

CHAPTER - I

INTRODUCTION

1.1 Background of the Study

Like blood is necessary for human beings, finance is for business organizations and industries. Each and every business organization should base their decision making in financial management. Financial management is mainly concerned with the acquisition and utilization of funds. For this, financial market plays vital role in utilizing financial resources for expanding productive sectors in the country. It mobilizes unproductive and unutilized financial resources towards productive sectors and helps in expanding economic growth of the country. Every business firm or banks required 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.

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 funds whereas others make much greater use of borrowings. Capital structure is the composition of the debt and equity securities and is considered as financing decision undertaken by the financial manager. The financial manager must strive to obtain the best financial mix or optimum capital structure for the firm. Capital structure refers to the mix of long term sources of fund such as debenture, long term debt preference share capital and equity share capital including reserve and surplus. 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.

The word bank has been derived from the Italian word "banco". The word banco means bench. As the different monetary transaction used to be held by sitting-up in the bench, it has been named as banco. Macleod has defined the word banco as the accumulation of money or stock. Bank in an organized form was first introduced in Italy in 1157 A.D. The Bank of Barcelona, Spain was the bank established in 1401 A.D. The first central bank was established in England, in 1844 A.D. But at present stage the bank has passed through different stage. It has been developing and modernizing its activities.

Bank can be briefly defined as the financial intermediary between the depositor and credit seeker. The transaction can happen between the bank and depositor only when the depositors deposit certain amount in the bank and the bank has good relation with its customer. The Bank can make good relation with its customer only when it will be able to payback the amount deposited by the depositor at time. The intermediation takes place when bank accept deposit from general public, corporate bodies and private organization and invest those deposit for profitable purpose in form of loan and advances. The bank has started providing much more facility to its customer such as remittance of money, letter of credit, Bank guarantee, issue of money and many more.

There is several definition of a bank by different authors and scholar's .some of them is as follows:-

According to Oxford Dictionary

“A bank is an establishment for the custody of money received from or on its customers, its essential duty is to pay their draft on it, its profit arises from its use of money left unemployed by them.”

According to Dr. Hart“ A person or company carrying on the business of receiving money and collecting drafts, for customers subject to the obligation of honoring cheques upon them from time to time by the customers to the extent of the amounts available on their current accounts”

As per Kent "Bank is an organization whose principle operation is concerned with accumulation for the temporarily idle with money of the general public for the purpose of advancing to other expenditure."

According to Hals bury laws of England

"A banker is defined as an individual partnership or corporation, whose sole predominating business banking"

According to **Kinley**, "Bank is an establishment which makes to individual such advances of money or other means of payment as may be required & safety made and to which individual entrust money or means of payment when not required by them for use."

According to Cambridge International Dictionary of English"

An organization where people and business can invest or borrower money changes it to foreign money etc. or a building where these services are offered."

Thus, bank can be described as the custodian of savings of general people and established as well. It could have been quite impossible for the entrepreneurs to acquire the saving of general public for investment without the establishment of the bank. So, bank can be best described as the financial institution that accept deposit and provide the certain rate of interest and loan it to the needy person, charging certain rate of interest and earn some profit in the process of intermediation.

1.2 Origin and Growth of Bank in Nepal

The lending or borrowing process of money used to be held even at ancient time. The historical evidence shows the presence of some crude banking practice in the earlier period of time. But in case of Nepal it has a very short history. The development of bank in Nepal can be divided into two parts:

- a) Traditional Banking
- b) Modern Banking

a) Traditional Banking

Traditional Banking is related with the process of taking money with private money lender and not with a registered institution. Previously the people used to take money from the private money lender. Generally, people used to take such loan for meeting daily expenses. The lender used to charge high interest rate. In remote area till now there are different money lenders. There are the sayings that in 780 B.S. King Guna Kam Dev took loan from the money lender and in B.S. 937 Shankadhar paid out the loan and started Nepal Sambat. In 14th century King Jaysthity Malla divided the people in 64 different casts. And Tankdhari was also one of them. The main occupation of such cast people was to deal with monetary transition. After this the Tejrath Adda was established in government sector. They provide its services only to the civil servant to lower rate of interest.

Private money lender following certain malpractice used to charge unreasonable rate of interest that caused inconvenience and difficulty to the people of country. The great need of a commercial bank was felt to eliminate 2 prevailing hindrances caused by private money lender to the general public. As a result, the "Tejarath Adda" was replaced by modern commercial bank.

b) Modern Banking

As the banking transaction started to be in broad condition there felt the need of modern banking system. So in 30th Kartik 1994 B.S the Nepal Bank Ltd. was established which was the first commercial bank in Nepal. Since then, the banking operation began to foster. After the establishment of NBL Ltd., Rastriya Banijya Bank was established in 2013 B.S. Different joint venture banks also started its operation in year 2041 B.S. Nepal Indosuez Bank Ltd. & Nepal Grindlays Bank Ltd. was established in 2042 B.S. and 2043 B.S. respectively. Himalayan Bank Ltd. was established with the joint venture with Habib Bank of Pakistan. Nepal SBI bank followed Himalayan Bank in 2051 B.S. The three new banks were opened in 2051 B.S., Nepal Bangladesh Bank Ltd., Everest Bank Ltd., and Bank of Kathmandu Ltd. Meanwhile there are 31 commercial banks in Nepal which have 1,215 branches and 87 development bank which have 486 branches.

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. Banks are the institutions that provide the funding required starting the business to those with skills and desire to operate the business collecting from those with the money but no skill or time to operate the business. Bank is a resource of mobilizing institution, which accepts deposit from various sources, and invests such accumulated resources in the fields of agriculture, commerce, trade and industry. In other words, 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, Letter of Credit, Remittance, services etc.

Banking industry is one of the fast growing businesses in Nepal. After the restoration of multiparty democracy, several commercial banks make a way to the business in Nepal. At present, commercial banks hold a large share of economic activities of the country. Stock market has been dominated by commercial banks since a decade. Everyday we can see trading of large amount of stock transactions of commercial banks. Not only in the stock market, but commercial banks have also been major contributors to the revenue of the country. They have been paying a large amount of tax every year. Banking sector has become a mainstay of the economy of the country.

Establishment of commercial banks is governed by Commercial Bank Act, 2031 BS and Company Act, 2053 BS. However, Nepal Rastra Bank (NRB), as a regulatory body for banks and financial institutions, has right to specify the capital requirements, and other requirements. Being the central bank of Nepal, NRB has the responsibility to give special attention to the interest of depositors. It is to be noted that as per the banking and financial statistics of NRB, the commercial banks of Nepal have collected more than Rs. 185 billion money from depositors by the end of fiscal year 2001/02. Such a big amount of money should have to be secured and NRB has the major responsibility to protect it. In March 2001 NRB issued various directives to be complied by all commercial banks of the country. The directives consist of nine volumes.

1.3 Introduction of the Banks

Among various joint ventures Banks, Himalayan bank is one of the greatest joint venture bank established in 1993 in joint venture with Habib Bank Limited of Pakistan. Despite the cut-throat competition in the Nepalese Banking sector, Himalayan Bank has been able to maintain a lead in the primary banking activities- Loans and Deposits. The bank started its operation with the authorized capital of Rs.100 million, issued capital of Rs 65 million and paid up capital of Rs 53.63 million. The equity participant of HBL is 20% by Habib bank of Pakistan, 51% by promoter share holders, HBL policy to extend quality and responded services to its customers as promptly as possible. The bank as far as possible offers tailor made facilities to its clients on the unique needs and requirements to extend more efficient services to its customers. HBL has been adopting innovating and latest banking services and technology. This bank has 35 branches in all over the country and 10 branches in Kathmandu valley only. It has very aggressive plan to established branches in different parts of nation in near future since 1995 the bank provides product and services like credit card tele-banking any branch banking, ATM, 24 hours banking etc. The Bank has very aggressive plan of establishing more branches in different parts of the kingdom in near future. Legacy of Himalayan lives on in an institution that's known throughout Nepal for its innovative approaches to merchandising and customer service. Products such as Premium Savings Account, HBL Proprietary Card and Millionaire Deposit Scheme besides services such as ATMs and Tele-banking were first introduced by HBL. Other financial institutions in the country have been following our lead by introducing similar products and services. Therefore, we stand for the innovations that we bring about in this country to help our Customers besides modernizing the banking sector. With the highest deposit base and loan portfolio amongst private sector banks and extending guarantees to correspondent banks covering exposure of other local banks under our credit standing with foreign correspondent banks, we believe we obviously lead the banking sector of Nepal. The most recent rating of HBL by Bankers' Almanac as country's number 1 Bank easily confirms our claim.

All Branches of HBL are integrated into Globus (developed by Temenos), the single Banking software where the Bank has made substantial investments. This has helped the Bank provide services like 'Any Branch Banking Facility', Internet Banking and SMS Banking. Living up to the expectations and aspirations of the Customers and other stakeholders of being innovative,

HBL very recently introduced several new products and services. Millionaire Deposit Scheme, Small Business Enterprises Loan, Pre-paid Visa Card, International Travel Quota Credit Card, Consumer Finance through Credit Card and online TOEFL, SAT, IELTS, etc. fee payment facility are some of the products and services. HBL also has a dedicated offsite 'Disaster Recovery Management System'. Looking at the number of Nepalese workers abroad and their need for formal money transfer channel; HBL has developed exclusive and proprietary online money transfer software- Himal Remit TM. By deputing our own staff with technical tie-ups with local exchange houses and banks, in the Middle East and Gulf region, HBL is the biggest inward remittance handling Bank in Nepal. All this only reflects that HBL has an outside-in rather than inside-out approach where Customers' needs and wants stand first.

Himalayan bank offers various types services to its valuable customers, which promotes bank competitiveness, credit worthiness and attraction. Some services and technologies, which may provide by Himalayan bank limited, are as follows:-

1. Accepting deposits-current deposits-fixed deposits-saving deposits
2. Granting loan- Overdraft- Demand loan-Time loan-term loan
3. Transferring funds
4. Premium saving accounting
5. Bills discounts
6. Bank guarantee
7. Issued of honors of travelers cheques
8. Inward and outward remittance
9. Issuance of bank draft and bankers cheques
10. ATM, debit card, credit card facilities
11. Inter banking services
12. Any branch banking system (ABBS)

The bank is the first joint venture bank managed by Nepalese chief executive. Its head office is based in the capital city of the country, Kathmandu in "Karmachari Sanchaya Kosh Building" Thamel, Ktm. It has 26 branches out of which 9 are in Katmandu valley and remaining 17 branches are outside the valet spread in the main cities of the country. The bank adopting

modern technologies such as computer system in each branch, credit card, master card and visa international card etc. recently this bank has an agreement with Smart Choice Technology Pvt. Ltd. for expanding ATM network in Kathmandu Valley.

Siddhartha Bank Limited (SBL) commenced on operation on 2002 with 1000,000,000 Authorized Capital, 350,000,000 Issued Capital and 350,000,000 Paid up Capital. The Bank is promoted by a group of highly reputed Nepalese dignitaries having wide commercial experience. SBL is providing a full range of commercial banking services through its 28 branches established in all over the Nepal. The bank has already 75,000 customers. The total deposited amount is 18 Arab and loan issue is 7 Arab till fiscal year 2066-67. And the bank has its own motto or slogan i.e. “our business is to understand your business” and the bank is heading to achieve its mission by strictly following the above stated slogan. The corporate office of the bank is at Teendhara Road, Kamaladi, Kathmandu. SBL’s vision is to be financially sound, operationally efficient and keep abreast with technological developments. The bank firmly believes that customers focus is core value, shareholders prosperity is priority, employees' growth is commitment and overall economic welfare is of sincerely concern.

In addition to the core banking products, in deposits and corporate financing the bank has the whole range of personal detail products for home, auto, education and mortgage loan for the miscellaneous requirements. The other services offered to the valued customers are trade finance, treasury, Siddhartha remit for remittance, cash management service for speedy collection of receivables a network of ATM’s and internet banking services.

1.3.1 Commercial Banks

Commercial banks means a bank which operates currency exchanges transactions, accept deposits, provides loan performs dealing relating to commerce except the banks which have been specified for the cooperative, agriculture, industry or other similar specific objectives. There are 31 commercial banks in Nepal. There are 31 licensed commercial Banks in Nepal. These commercial banks have given a new horizon to the financial sector of the country regarding healthy competition, foreign capital investment, technological transfer and experience and skills.

