on the basis of secondary data. The required data are extracted from balance sheets, profit and loss accounts and different financial schedules of concerned banks annual reports. Other supplementary data are collected from a number of institutions and regulation authorities like Nepal Rastra Bank, Nepal Stock Exchange Ltd., security exchange board, etc. and from different related websites. This study is based in the historical data of 5 year period.

6.5 Analysis of Data

For the purpose of data analysis, various financial and statistical tools will be used to achieve the objective of the study.

1. **Financial Tools**

   Ratio analysis
   Leverage analysis
   Capital structure analysis
   Traditional analysis

Modigliani-Miller's approach

2. **Statistical Tools**

   Mean

   Standard deviation

   Coefficient of variation

   Probable error

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