1.4 Statement of the Problem

Bank plays a significant role in the economic development of the country by extending credit to the people. Bank accept various types of deposits from the general public and lend them to various sector for generating some return at the same time assuming some level of risk associated with specific sector. This means risk and return runs both ways. To minimize risk for given level of returns and/or to maximize return for a given level of risk, banks have to manage optimum capital structure. In case of Nepal our country, Nepal is one of the underdeveloped countries. Banks accepts various types of deposits from the general public and lend them to various sector for generating some return at the same time assuming some level of risk associated with specific sector. This means risk and return runs both ways. Although banking industry in Nepal is making remarkable progress and growth. It is 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.

Another problem faced by the banking industry is the 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.

Determining the cost of capital and capital structure is a major problem in Nepalese commercial banks. Because we find variables in the financing process of corporation of Nepal. Before taking intelligent decision to borrow additional capital for expanding the volume of operation, management is not able to analyze cost of capital properly in their firm for investment decision-making.

There are many studies conducted in the capital structure management of different sectors in Nepal and most of the studies are based on financial ratio analysis except few. It has still that subject of curiosity for the students, researchers, businessmen and other interested parties to known that what is the actual position of Himalayan Bank and Siddhartha Bank Limited regarding theories of capital structure and cost of capital. Therefore, to meet their desire, this

study is devoted to examine the relationship between capital structure and cost of capital. Current situation of banking sector shows the growth of non-performing assets (NPA) has been faster than the growth of credit due to the higher cost of fund and poor management loan. To sum up, the main research issues are as following questions:

-) How efficiently the sample are managing their capital structure position?
-) Is there proper capital structure management in the banks under study?
-) What percentage of the level of debt and equity it has?
-) What are the main problems of commercial banks of Nepal?

1.5 Objectives of the Study

The main objective of the study is to compare capital structure and its impact upon overall bank's performance of two banks in Nepal. The optimum capital maximizes the valuation of banks and minimizes the overall costs of capital. By taking the data of Himalayan bank limited and Siddhartha Bank Limited, this study takes the following objectives:

-) To analyze the capital structure position of the Himalayan Bank and Siddhartha Bank Limited
-) To analysis the overall capitalization rate between HBL and SBL
-) To analyze the effect of capital structure on Debt Equity Ratio, Debt to Total Assets Ratio, Interest coverage ratio, Return on shareholders equity, return on total assets and earning per share.
-) To provide suggestion and recommendation on the basis of the findings.

1.6 Significance of the Study

The capital structure decision is important to determine the value of the firm. Cost of capital determines the value of the firm and cost of capital is affected by capital structure position of the company. In context of underdeveloped country like Nepal, the relation of capital structure and cost of capital has not been clearly known. So, this study will give great significance in the context of Nepalese commercial bank like Siddhartha Bank Limited and Himalayan Bank Limited.

Since, capital structure is essential indicator of company's financial decision making it is to a large extent a determinant of company's profitability. Thus the analysis of selected commercial bank's (Siddhartha Bank Limited and Himalayan Bank Limited) capital structure through this study will lead to shed light on their financial performance.

The capital structure concept has an important place in the theory of financial management. The financial decision of a firm is one of the firm's objectives of shareholders wealth maximization. The concern of the financing of a firm relates to the choice of proportion of debt and equity to finance the investment requirement. A proper balance between debt and equity is necessary to ensure a trade off between risk and return to the shareholders. A capital structure with reasonable proportion of debt and equity capital is called optimal capital structure.

1.7 Limitation of the Study

Each study is conducted under some constraints and limitation. The present study is also not free from limitations. Due to the various constraints, this study is focused to analyze the only certain aspects of capital structure of Siddhartha Bank Limited. Having outlined the objectives and statement of problems, now brief outlined the objectives and statement of problems, now brief note of its principal limitations which are as follows:

-) This study is based on secondary data collected from annual report, financial statement, etc.
-) This study is concerned about capital structure of Himalayan Bank Limited and Siddhartha Bank Limited. So, the conclusion drawn from this study may not be relevant for other commercial banks.
-) Capital structure is influenced by various factors but this study excludes those factors.
-) This study is undertaken for the partial fulfillment of the master degree program.
-) This study examines and suggests only on the subject matter of capital structure.

1.8 Organization of the Study

This thesis is organized into five major chapters.

Chapter-I Introduction

This chapter deals with the background of the study, statement of the problem, objectives of the study, significance of the study, limitation of the study and organization of the study.

Chapter-II Review of Literature

This chapter is devoted to review of literature which deals with the review or rewind the available literature. It includes review of books, journals, other publications as well as unpublished master level dissertations.

Chapter- III Research Methodology

This chapter is about the research methodology adopted in carrying out the present study. It studies the nature and sources of data, population and sample, data collection and processing techniques and methods of analysis.

Chapter -IV Presentation and Analysis of Data

This chapter is the major part of the study which is very important for preparation of thesis. This chapter includes presentation and analysis of data using financial tools, statistical tools and showing tables and graph if necessary.

Chapter V Summary, Conclusion and Recommendations

This chapter is the conclusion or solution part of the study. It includes the summary of main finding, recommendation and suggestion for further improvement and the conclusion of the study.

CHAPTER- II

REVIEW OF LITERATURE

This chapter is focused on brief discussion about the abstract regarding the theories of capital structure. In order to accomplish the objectives of the study, the chapter includes review of relevant concept, assumption, books and journals as well as findings of previous studies of the relevant field that are included in precise manner. The relevant articles were reviewed and the various published and unpublished data and materials are also available from different sources. Review of literature is an essential part of all studies. It is to discover how previous researches are done in the area of our problem.

The purpose of review of literature is to develop some expertise in one's area to see what new contribution can be made and to receive some ideas for developing a research design. It is a way to discover what other research has uncovered in the area of this problem. The main objectives of review of literature is to establish a point of departure for future research or to reveal area of needed research. So review of literature is the most necessary chapter. Some studies have been undertaken by the management experts and the student of MBS describing the capital structure of the commercial and public enterprises. The review of literature is a crucial aspects because it denotes the panning of the study.

This chapter can be divided into the following sub chapter:

-) Conceptual framework
-) Review from journals and articles
-) Review of previous thesis

2.1 Conceptual Frame Work

2.1.1 Meaning of Capital Structure and Financial Structure

Before knowing the capital structure, we must know about the financial structure. Financial structure refers to the composition of all sources and amount of funds collected to use or invest

in business. In other words, financial structure refers to the Capital and Liabilities side of Balance Sheet. Therefore it includes shareholder's fund, long-term loans as well as short-term loans. Shareholder equity includes common stock, paid of capital or surplus, different kinds of reserves and accumulated amount of retained earnings. Financial Structure is different than Capital Structure as Capital Structure includes only long-term sources of financing while financial structure includes both short-term as well as long- term sources of financing. Thus, firm's capital structure is only a part of its financial structure.

Capital Structure refers to the financial plans with the composition of a mix of a company's long-term debt, specific short-term debt, common equity and preferred equity including reserve and surplus. The capital structure is how a firm finances its overall operations and growth by using different sources of funds.

Debt comes in the form of bond issues or long-term notes payable, while equity is classified as common stock, preferred stock or retained earnings. Short-term debt such as working capital requirements is also considered to be part of the capital structure. Capital Structure enables us to evaluate and find out the condition of capital and financial position of the company. In other words capital structure or capitalization of the firm is the permanent financing.

“The optimum capital structure may be defined as the capital structure or combination of debt and equity that leads to the maximum value of the firm”(Khan and Jain, 1990:487).

“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 including reserves and surplus” (Pandey, 1999:18).

“Capital structure refers to the relationship among various long term firms of financing which includes mainly three types of securities i.e equity share, preference share and debentures” (Pandey, 1998:258-259).

Generally the term “Capital Structure” is referred as to represent the proportionate relationship between the different forms of financing. However sometimes the distinction is drawn between ‘financial structure’ (Western and Brigham, 1989:249-50).

Capital Structure is the analysis of the capital composition of a country.”Capital Structure is the permanent financing of the firm, represent by long term, preferred and common stock but excluding all short credit. Thus a firm’s capital structure is only a part of its financial structure i.e. is common structure, capital surplus and accumulated retained earnings (Western and Brigham, 1986).

“The capital structure of the firm, defined as the mix financial instruments used to finance the firm, is simplified to include only long term interest bearing debt, common stock and preferred stock. Capital structure is the combination of long term source of financing i.e. debt, preferred stock and common stock that are used to finance the firm” (Chandra, 1985).

“Fund can be raised through debt and equity financing. Risk is associated in proportion of its uncertainty in being paid off. The required rate of return expected by investors according to their risk is cost of capital therefore a firm should try to obtain necessary funds at lower cost. The overall cost of capital fully depend upon the proportion of debt and equity capital i.e. is financial leverage’ which is actually the capital of funds, so overall cost of capital, value of the firm and earning per share are affected by the mix of the components of capital structure. One of the most important issues of financial manager is to create proper relation between capital structure, which is mix of debt and equity financing and stock prices” (Brigham, Gapenski and Eehardth, 2001).

“Erza Soloman expresses the optimum capital structure and its implications as: as optimum leverage can be defined as the mix of debt and equity which will maximize the market value of the claims and ownership interest represented on the credit side of the balance sheet”(Solomon, 1969:132). Further, the advantages of having an optimum does exist is to fold: it maximizes the value of the company and hence the wealth of its owners, it minimizes the company’s cost of capital which in turns increases its ability to final new wealth creating investment opportunities.

Also by increasing the firm's opportunity to engage in future wealth creating investment, it increases the economy rate of investment and growth.

“The capital structure is the combination of long term debt and equity as a part of financial structure i.e. is comprised to the total combination of preferred stock, common stock, long term debt and current liabilities if current liabilities are removed from it we get capital structure” (Iqbal, 1979:92). Thus firm's capital structure is only the parts of its financial structure. The discussions in the preceding chapter have shown that financial leverage has a magnifying effect on EPS, such that, for a given level of change in EBIT, there will be a more than proportionate change in the same direction in the EPS. But financial leverage also increases the financial risk, defined as the risk of possible insolvency arising out of inadequacy of available cash as well as the variability in the earnings available to the ordinary shareholders. Given the objective of the firm to maximize the value of the equity shares, the firm should select a financing-mix/capital structure/financial leverage which will help in achieving the objective of financial management. As a corollary, the capital structure should be examined from the viewpoint of its impact on the *value* of the firm. It can be legitimately expected that if the capital structure decision financing-mix as will maximize the shareholders' wealth. Such a capital structure is referred to as the optimum capital structure. The optimum capital affects the total value of the firm, a firm should select such a structure may be defined as the capital structure or combination of debt and equity that leads to the maximum value of the firm.

The importance of an appropriate capital structure is, thus, obvious. There is a viewpoint that strongly supports the close relationship between leverage and value of a firm. There is an equally strong body of opinion which believes that financing-mix or the combination of debt and equity has no impact on the shareholders' wealth and the decision on financial structure is irrelevant. In other words, there is nothing such as optimum capital structure.

2.1.2 Features of Optimal Capital Structure

The optimal capital structure is the structure which combines the debts and equity that maximizes the price of the firm's stock. Hence it maximizes the shareholders wealth and minimizes the firm's cost of capital. Some of the features of capital structure are as follows:

1. Profitability

The most profitable capital structure is one that tends to minimize cost of financing and maximize earning per equity share.

2. Return

The capital structure of the company should be most advantageous. Subject to other consideration, it should generate maximum returns to the shareholders without additional cost to them.

3. Risk

Optimal capital structure should be less risky. The use of excessive debt threatens the solvency of the company. Company should use debt to that extent up to which debt does not significant risk, otherwise its use should be avoided.

4. Flexibility

The capital structure should be such that company can raise funds whenever needed. Flexibility in capital structure helps to grab market opportunity as company can raise required funds whenever it is needed for profitable investment opportunities. It helps to reduce costs when funds raised from debt and preferred stock are no more required in the business.

5. Conservation

The debt content in the capital structure should not exceed the limit which the company can bear.

6. Solvency

The capital structure should be such that firm does not run the risk of becoming insolvent.

7. Capacity

The capital structure should be determined within the debt capacity of the company and this capacity should not be exceeded. The debt capacity of the company depends on its ability to generate future cash flow. It should have enough cash to pay creditors fixed charges and principal sum.

8. Control

The capital structure should be so devised that it involves minimum risk of loss of control of the company. Issue of excess equity share to new investors may bring threats to the control by existing manager.

2.1.3 Determinants for Capital Structure Decisions

In addition to the types of analysis discussed above, firms generally consider the following factors when making capital structure decisions:

Sales Stability

A firm whose sales are relatively stable can safely take on more debt and incur higher fixed charges than a company with unstable sales.

Assets Structure

Firms whose assets are suitable as security for loans tends to use debt rather heavily. In general, purpose assets that can be used by many business make good collateral whereas special purpose assets do not. Thus, real state companies are usually highly leveraged whereas companies involved in technological research or not.

Operating Leverage

A firm with less operating leverage is better to employee financial leverage because it will have less business risk.

Growth Rate

Other things remain the same, faster growing firm must rely heavily on external capital. Further, the flotation costs involved in selling common stock exceed those incurred in selling debt. Thus to minimize financing costs rapidly growing firms tends to use some what more debt than do slower growth companies.

Profitability

The capital structure of the company should be most advantageous within the constraints, maximum use of leverage at a minimum cost should be made.

Taxes

Interest is a deductible expense while dividends are not. Hence, the higher of a firm's corporate tax rate the greater the advantage of using debt.

Control

The efficient of debt versus stock on a management's control position can influence capital structure. If management currently has voting control but is not in a position to buy and more stock, it may choose debt for new financing. However, if too little debt is used, management runs the risk of takeover. Thus control considerations could lead to the use of either debt or equity because the type of capital that best protects management will vary from situation to situation. In any event, if management is at all insecure it will consider the control situation.

Management Attitudes

Since no one can prove that one capital structure will lead to higher stock prices than another management can exercise its own judgment about the proper capital structure. Some management tends to be more conservative than others and thus less debt than the average firms in their industry whereas aggressive managements use more debt in the quest for higher profits.

Lender and Rating Agency Attitudes

In the majority of cases, the corporation discusses its capital structure with lenders and rating agencies and gives much weight to their advice. For example, one large utility was recently told by Moody's and Standard and Poor that its bonds would be down graded if it issued more bonds. This influenced its decision to finance its expansion with common equity.

Market Condition

Condition in the stock and bond markets undergo both long and short run changes which can have an important bearing on a firm's optimal capital structure.

Our company can earn a lot more money from good capital budgeting and operating decisions than from good financing decision.

2.1.4 Approaches to Capital Structure

There are number of capital structure theories proposed by different individuals which also create some controversy due to different concepts of capital structure theory hold by different personality. This is the area in which several theoretical and empirical works have been done by different personalities. Capital structure theories developed so far revolve around the question existence of the capital structure. The approaches and theory to explain the relationship between capital structure, cost of capital and value of the firm are:

-) Net Income approach
-) Net operating income approach
-) Traditional approach
-) Modiglianni-Miller (m-m) approach
 - Without tax
 - With tax

Assumption and Definitions

To explain the different theories, following assumptions are made:

-) Two types of capital are employed, long term debt and common stock.
-) The firm's total assets are fixed, but its capital structure can be changed immediately by selling debt to repurchase common stock, or vice versa.
-) The net operating income is not expected to grow or decline over time.
-) All earnings of the firm are paid out in the form of cash dividends.
-) There are no personal and corporate income taxes.
-) The firm is expected to continue indefinitely.
-) The firm has a policy of 100% dividends.

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

B = Total market value of debt

S = Total market value of stock (equity)

V = Total market value of the firms=B+S

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

NI = Net income

I = Total rupees of annual interest

K = Overall capitalization rate or marginal cost of capital

Ks = Cost of equity capital

Kd = Cost of debt capital before taxes

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

$$\text{Cost of debt (kd)} = \frac{I}{B}$$

While the cost of equity is :

$$K_s = \frac{NI}{S} = \frac{NOI - I}{S}$$

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

$$K = kd \times \frac{B}{V} + ks \times \frac{S}{V}$$

The total value of the firm is equal to the combination values of the debt and or:

$$\text{Value of the firm}(v) = B + S = \frac{I}{Kd} + \frac{NOI - I}{Ks}$$

$$\text{Value of the firm}(v) = \text{EBIT or } \frac{NOI}{K}$$

Debt

$$\text{Cost of debt}(k_d) = \frac{\text{Interest}}{\text{Debt}} = \frac{I}{B}$$

$$\text{So value of debt (B)} = \frac{\text{Interest}}{k_d} = \frac{I}{k_d} \text{ I}/k_d$$

Equity or Common Stock

$$\text{Cost of equity capital (k}_s) = \frac{d_1}{p_0 + g}$$

Where,

d_1 =next dividend

p_0 =Current price per share

g =expected growth rate

Overall or Weighted Average Cost of Capital

$$\begin{aligned} K &= k_d \left(\frac{B}{V} \right) + k_s \left(\frac{S}{V} \right) \\ &= \frac{k_d(B)}{B + S} + \frac{k_s(S)}{B + S} \end{aligned}$$

The Total Value of the firm is thus,

$$V = B + S$$

$$= \frac{I}{k_d + \text{EBIT}} - \frac{I}{k_s}$$

These definitions and equations are used in all discussion of capital structure theory. Our concern is with what happens to k_d , k_s and k when the firm's capital structure changes. Several theories of capital structure have been proposed and we will discuss them in a some detail.

The Net Income (NI) Approach

The concept from financial theory that suggest the firm's capital structure has a direct impact upon and increase its market valuation.

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

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

The firm can achieve optimal capital structure by making judicious use of debt and equity and attempt to maximize the market prices of its stock (Durand; 1959:91-116).

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 (Pandey, 1999:26). On the contrary, decrease in the ratio debt to total capitalization causes decline in the total value of firms and increase cost of capital. Thus, this approach is appeared as relevancy theory.

Mathematically, the net income approach are given below:

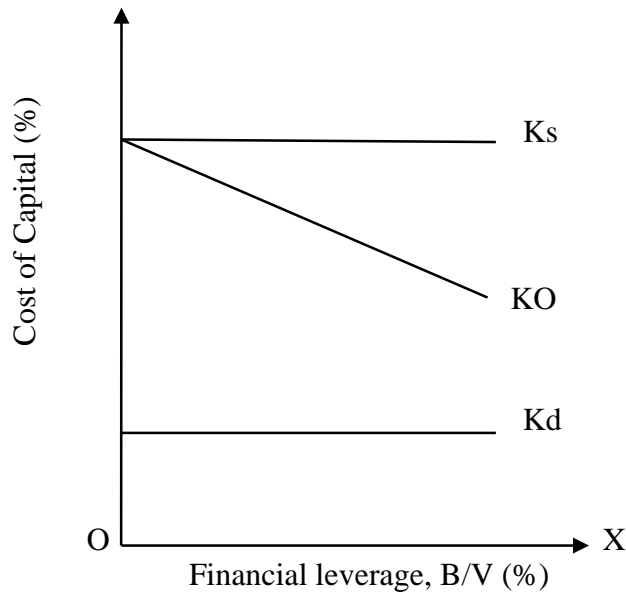
$$\text{Value of common stock (s)} = \frac{\text{NOI} - \text{I}}{K_s}$$

$$\text{Value of the firm (v)} = B + S$$

$$\text{Cost of capital (k)} = \frac{\text{NOI}}{V}$$

Graphically, the effect of leverage on the firms cost of capital and total market value of the firm is shown below:

Figure 2.1
Net Income Approach to CSM



The implication of this assumption is that with the increase in debt, a less expensive sources of capital increase in amount and consequently, weight average cost of capital falls while the overall market value of firm moves up. Conversely when debt are reduce a less expensive sources of capital decrease in amount. Graphically, the effects on the firm's cost of capital and its total market value are shown in figure. If k_d and k_s are constant, as it is assumed in the NI approach, then as the proportion of cheaper debt funds in the capital structure increases, the cost of capital decreases. Thus, under the NI approach, the firm can be can lower its cost of capital and raise its total market value through the addition of debt capital.

Net Operating Income Approach

The concept from financial theory that suggests the firm's capital structure has no impact on its market valuation. This approach is also develop by David Durand in 1952 in this approach, net operating income is capitalized at an overall capitalization rate to obtain the total market value of the firm. As EBIT and overall capitalization rate remain constants, capital structure does not affect the market value of the firm. Market value of the equity is computed after deducting

market value of debt from total market value of the firm. The required return on equity increases linearly with financial leverage. Assumption of this approach are:

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

Debt capitalization rate, k_d , remains constant.

The use of less costly debt funds increases the risk of shareholder. This causes the equity-capitalization rate to increase in the equity capitalization rate, k_s .

Market value of equity is residual value.

Mathematically,

$$\text{Value of the firm (v)} = \frac{\text{EBIT or NOI}}{k}$$

Total value of the firm:

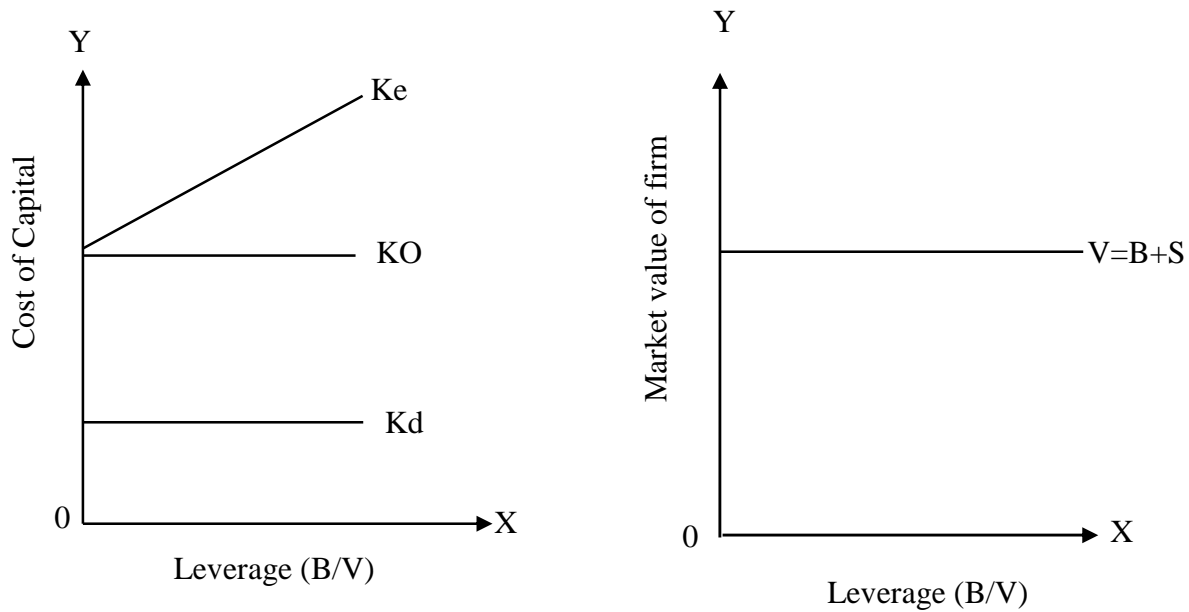
$$S = V - B$$

The implied cost of equity is then determined by:

$$K_s = \frac{NOI - I}{V}$$

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

Figure 2.2
Net Operating Income Approach to CSM



The above figures 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 increase with the increase in the debt-equity ratio. Thus the financial leverage, according to the NI approach is an important variable in the capital structure decision of the 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 crucial assumption that the use of debt does not change the risk perception of the investor (Pandey, 1999:26). Consequently, the interest rate of debt (k_d) and the equity capitalization rate (k_e) remain constant to debt. Therefore, the increased use of debt results in a higher market value of shares and as a result, a lower overall cost of capital (k).

Traditional Approach

In this theory, “the value of the firm is determined by adding the market value of the firm’s debt to the market value of its equity. Once market value has been determined the overall cost of capital or overall capitalization rate, can be found”. It is also known as the intermediate approach, it comprises between the net income approach and the operating income approach. From this view, we know that the value of the firm can be a judicious mix of debt and stock of the firm. Thus an optimum capital structure exists, it occurs when the cost of capital is minimum or the value of the firm maximum.

According to this view, 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 and 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 on shareholders to increase their 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. From the traditional approach, the manner in which the overall cost of capital reacts to change in capital structure that can be divided into three stages which are given below:

Stage 1: Increasing Value

In this stage, the cost of equity (k_e), remains constant or less slightly with debt. But when it increases fast enough to offset the advantage of low cost of debt (k_d) remains constant or rises

negligibly. Since the market views the use of debt as a reasonable policy. As a result, the value of the firm 'V' increases or the overall cost of capital. The combined effect of these will be reflected in increase in the market value of the firm and decline in overall cost of capital (K). In the first stage the overall cost of capital falls and the value of the firm increases with the increase in leverage. This leverage has beneficial effect as debts are less expensive. The cost of equity remains constant or increases negligibly. The proportion of risk is less in such a firm.

Stage 2: Optimum Value

In the second stage, further application of debt will raise cost of debt and equity capital sharply as to offset the gains in net income. Hence, the total market value of the firm would remain unchanged. The increase in the degree of leverage increases the cost of capital 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 specific point, the value of the firm will be maximum or the cost of capital will be minimum.

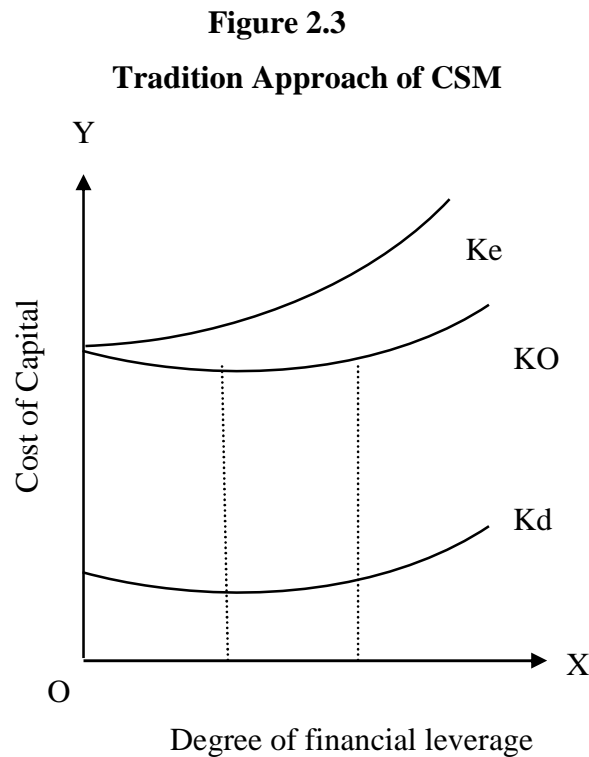
A stage is reached when increase in leverage has no effect on the value or the cost of capital, of the firm. Neither the cost of capital falls nor the value of the firm rises. This is because the increase in the cost of equity due to the added financial risk offsets the advantage of low cost debt. This is the stage wherein the value of the firm is maximum and cost of capital minimum.

Stage 3: Declining Value

Beyond a definite limit of leverage the cost of capital increases with leverage and the value of the firm decreases with leverage. This is because with the increase in debts investors begin to realize the degree of financial risk and hence they desire to earn a higher rate of return on equity shares. The resultant increase in equity capitalization rate will more than offset the advantage of low-cost debt. It follows that the cost of capital is a function of the degree of leverage. Hence, an optimum capital structure can be achieved by establishing an appropriate degree of leverage in capital structure. In this stage, the value of the firm decreases with leverage or the cost of capital increase with leverage or the overall cost of capital increases with the additional leverage. This happens because investor 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. From above stage we know,

-) Increase valuation and decreased overall cost of capital.
-) Optimum valuation and optimum overall cost of capital.
-) Declined valuation and increase overall cost of capital.

The overall effect of these three stages is to suggest that the cost of capital is a function of leverage. First it declines with leverage and after reaching a minimum point or range it starts rising. The minimum point defined the optimal capital structure. This fact is graphically shown in figures:



The Modigliani-Miller (m-m) Approach

Modern capital structure theory began in 1958, when Italian born American Professor of Economics Franco Modigliani (1918 – 2003) and American Economist Merton Miller (1928 – 2000) hereafter MM published what has been called the most influential finance article ever written. MM proved, under a very restrictive set of assumptions, that a firm's value is unaffected by its capital structure, and capital structure is irrelevant. The Modigliani Miller hypothesis is identical with net operating income approach. In other words, MM have restated and amplified the NOI Approach. MM argue that in the absence of taxes, a firms market value and the cost of

capital remain invariant to the capital structure changes. In their articles, they provide analytical sound and logical consistent behaviour justification in favour of their hypothesis. To begin, MM made following assumption, some of which they later relaxed:

Perfect Capital Markets

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

Homogeneous Expectations

All present and prospective investors have identical estimates of expected value of the probability distributed for each firm's future EBIT.

Homogeneous or Equivalent Return Classes of firm

Firms can be classified based on their degree of the business risk. since all firms within a class are equally risky, their expected future earnings are capitalized at the same rate.

2.2 Review of Books

An increase in the debt ratio also increases the risk faced by shareholders, and this has an effect on the cost of equity, K_e . This relationship is harder to quantify, but it can be done. A stock's beta is the relevant measure of risk for diversified investors. Moreover, it has been demonstrated, both theoretically and empirically, that beta increases with financial leverage. Indeed, Robert Hamada developed the following equation to specify the effect of financial leverage on beta.

$$b = b_u [1 + (1 - T) (D/E)]$$

The Hamada equation shows how increase in the debt/ equity ratio increases beta. Here b_u is the firm's unlevered beta coefficient, that is, the beta it would have if it has no debt. In that case, beta would depend entirely upon business risk and thus be a measure of the firm's "basic business risk". D/E is the measure of financial leverage used in the Hamada Equation. Note that beta is the only variable under management's control in the cost of equity equation, $K_e = K_{rf} +$

$[K_m - K_{rf}] b_i$. Both K_{rf} and K_m are determined by market forces that are beyond firm's control. However, b_i is determined (i) by the firm's operating decisions and (ii) by its capital structure decisions as reflected in its D/E ratio. Then, once b_u is determined, the Hamada Equation can be used to estimate how changes in debt/ equity ratio would affect the leveraged beta, b_i and thus the cost of equity K_e . It can illustrate the procedure with example assuming that:

Risk free rate of return (K_{rf}) = 6%

Required rate of return on average stock (K_m) = 10%

Unlevered beta (b_u) = 1.5

Now, with b_u , K_{rf} , and K_m specified it can use the CAPM to estimate how much market beta would rise if it began to use financial leverage, hence what its cost of equity would be at different capital structures. Currently based on above data current cost of equity is 12% as calculated below:

Risk premium = $K_m - K_{rf}$

= 10% - 6%

= 4%

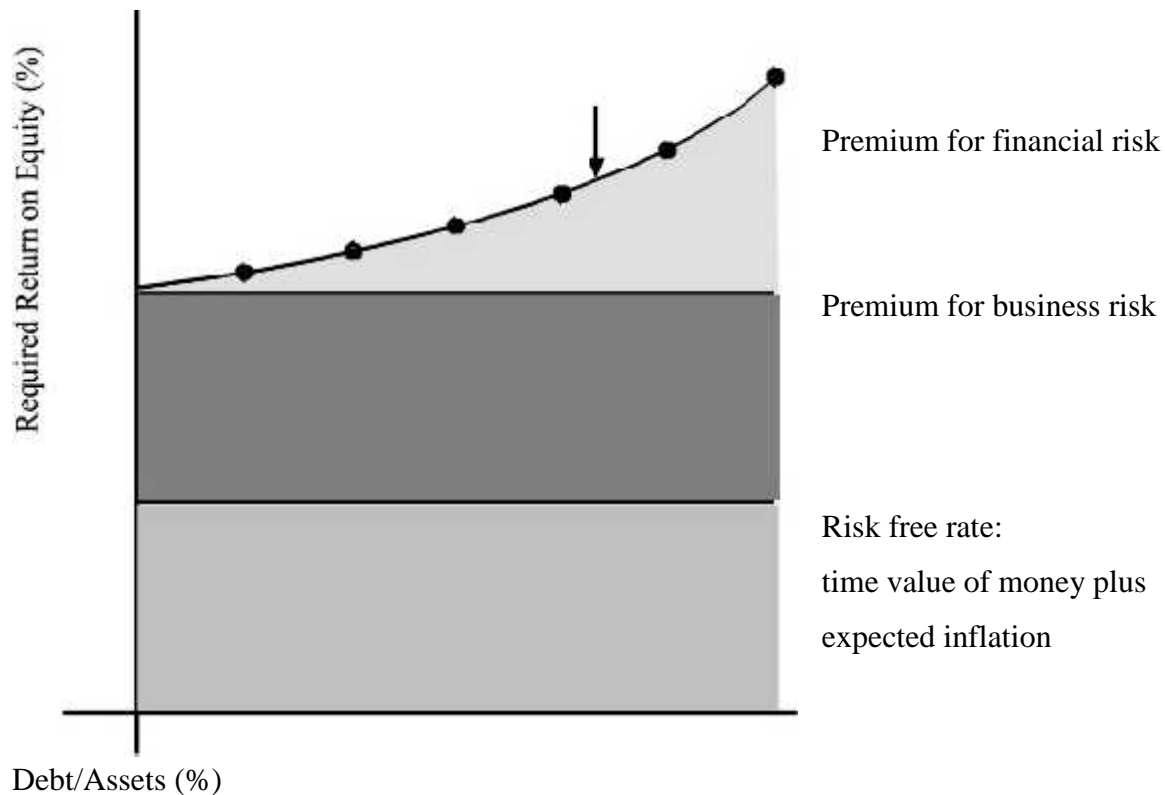
$K_e = K_{rf} + \text{Risk premium}$

= 6% + 4% × 1.5

= 12%

The first 6% is the risk free rate, the second the risk premium. Because firm has currently uses no debt, it has no financial risk. Therefore, the 6 percent is risk premium reflects only its business risk. If the firm changes its capital structure by adding debt, this would increase the risk stockholders bear. That, in turn, would result in an additional risk premium. Conceptually, this situation would exist:

$K_e = K_{rf} + \text{Premium for Business Risk} + \text{Premium for Financial Risk}$.



The figure alongside describes the firm's required return on equity at different debt ratios. As the figure shows, K_e consists of 6% risk free rate, a constant 6% premium for business risk, and a premium for financial risk that starts at zero but rises at an increasing rate as debt ratio increases (Alexander, G.J. and Bailey, 2002:201).

2.2.1 Trade-Off Theory

The trade-off theory of leverage in which firms trade off the benefits of debt financing (favorable corporate tax treatment) against the higher interest rates and bankruptcy costs. A summary of the trade-off theory is expressed graphically in figure. Here are some observations about the figure:

The fact that interest is a deductible expense makes debt less expensive than common or preferred stock. In effect, the government pays part of the cost of debt capital, or, to put it another way, debt provides tax shelter benefits. As a result, using debt causes more of the firm's operating income (EBIT) to flow through to investors. Therefore, the more debt a company uses, the higher its value and stock price. Under the assumptions of the Modigliani-Miller with taxes paper, a firm's stock price will be maximized if it uses virtually 100 percent debt, and the line

labeled “MM Result Incorporating the Effects of Corporate Taxation” in figure expresses the relationship between the stock prices and debt under their assumption. In the real world, firms rarely use 100 percent debt.

MM assumed that investors have the same information about a firm’s prospects as its managers- this is called symmetric information. However, in fact managers often have better information than outside investors. This is called asymmetric information, and it has an important effect on the optimal capital structure. To see why, consider two situations, one in which the company’s managers know that its prospects are extremely favorable (Firm F) and one in which the managers know that the future looks unfavourable (firm U).

Suppose, for example, that Firm F’s Research & Development labs have just covered a non-patentable cure for the common cold. They want to keep the new product a secret along as possible to delay competitor’s entry into the market. New plants must be built to make the new product, so capital must be raise. How should Firm F’s management raise the needed capital? If the firm sells stock, then, when profits from the new product start flowing in, the price of the stock would rise sharply, and the purchasers of the new stock would make a bonanza. The current stockholders(including managers) would also do well, but not as well as they would have done if the company had not sold stock before the price increased, because then they would not have had to share the benefits of the new product with the new stockholders. Therefore, one would expect a firm with very favorable prospects to try to avoid selling stock and, rather, to raise any required new capital by other means, including using debt beyond the normal target capital structure.

Now let’s consider Firm U. Suppose its managers have information that new orders are off sharply because a competitor has installed new technology that has improved its products’ quality. Firm U must upgrade its own facilities, at a high cost, just to maintain its current sales. As a result, its return on investment will fall (but not by as much as if it took no action, which would lead to a 100% loss through bankruptcy).How should Firm U raise the needed capital? Here the situation is just the reverse of that facing Firm F, which did not want to sell stock so as

to avoid having to share the benefits of future developments. A firm with unfavorable prospects would want to sell stock which would mean bringing in new investors to share the losses.

The conclusion from all this is that firms with extremely bright prospects prefer not to finance through new stock offerings, whereas firms with poor prospects do like to finance with outside equity. How should you, as an investor, react to this conclusion? You ought to say, "If I see that a company plans to issue new stock, this should worry me because I know that management would not want to issue stock if future prospects looked good. However, management would want to issue stock if things looked bad. Therefore, I should lower my estimate of the firm's value, other things held constant, if it plans to issue new stock." If you gave the above answer, your views are consistent with those of sophisticated portfolio managers of institutions such as Morgan Guaranty Trust, Prudential Insurance, and so forth. In a nutshell, the announcement of a stock offering is generally taken as a signal that the firm's prospects as seen by its management are not bright.

What are the implications of all this for capital structure decisions? Since issuing stock emits a negative signal and thus tends to depress the stock price, even if the company's prospects are bright, firms should, in normal times, maintain a reserve borrowing capacity that can be used in the event that some especially good investment opportunity comes along. This means firm should, in normal times, use more equity and less debt than is suggested by the tax benefit/bankruptcy cost trade off model (150-151)

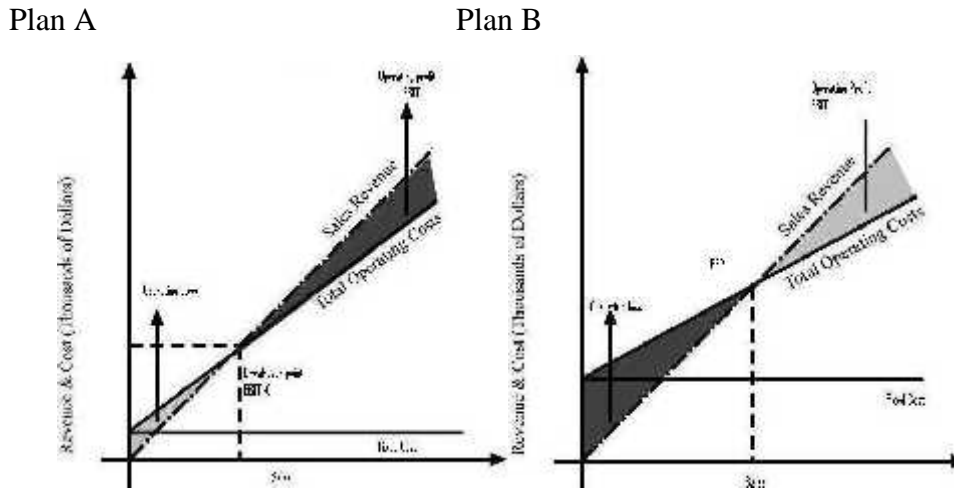
2.2.2 Operating Leverage

Other things held constant, the higher a firm's fixed costs, the greater its business risk. Higher fixed costs are generally associated with more highly automated, capital intensive firms and industries. However, businesses that employ highly skilled workers who must be retained and paid even during recessions also have relatively high fixed costs, as do firms with high product development costs, because the amortization of development costs is an element of fixed costs.

If a high percentage of total costs are fixed, then the firm is said to have a high degree of operating leverage. In business terminology, a high degree of operating leverage, other factors held constant, implies that a relatively small change in sales results in a large change in ROE.

Figure illustrates the concept of operating leverage by comparing the results that firm could expect if it used different degrees of operating leverage. Here the firm would not have much automated equipment, so its depreciation maintenance, property taxed, and so on would be low.

Figure 2.4
Degree of Operating Leverage



However, the total operating costs line has a relatively steep slope indicating that variable costs per unit are higher than they would be if the firm used more operating leverage.

One can calculate the breakeven quantity by recognizing that operating breakeven occurs when $ROE = 0$, hence when earnings before interest and taxes (EBIT) = 0.

$$EBIT = PQ - VO - F = 0$$

Here P is average sales price per unit of output, Q is units of output, V is variable cost per unit, and F is fixed operating costs. If solve for the breakeven quantity, Q_{BE} , can be obtain this expression.

$$Q_{BE} = \frac{F}{P - V}$$

2.2.3 Financial Risk

Financial risk is the additional risk placed on the common stockholders as a result of the decision to finance with debt. Conceptually, stockholders face a certain amount of risk that is inherent in a

firm's operations – this is its business risk, which is defined as the uncertainty inherent in projections of future operating income. If a firm uses debt (financial leverage), this concentrates the business risk on common stockholders. To illustrate, suppose ten people decide to form a corporation to manufacture disk drives. There is a certain amount of business risk in the operation. If the firm is capitalized only with common equity, and if each person buys 10 percent of the stock, then each investor shares equally in the business risk. However, suppose the firm is capitalized with 50 percent debt and 50 percent equity, with five of the investors putting up their capital as debt and the other five putting up their money as equity. In this case, the five investors who put up the equity will have to bear all of the business risk, so the common stock will be twice as risky as it would have been had the firm been financed only with equity. Thus, the use of debt, or financial leverage, concentrates the firm's business risk on its stockholders. This concentration of business risk occurs because debt holders, who receive fixed interest payments, bear none of the business risk.

2.3 Review of Journals and Articles

Hari Bahadur Khadka (2003), published an article "*Leverage and the Cost of Capital: Some Tests Using Nepalese Data*" where he expressed that the MM's propositions about the relationship between leverage and cost of capital in the context of Nepalese capital markets are tried to analyze. The main objective of the study is to determine whether the firm's overall cost of capital and cost of equity decline with the increasing use of leverage and the overall cost of capital. Therefore the leverage may not be regarded as contributing variable to the cost of capital function for Nepalese firms. But finding contradicts with the traditional approach of the capital structure theories. It is further concluded that the cost of capital declines not only with leverage because of the tax deductibility feature of interest charge. The relationship between the cost of equity and leverage is also strongly negative. Besides leverage, the size, and D-P Ratio are other important variables that affect the cost of capital in Nepalese context. The study was based on 15 listed Nepalese firms at NEPSE that are using debt capital in their total capitalization covering different sector like banks, manufacturing industry, insurance companies, Hotels, Public enterprise etc.

Rima Devi Shrestha (2004), published an article entitled “*Focus on Capital Structure of Selected and Listed Public Companies*” and written that - most of these companies have debt capital relatively very higher than equity capital. The study used data from 19 companies, which covered different sectors such as manufacturing, finance, utility service and other allied areas. Consequently most of them are operating at losses to the extent that payment of interest on loan has been serious issues. Most of the losses are after charging interest on loan. It should develop a suitable capital structure guideline to make public enterprise aware of its responsibility to repay the debt schedules. Their generated income is sufficient to cover the operating expenses but the profit is not sufficient to cover the interest to be paid for the debt capital it has employed in the enterprises. Government has to analyze cost and risk rerun trade off.

Thus, capital structure needs to be made more determinate by realistic analysis of cost. Lastly, she concluded that policy makers have to be careful in developing the suitable capital structure guidelines in making public enterprises.

Sudhir Poudyal (2004), “*Capital Structure: It's impact on value of a Firm,*” Seminar on Emerging Issues and Challenges in Corporate Finance in Nepal, Research Paper Submitted to Faculty of Management, TU, Kathmandu, Nepal,” an article by Sudhir Poudyal concentrated to examine the interrelationship between the objective of achieving an optimal capital structure and to provide conceptual framework for the determination of optimal capital structure. For this, a hypothetical firm is 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 the 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 other concerned groups.

Mohan Krishna Shrestha (2005), His study on “*Analysis of Capital Structure in Selected Public Enterprise*” argue that most of public enterprise have confusing capital structure since the

corporation are not guided by any objectives based financial and polices. The corporation are using least combination of debt with equity to avid financial burden as far as possible. According to Mr. Shrestha, the debt equity ratio should neither be highly levered to create too much financial obligation strategy to bypass responsibilities with out performance. He further added that in many instances aphorism become the basis of capital structure and most of them want to eliminate debt if possible to relieve financial obligation.

2.4 Review of Thesis

Neupane (2002), Conducted research on “*A Study on Capital Structure of Nepal Bank Limited*”. The basic objectives of this study was to analysis interrelation between different ratio analysis of components parts of capital structure, debt equity ratio, net worth, deposit/investment ratio etc. According to him the research analyzed the different financial aspects of Nepal Bank Limited.

He remarked that the total deposit and total investment were not significantly related. He concluded that the net worth was used in unproductive assets of the bank and further commended that the bank needs to have productive use of its net worth.

Subedi (2005), In his MBA thesis “*A Study on Capital Structure of Nabil Bank Limited* “which studies specific objectives were analyzed the capital of Nabil bank ltd. to show the financial position, examine the different profitability and shows the overall trend analysis. Under this study use various tools such as graph, percentage, diagram, mean standard deviation and co-variance. He found and concluded that total liabilities and capital item, shows the overall situation of bank in falling down. Deposit is the biggest amount in the balance sheet. Fixed deposit is taken as long-term debt in the banking business. It is a key determinant factor to capital structure. Debt and equity are properly mixed good capital structure is formed. Price earning ratio reflects the price currently reported EPS. It measures the investor’s expectation and the market appraised of the performance of the firm. This study suggests, deposit is the major concern to the capital structure. It effects on investment policy. The more the fixed deposit increase ,the more the long -term investment becomes possible. Bank becomes more successful and competent as per its capacity to collect the fixed deposit. So fixed deposit should be collected more as can as possible.

Shakya (2006), “*A Study on Capital Structure of Nepalese Commercial Banks (With Special Reference to Bank of Kathmandu Ltd., Nepal Investment Bank Ltd. and HBL)*” Master’s Thesis, T.U., Kathmandu,) The basic objective of the study made by Prafulla Shakya was to analyze the interrelationship of capital structure with various important variables such as earning per share, dividend per share and net worth of the commercial banks and to provide suggestions to overcome various issues and gaps. The study used primary data as well as secondary data. It used Financial Tool ratio analysis and Statistical Tools Karl Pearson’s correlation coefficient and probable errors.

The study concluded that all of the sample banks have fluctuating trend of long term debt to total debt ratio. All the sample banks do not have appropriate ratio of long term debt to capital employed and all the samples banks are able to cover the interest but as higher interest coverage ratio is better. The study suggested that the banks should follow the theoretical aspects of the capital structure management or give a bit more attention in this matter and try to manage the activities accordingly. All these banks should plan their capital structure well analyzing the possible financial alternatives considering high return and least risk. And the banks should minimize the financial and other expenses so the interest coverage ratio could be increased. Researcher recommended to use less cost debt, improve strategy of promotion activities, analyze and evaluate before making investments, and to increase the return and decrease risk.

Yadav (2007), “*The Capital Structure Management of Buddha Air Private Limited*”, Master’s Thesis, T.U., Kathmandu. The main objectives of the study are to analyze and examine the capital structure of Buddha Air Private Limited, analyze trading on equity, find out the profitability position, analyze the assets utilization. The study mainly used secondary data for the analysis. The methodology used includes financial tools such as Ratio Analysis and Statistical tools such as Correlation Co-efficient and Probable Error. The study has found that Buddha Air is very highly levered. Debt capital is proportionately higher than the equity capital. This higher debt capital is a serious implication from the firm’s point of view. In this condition, the capital structure will lead to inflexibility in the operation of the firm as creditors would exercise pressure and interfere with management. Buddha Air has raised debt from different commercial banks and

has to pay heavy portion of profit as interest, so the payment of the interest will be hazardous when profit is declining. So, it is suggested that Buddha Air Private Limited should decrease its debt capital as far as possible, and company should increase the equity proportion in financing its assets to be safe mode against liquidation.

Ghimire (2007), “*A study on Capital Structure Management on Commercial Banks of Nepal (With Special Reference to EBL, NIBL, and HBL)*” Master’s Thesis, T.U., Kathmandu, 2007). The basic objective of the study made by Chandra Ghimire was to analyze the capital structure in terms of debts to shareholders equity, total debts to total assets, interest coverage, return on capital employed, and return on shareholder’s equity of selected commercial banks and provide suggestions to overcome various issues and gaps.

The study used primary data as well as secondary data for the analysis .And the study has 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 coefficient and probable errors. The study concluded that all the commercial banks are using high percentage of total debt in raising the assets and all the banks are able to pay interest. The study suggested that the bank must reduce the level of debt by increasing equity level future years to compensate the capital of debt. And Nepal Investment Bank Ltd. must reduce its debt level for procurement of the assets. It is also suggested to bear low risk so that additional return on capital and equity could be realized. This is essential from investor attraction point of view. The bank needs to reduce its higher operational expenses and control fluctuations in the earnings per share (EPS) to improve its market price per share.

Kandel (2008), “*A Comparative Analysis of Capital Structure of Commercial Banks (With Reference to HBL and BOK)*” Master’s thesis, Tribhuvan University, Kathmandu,). Kandel with a long history of banking world as well as Nepal formulated the objectives of the study as to evaluate the role of capital structure on growth of commercial banks in Nepal, examine present capital structure of commercial banks of Nepal and to state a relationship of capital structure with EPS, DPS and net worth. Out of 25 listed commercial banks of Nepal, 2 banks are selected as samples for the study and study is based on cent percent secondary data of the sample banks.

With well research design it focused on the various tools such as ratio analysis, leverage analysis, traditional analysis, capital structure analysis and MM analysis on the study. From the study it was found that the commercial banks of Nepal are not using large portion of debt in their capital structure which is shown by finding of the study the long term debt to total assets ratio 0.046 of HBL and 0.060 of BOK in average and its interest coverage ratio is satisfactory.

The return on shareholders' equity of HBL is 22% and 21% of BOK which is good indication and EPS of Rs.53.26 HBL and Rs.32.50 also shows the same. It has tried to test the MM proposition that value of firm is affected by the use of debt in capital structure by using MM model which has given mixed result that increase in debt causes increase in value of firm in some years whereas in some years increase in debt caused decrease in value of the firm. On the correlation analysis it found the relation between long term debt and EPS is insignificant but the relationship between EBIT and DPS is significant. Researcher recommends to have knowledge on capital structure and minimize risk of the shareholders' even though they are having high return in present policy. The thesis mentioned lots of tools for analysis on research design but fail to use them on thesis whereas the conclusion on relevant or irrelevant of capital structure on value of the firm till not able to find. The findings of the thesis will be difficult to indicated for the whole commercial banks of Nepal as the thesis title suggest because the sample size is not sufficient which represent only 8% of the total population which is so much far below the total population

2.5 Research gap

As the above research, works are concerned with capital structure management of HBL and SBL. They are mostly done by taking single firm and their analysis is in absolute nature. This study are done considering the data of five years 2006/07 to 2010/11 of HBL and SBL. The basic objective is all the studies shows analysis of components parts of capital structure ratios and its interrelationship, debt serving capacity relation between returns on equity, debt ,earning before interest and tax. Capital structure is the first and very much important factor of business success. Having the gap about capital structure Analysis this study try to check the soundness of capital structure based upon the banking sector of Nepal. Capital structure analysis what sort of linkage is there in the banking sector are employing their capital or it adopted to satisfy its stake holders

with respect to earning of different sector. Moreover this research is comparative study of two commercial bank of the same generation which will provide information to the concern party for comparative analysis. Besides the analysis of capital structure ratio analysis this study has made an attempt to analysis the effect of capital structure on the values of the companies .Further more this study will help research student to carry further studies as well as helpful to the interested group in the selected companies to analyze their position at present search for the prospective investors. It helps the student to find the statistical tools as well as financial tools.

CHAPTER- III

RESEARCH METHODOLOGY

Research Methodology refers to the four various sequential steps to be adopted by a researcher in studying a problem with certain objectives in view. This chapter mainly deals with the research methodology which are in the period of research. Research means to search the problem again and again to find out something more about the particular problem. A research methodology helps us to find out accuracy, validity, suitability. The justification on the present study cannot be obtained without help of proper methodology.

Similarly, research methodology refers the various steps that are generally adopted by a researcher by studying his research problem along with the logic behind it. Thus research methodology is a way systematically so that we can search the research problem. "Research is the process of systematic and in-depth study or search for any particular topics, subject or area of investigation backed by collection, presentation and interpretation or relevant details or data"(Kothari, 1984:19). Research Methodology basically describes the methods, processes, tools and techniques applied in the entire process of a scientific research. To achieve the basic objective of the study, the following methodology has been adopted which includes research design, population sample, data gathering procedure, data processing procedure techniques of analysis and so on.

So this chapter is divided into different subheadings like: research design, population and sample, sources of data, data collection techniques, data analysis tools, limitations of the methodology and review of related studies.

3.1 Research Design

Research design is important for scientific investigation. It is a plan structure and strategy of the investigation conceived so as to obtain answer of questions and to control variance. Research design gives students or investigators direction to research systematically."A research design is

the arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure”. Generally research design means definite procedure and technique which guides in studying the ways of research viability. The main objectives of the study is to analyze the capital structure management in terms of risk and returns of two banks in Nepal i.e. a case study of Himalayan Bank Limited and Siddhartha Bank Limited to establish the nature of relationship between the returns of the selected banks and the market returns as well as the selected bank themselves the research design of the study is analytical and correlation type. It emphasizes on descriptive and analytical study of the collected data from profit and loss account and balance sheet over a period of time as well as personal and telephone interviews. Analysis with different statistical and financial tools has been conducted to find out the necessary result also. In research design first of all, all information are collected and the important information and data are selected. Then data are arrange in a systematic manner. After that the data are analyzed by using various financial and statistical tools and at last analyzed data are compare and interpreted for conclusion.

3.2 Nature and Sources of Data

The research is based on both the primary and secondary data with the view to fulfill the predetermined objectives that are set up for the study. The required data have been collected mainly from the secondary sources. Primary sources of data are mainly based on interview, questionnaire and secondary data are mainly based on booklets. But this research is based on secondary data. Required data is collected from published financial statements of the commercial banks listed in the office of security board of Nepal. Since the study is basically analytical and historical on nature and most of the data are based on the performance of the sampled commercial banks. For the purpose of the study, all the data used are used on the second hand published data of the respective banks under study. Such data have been derived from the financial statements of the companies concerned. All the data used in this study are obtained from the secondary sources. The main sources of the data are the financial statements of the selected commercial banks under study and of other bank also. The required financial statements has been obtained from the website of Himalayan bank limited and Siddhartha Bank Limited. Moreover some of the data required for this study has been obtained from the economy survey. The basic sources of data are:

-) Annual Reports
-) Published materials from concerned bank
-) Financial statements of concerned bank
-) Related books and journal.
-) Excel program to find out the standard deviation, correlation, regression and to make a chart also.
-) Bulletin and reports of NRB
-) Various Websites
-) Various information of Nepal Stock Exchange

3.3 Population and Sample

There are 31 commercial banks operating in Nepal. To attain the objective of Himalayan bank and Siddhartha bank limited are selected for research proposes as sample bank among the commercial bank in this research study. Among these two commercial banks Himalayan bank is the best performing bank in Nepal. Their EPS, interest coverage ratio, net profit are goods. This is equipped with research and analysis team, proper MIS, sufficient capital and skilled manpower. They also have access to global financial markets. These factors put HBL is the best position than SBL.

3.4 Data Collection Procedure

This study is based on the secondary as well as primary data. The secondary data are collected from the balance sheet, profit and loss account of concerned banks, Nepal stock exchange, security board of Nepal ,annual report of various banks etc, questionnaires prepared for the purpose are distributed to the selected managerial manpower and stock market related to person and they acre collected taken for the observation and analysis.

In order to collect the necessary information and data for the present analysis, a systematic process has been employed as follows:

-) First of all need of the study has been identified.
-) Personnel have been made to collect the required data and information.

- J In order to collect some data and information, most pertinent organization and official authorities has been identified.
- J On the basis of need identification, nature of the data has been identified.
- J On the basis of such information and data, analysis has been done.

3.5 Method and Techniques of Data Analysis

Mainly financial methods are applied for the purpose of this study appropriate statistical tools are also used. Among them correlation analysis regarded as major one is used for this research. Although the separate section of the techniques of analysis have not been presented in the study, the descriptive, correlation have been applied through out the study. For the purpose of descriptive analysis, risk and return of the banks under study have been analysis on the basis of interest income and net income of the respective bank. During this course of analysis, return of the selected commercial banks along with averages standard deviation and coefficient of variation have been computed and arranged in the tabular form for their descriptive analysis to observe the variability of the return over the period of the study. The risk of the selected banks have also been analyzed descriptively with respect to covariance with correlation coefficient. Descriptive analysis has also been used to analyzed the risk return trade off to the selected banks on the basis of net return on total investment and the capital adequacy risks, liquidity risk and credit risk of the banks under study. The techniques of correlation analysis has been applied for the study while calculating correlation coefficient of the returns of the selected banks.

3.6 Required Tools for the Analysis

Different tools have been selected according to the nature of data as well as subject matter. The major tools employed for the analysis of the data is the ratio analysis which established the quantities or numerical relationship between two variables of the financial statement. In this study various financial, accounting and statistical tools have been used to achieve the objectives of the study. The analysis of data will be done according to the pattern of data available.

For the analysis of the data and to reach to a conclusion ,different tools of analysis have been applied for the study. Mainly the accounting tools, statistical tools and the financial tools have been used as mentioned below:

3.6.1 Financial Tools

Financial tools are used to examine the financial strength and weakness of the bank. In this study financial tools like ratio analysis and financial statement analysis i.e. leverage analysis, EBIT, EPS analysis and other have been used.

3.6.1.1 Ratio Analysis

Ratio is the numerical relationship between two variables. It is generally expressed in percentage. It is obtained by dividing one variable to another variable and multiplied by 100. It is the powerful tools of financial analysis .Financial ratio presents the relationship between two accounting figure expressed mathematically. So analysis is defined as the systematic use of ratio to interpret the financial statements so that the strength and weakness of a firm as well as its historical performance and current financial condition can be determined.”Ratio analysis is a part of the whole process of analysis of financial statement of any business of industrial concern especially to take output and credit decision” (Kothari, 1990).

Thus, ratio analysis is used to compare a firms financial performance and status to that of the other firms or to itself overtime. The qualitative judgment regarding financial performance of a firm can be done with the help of ratio analysis. Even though there are many ratios, only those ratio have covered in these study which are related to the investment operation of the bank.

Financial ratio analysis is designed to determined the relative strengths and weakness of business operation. It also provides a frame work for financial planning and control. The required financial ratios for this study are enabling in details as Liquidity ratios are used to measure a firms ability to meet its current obligation as they come due. The current ratio measures the extent to which the claims of short term creditors are covered by short term assets. It is determined by dividing current assets by current Liabilities.

Less or more than standard ratio is not preferable. If it is less than standard ratio, it shows the solvency position is not better than vice versa. The quick or acid test, ratio is calculated by

deducting inventories from current assets and dividing the remainder by current Liabilities. Inventories are excluded because it may be difficult to liquidate them at their full book value.

More or less than standard ratio is not favorable for the company. Assets management ratios measures how effectively a firm is managing its assets and whether or not the level of those assets is properly related to the level of operations as measures by sales. The inventory turnover ratio is defined as cost of goods sold divided by inventories. It is often necessary to use the average inventory figure rather than the year-end figure's especially if the firm's business is highly reasonable or if there has been a strong upward or downward sales trend during the year. It measures the efficiency of inventory utilization.

Increasing ratio is favorable which shows that firm is very efficient on inventory management. The days sales outstanding also known as average collection period is used to evaluate the firm's ability to collect its credit sales in a timely manner. It is calculated by dividing average daily sales into accounts receivable to find the number of days sales tied up in receivable. Thus the DSO represents the average length of time that the firm must wait after making a sales before receiving cash. The minimum day on DSO or ACP is favorable for a company that shows the firm is collecting the debtors within a short period. The fixed assets turnover ratio of sales to net fixed assets is measures how effectively the firm uses its plant and equipment to generate sales.

Increasing ratio shows that the firm is very efficient on fixed assets management. A low ratio indicates idle capacity of the assets. The total assets turnover is calculated by dividing sales by total assets. It measures the overall utilization of firm's assets. A low ratio indicates that the company is not generating an adequate volume of business for the size of its assets investment. So, increasing ratio is preferable. Then also we can calculate the following financial analysis:

3.6.1.2 Long term debt to Total Assets Ratio

Long-term debt to total assets ratio reflects the relative claims of creditors against the assets of the firm. In other words, this ratio indicates the relative proportion of debt in financing the assets of the firm. This ratio is also known as external equity ratio and is calculated as follow:

Long Term Debt

$$\text{Debt to Total Assets Ratio} = \frac{\text{Long Term Debt}}{\text{total Assets}}$$

Where, long term debt includes debentures and loan not maturing with one year. Creditors prefer low debt ratios because the lower the ratio, the greater the cushion against creditor's losses in the event of liquidation. Stockholders, on the other hand may want more leverage because it magnifies expected earnings.

Interest Coverage Ratio (Debt Capacity Ratio)

This ratio is called "Time Interest Earned Ratio (TIE 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. In other words, it measures the debt servicing capacity of a firm in so far as the fixed interest on the total loan is concerned. It is determined by dividing the operating profit or Earning before Interest and Taxes (EBIT) by the fixed interest (I) charge on loan. Thus, in the calculation of Interest Coverage Ratio is expressed as.

$$\text{Interest Coverage Ratio (in times)} = \frac{\text{EBIT}}{\text{Interest Charge(I)}}$$

This ratio is very useful in determining whether a borrower is going to be able to service interest payment on a loan. This ratio is also known to determine whether a firm has the ability to meet its long-term obligations. From the creditors point of view the larger the coverage the greater the ability the firm to handle charges.

The TIE ratio is useful for assessing a company's ability to meet interest charges on its debt, but this ratio has two shortcomings: (i) Interest is not the only fixed financial charge, companies must also reduce debt on schedule and many firms lease assets and thus must make lease payments (ii) EBIT does not represent all the cash flow available to service debt especially if a firm has high depreciation and/ or amortization charges. To account for these deficiencies, bankers and others have developed the EBITDA coverage ratio which is most useful for relatively short-term lenders such as banks, which rarely make loans (except real estate backed loans) for longer than about five years. Over a relatively short period, depreciation-generated

funds can be used to service debt. Over a longer time, those funds must be reinvested to maintain the plant and equipment or else the company cannot remain in business. Therefore, banks and other relatively short-term lenders focus on the EBITDA coverage ratio whereas long-term bondholders focus on the TIE ratio.

Earning Per Share (EPS)

A part from return the profitability of a firm from the point of view of the ordinary shareholders is earning per share. It measures the profit available to equity shareholders per share. The EPS are income of per common share. It can be calculated as follows:

$$\text{EPS} = \frac{\text{Net Income}}{\text{Total No. of Share}}$$

Higher EPS is preferable and vice versa.

Price Earning Ratio (P/E ratio)

Price earnings ratio shows how much investors are willing to pay per rupee of reported profits. P/E ratios are higher for firms with high growth prospectus, other things held constant, but they are lower for riskier firm. P/E indicates investor's expectation about the growth of the firms earnings.

$$\text{P/E Ratio} = \frac{\text{Market Price per Share}}{\text{Earning per Share}}$$

Return on Total Assets (ROA)

This ratio measures the productivity of the assets. Higher ratio shows the higher return on the assets used in the business there by indicating effective use of the resources available and vice versa. The formula of ROA is given below:

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

Return on Shareholders Equity

This ratio is ascertained for measuring the efficiency of the investment made by the shareholders in the business on the basis of relationship between shareholder's fund and net profit. Shareholders are the owners of the company. To measure the return of shareholders, can use return on shareholders' equity. This ratio analyze if the company has been able to provide higher return on investment to the owners or not. It is calculated as:

$$\text{Return on Shareholders' Equity (ROSE)} = \frac{\text{Net Profit After Tax}}{\text{Shareholder fund}}$$

(Shareholders Fund =Share Capital +Reserve Fund +Profit and Loss)

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.

Statistical Tools for Analysis

In course of data study and analysis related to the study different statistical tools are often employed as well as interpretation of data taking consideration to the objectives of the study. Following statistical tools are used during the data presentation and analysis section of the thesis.

-) Standard deviation
-) Coefficient of correlation
-) Regression Analysis
-) Probable Error (PE)

I have calculated standard deviation, Coefficient of Correlation, Regression Analysis from the excel program and some of them are calculated below. The probable error are also shown in the annex below.

Standard Deviation

The standard deviation measures the absolute value of risk i.e. is variability of the returns from the mean returns. It is also known as root mean square deviation for the reason that is the square root of the mean of squared deviations from the arithmetic mean. The formula of standard deviation are as follows:

$$\text{Standard Deviation } (\sigma) = \sqrt{\frac{\sum X^2}{n}}$$

Where,

$$X = X - \bar{X}$$

n = frequency

Correlation Analysis

The world is filled with relationship between demand and supply, between sales and advertisement, between height and weight of a person between, between yields and fertilizers, among sales, price and advertisement etc. and wish to seek out the relationship between these variables. For example what will happen in sales if we change in the price of the commodity? What sorts of relationship exists between these two variables? The correlation is a tool which is designed to measure the relationship between two or more variable and the correlation analysis measures the strength or degree of linear relationship between two or more variables. On the basis of variable taken under study, there are three types of correlation analysis. They are simple correlation ,partial correlation and multiple correlation.

The correlation is one of the most common and most useful statistics. A correlation is a single number that describes the degree of relationship between two variables. Correlation is a statistical technique that can show whether and how strongly pairs of variables are related. For example, height and weight are related; taller people tend to be heavier than shorter people. The main result of a correlation is called the correlation coefficient (or "r"). It ranges from -1.0 to +1.0. The closer r is to +1 or -1, the more closely the two variables are related. If r is close to 0, it means there is no relationship between the variables. If r is positive, it means that as one variable gets larger the other gets larger. If r is negative it means that as one gets larger, the other gets smaller (often called an "inverse" correlation).

In case of simple correlation, it studies the degree of relationship between two variables: independent and dependent variables. But in real life so many independent variables do affect the dependent variable and the study on degree of relationship between a single dependent variable and a number of independent variables in combination is called multiple correlation analysis.

The formula for the calculation of simple correlation coefficients by the actual mean method can be expressed as follows:

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

Interpretations of r:

When, $r = +1$ → there is perfect positive relationship.

When, r is close to 1 → there is strong positive relationship.

When, r is close to 0 but positive → there is low degree of positive relationship.

When, r is equal to 0 → there is no relationship.

When, r is close to zero but negative → there is low degree of negative relationship.

When, r is close to -1 → there is strong negative relationship.

When, $r = -1$, → there is perfect negative relationship.

Regression Analysis

The term 'regression' literally means 'stepping back towards the average'. The concept of regression was first given by the English biometrician Sir Francis Galton in reports of his research on heredity. The regression analysis is used to estimate the likely value of one variable from the known value of other variable. The cause and effect relationship is clearly indicated through regression analysis than by correlation. There are two types of variables in regression analysis dependent variable and independent variable. The dependent variable is also known as regressed or explained variable while the independent variable is called as repressor or predictor or explanatory variable. It studies the statistical relationship between variables.

The main objective of regression analysis is to predict or estimate the value of dependent variable corresponding to a given value of independent variables. On the basis of variable taken under study, regression analysis is broadly divided into two categories. They are simple regression analysis and multiple regression analysis. In simple regression we study the mathematical relationship between a dependent variable and only one independent variable. The main objective of regression analysis is to predict or estimate the value of dependent variable corresponding to a given value of independent variables.

Multiple Regression equation is the algebraic relationship between one dependent variable and two or more independent variables. This relationship is used to estimate the value of dependent variable for the given values of independent variables. In this thesis there is only two variables X and Y which have two lines.

-) Regression line Y on X
-) Regression line X on Y,

A line of regression is the line which gives the best estimate of one variable for any given value of X. The regression equation of Y on X is

$$Y = a + bX$$

Where,

a=Y-intercept

b= b_{yx} = Slope of the regression line

= Regression coefficient of Y on X.

Y=dependent variables

X=Independent variable

The value of a and b are estimated by solving the following normal equation are,

$$Y = na + b \sum X$$

$$YX = a \sum X + b \sum X^2$$

By solving these two normal equation, we get

$$a = Y - bX$$

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

Therefore, the estimated regression line of Y on X.

$$\bar{Y} = a + bX$$

Where,

\bar{Y} is the estimated value of Y for given value of X,

A line of regression of X on Y is the line which gives the best estimate for the value of X for the given value of Y. The regression equation of X and Y is:

$$X = a + bY$$

Where,

A = Intercept of the X-axis

B = slope of the regression line.

R = Regression coefficient of X on Y.

X = dependent variable

Y = Independent Variable

The value of a and b are estimated by solving the following normal equations, The normal equations are:

$$\sum X = na + b \sum Y$$

$$\sum XY = a \sum Y + b \sum Y^2$$

By solving these two normal equations, we get

$$\bar{X} = a + bY$$

Where,

\bar{X} is the estimated value of X for given value of Y.

Probable Error (PE)

The probable error is used to measure the reliability and test of significance of correlation coefficient. It is calculated by the following formula.

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

Where,

R= the value of correlation coefficient

N= number of pairs of observations

P.E. is used in interpretation whether the calculated value of r is significant or not,

- i. If $r < P.E.$, it is significant, i.e. there is no evidence of correlation.
- ii. If $r > 6P.E.$, it is significant.
- iii. If $P.E < r < 6PE$ nothing can be concluded.
- iv. By adding and subtracting the value of probable error from the coefficient of correlation we get the upper and lower limits respectively within which correlation coefficient in the population can be expected to lie. Symbolically, Correlation in the population = $r \pm P.E.$

Student's T-test Regarding Capital Structure

To test whether there is statistically significant correlation between the related variables of HBL and SBL in terms of capital structure, debt to equity ratio. Students have been computed by applying the following formula by actual mean method.

$$t = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{S^2 \left(\frac{1}{n_1} + \frac{1}{n_2} \right)}}$$

Where,

t = student's t-test

\bar{X}_1 and \bar{X}_2 = Expected or mean Variables HBL and SBL.

n1 = No of observation for HBL

n2 = No of observation for SBL

$$S^2 = \frac{1}{n_1 + n_2 - 2} \left\{ \sum [(X_1 - \bar{X}_1)]^2 + \sum [(X_2 - \bar{X}_2)]^2 \right\}$$

Tabulated value is based on $n-2$ degree of freedom and 5% level of significance. If the calculated value of t exceeds the tabulated value of t at 5% level of significance and for the above mentioned degree of freedom, the null hypothesis will be rejected which will employ that the value of r is significant and vice versa.

CHAPTER - IV

DATA PRESENTATION AND ANALYSIS

4.1 Introduction

The part data presentation and analysis is the most important section of this thesis where the collected data have been presented in easy and attractive form related to the thesis in various tables, diagrams etc. To make the research analytical, the presented data are analyzed, using different appropriate tools, and the findings are tried to synthesize to the objectives of the study. It is the systematic disclosure of the data related to the study and analysis of the data in a corrective way drawing the conclusion of analysis and finally matching it with the statement of problems of the research study. Here attempt has been made to analyze the data collected from SBL and HBL related to this study systematic presentation so that descriptive and analytical research design can be applied effectively and reviewers' can grasp the gist of the study easily in a convenience way.

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. The analysis in this chapter are divided into following sections, which is directly or indirectly related to the capital structure. In this chapter the effort has been to analysis of capital structure on risk and return of the sample bank. This chapter first proceeds with financial analysis by tabulation and then at last the statistical analysis. The financial analysis is done through presentation of data and calculating various financial ratios which reflects the relationship between the variables affecting the capital structure. In this chapter data collected are analyzed and presented mathematically. This chapter calculated by following chapter.

4.2 Capital Structure Analysis

Capital structure of the bank is analyzed incorporating the analysis of relationship between SBL and HBL.

4.2.1 Analysis of Capital Structure Position of SBL

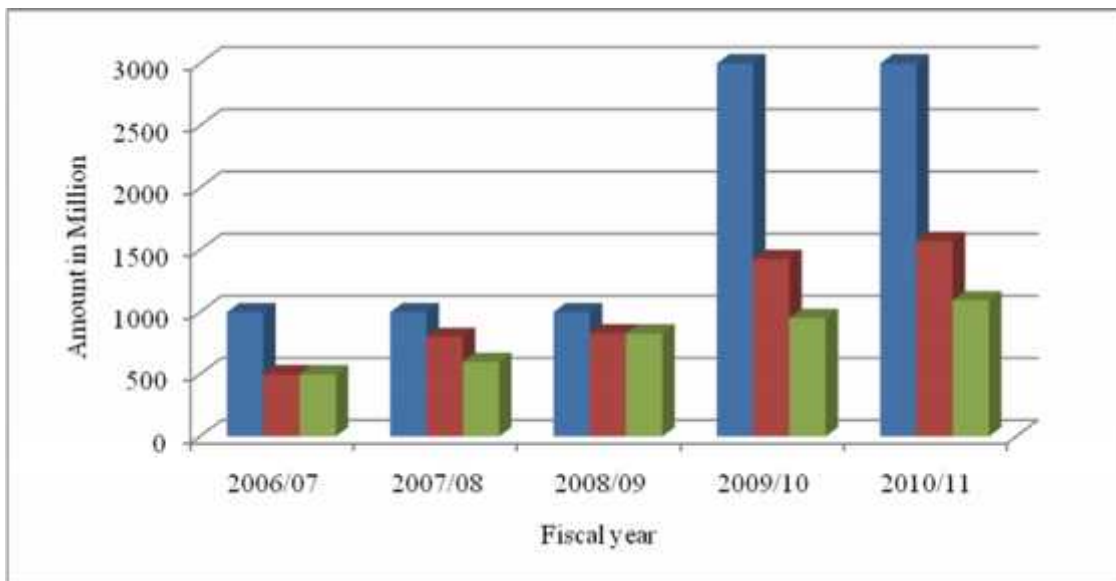
Table 4.1
Analysis of Capital Structure Position of SBL

(In Million)

Capital	2006/07	2007/08	2008/09	2009/10	2010/11
Authorized Capital	1000	1000	1000	3000	3000
Issued Capital	500	800	828	1428.3	1571.13
Paid Capital	500	600	828	952.2	1095.03

Sources: Annual Report of SBL

Figure 4.1
Capital Structure Position of SBL



The above table shows the authorized capital of 2006/07 to 2010/11 is 1000,1000,1000,3000 and 3000 respectively. The issued capital is 500,800,828,1428.3 and 1571.13 respectively. The paid

of capital is 500,600,828,952.2 and 1095.03 respectively. The figure shows authorized capital is the highest among the others.

4.2.2 Analysis of Capital Structure Position of HBL

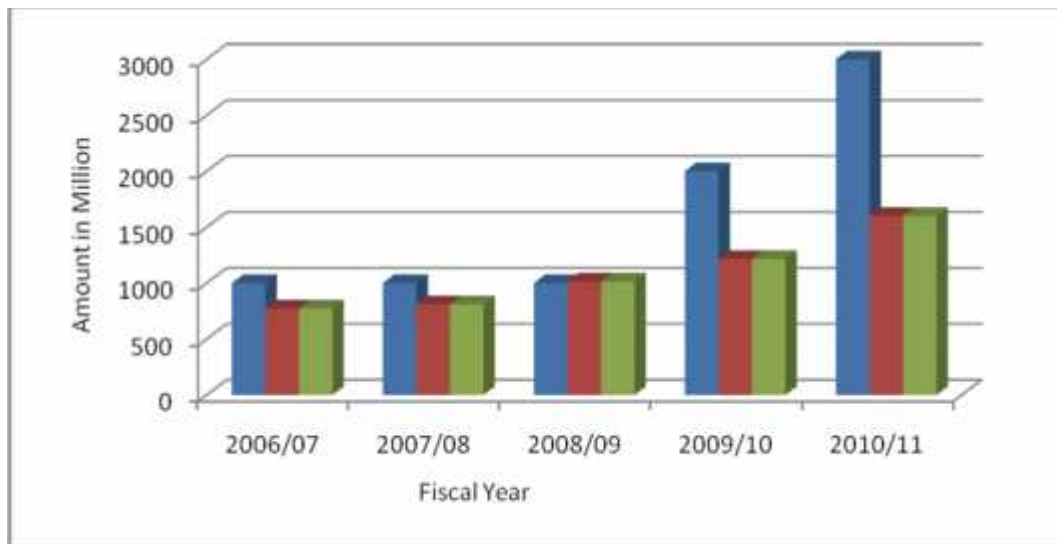
Table 4.2
Capital Structure Position

(In Million)

Fiscal Year	2006/07	2007/08	2008/09	2009/10	2010/11
Authorized Capital	1000	1000	1000	2000	3000
Issued Capital	772.2	810.81	1013.513	1216.215	1600
Paid Capital	772.2	810.81	1013.513	1216.215	1600

Sources: Annual Report of HBL

Figure 4.2
Capital Structure Position



The above table shows the authorized capital of 2006/07 to 2010/11 is 1000, 1000, 1000, 2000 and 3000 respectively. The issued capital is 772.2, 810.81, 1013.513, 1216.215 and 1600. The paid capital is 772.2, 810.81, 1013.513, 1216.215, and 1600 respectively. The figure shows authorized capital is the highest among the others. The issued capital and paid capital are in same ratio.

4.2.3 Analysis of Optimal Capital Structure

The analysis of Capital Structure plays a vital role for this thesis. When debt and equity are properly mixed, it minimizes the cost of capital and maximizes the value of the firm. In order to analysis the value of the banks, fixed deposit and equity share capitals are taken into consideration. Net Income approach is considered to find out the overall capitalization rate of the banks. In order to analyze the capital structure management of the banks the value of the firms is determined by adding debt and equity.

Value of the firm = Total Debt + Total equity

$$V = TD + TE$$

4.2.3.1 To Find Out the Value of the Firm

To find out the value of the firm, total debt and total equity have calculated. The percentage change in given below: which shows the relative value of the banks.

Table 4.3

Total Debt and Total Equity of HBL

(Amount in Million)

Fiscal Year	Total Debt	Total Equity	Value of the Firm	% Change
2006/07	504.625	1766.176	2270.80	-
2007/08	595.968	2146.500	2742.47	20.77
2008/09	43.178	2512.992	2556.17	6.79
2009/10	500	3119.88	3619	41.58
2010/11	500	3439.205	3939.205	8.85
Average				19.50

Sources: Annual Report and Website of Concerned Bank (see in annex 2)

4.2.3.2 Value of the Firm of SBL

Table 4.4

Total Debt and Total Equity of SBL

(Amount in Million)

Fiscal Year	Total Debt	Total Equity	Value of the Firm	% Change
2006/07	4089	458	4547	-
2007/08	7066	668	7734	70.10

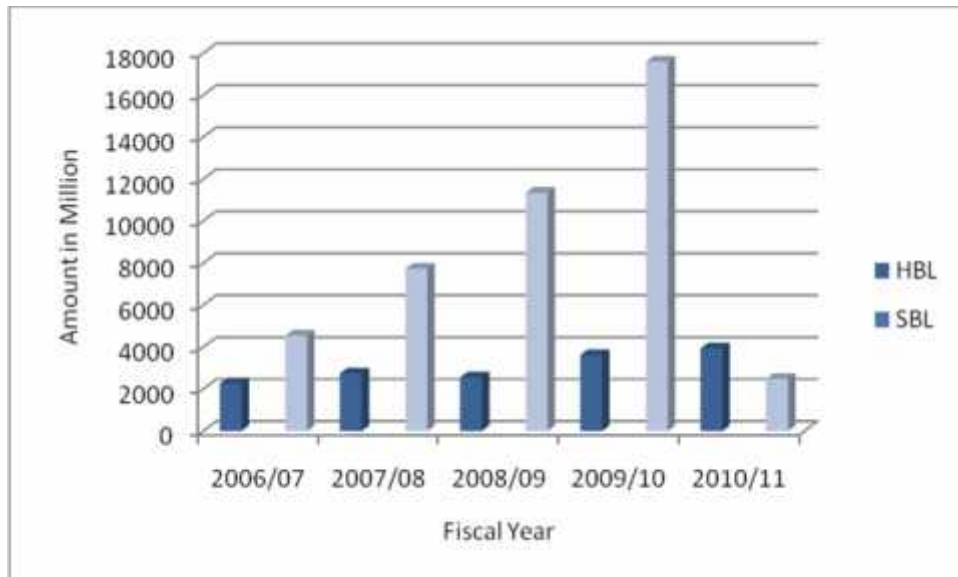
2008/09	10458	889	11347	46.72
2009/10	16385	1211	17596	55.07
2010/11	9946.17	1496.753	2491.31	85.84
Average				64.43

Sources: Annual Report and Website of Concerned Bank (See in annex 3)

The above table shows the value of the HBL of 2006/07 to 2010/11 is 2270.80, 2742.42, 2556.17, 3619 and 3939.205. The data shows the average rate is 19.50 and the value of the SBL of 2006/07 to 2010/11 is 4547, 7734, 11347, 17596 and 2491.31 the data shows the average rate is 64.43.

Figure 4.3

Value of the Firm of HBL and SBL



Now, we can calculate capital structure of the overall capitalization of the Banks by considering both NI and NOI approach.

-) Net Income Approach (NI)
-) Net Operating Income approach

4.2.4 Net Income Approach (NI)

The overall capitalization rate is calculated under the Net Income Approach which measures the degree of leverage of the firm. This approach assumes that the cost of debt is less than the cost of equity. So the degree of Financial Leverage is increased the weighted average cost of capital will

decline, as a result value of the firm will increase. The higher use of cheaper debt lower the cost and consequently increases the value.

$$K_o = \frac{\text{EBIT}}{\text{Value of the Firm}}$$

4.2.4.1 Overall Capitalization Rate of HBL

Table 4.5
Overall Capitalization Rate of HBL

(Amount in Million)

Fiscal Year	EBIT	Value of the Firm	%
2006/07	672.399	2270.80	0.2961
2007/08	717.404	2742.47	0.2615
2008/09	948.839	2556.17	0.3712
2009/10	1066.606	3619	0.2947
2010/11	755.727	3939.205	0.1918
Average			0.28306
S.D			1096.667
correlation			0.3474

Sources: Annual Report and Website of Concerned Bank

4.2.4.2 Overall Capitalization Rate

Table 4.6
Overall Capitalization Rate of SBL

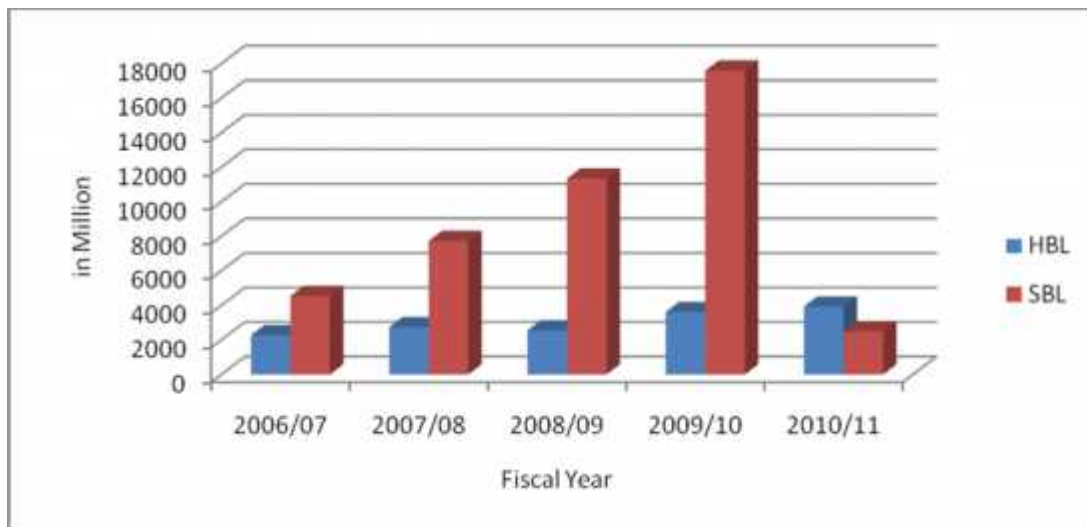
(Amount in Million)

Fiscal Year	EBIT	Value of the Firm	%
2006/07	154	4547	0.0339
2007/08	272	7734	0.0352
2008/09	405	11347	0.0357
2009/10	566	17596	0.0322
2010/11	734	2491.37	0.2946
Average			0.08632
S.D			5925.49
Correlation			0.10088

Sources: Annual Report and Website of Concerned Bank

Over viewing the above calculated overall capitalization rate, Himalayan bank Limited has highest rate on average i.e 0.28306 and SBL has lowest rate an average than HBL i.e 0.08632. The standard deviation of HBL of overall capitalization under EBIT and Value of the firm is 1096.667 and correlation is 0.3474. On average overall capitalization rate of HBL is higher than SBL. The standard deviation of HBL of overall capitalization under EBIT and value of the firm is 5925.49 and correlation is 0.10088.

Figure 4.4
Overall Capitalization Rate of HBL and SBL



From the above, it is found that increase in financial leverage there is decrease in over all capitalization rates. This shows that cost of debt is lower than cost of equity.

4.2.5 Net Operating Income Approach

The net operating income approach focus on the equity capitalization rate and appears as irrelevancy theory of capital structure as already mentioned .According to this approach overall capitalization rate k_o as well as debt capitalization rate k_e are independent. However the equity capitalization rate. k_e increases linearly with the financial leverage. Equity capitalization rate is obtained simply dividing the earning before tax by market value of the equity. Thus, under Net Operating Income approach the equity capitalization as follows:

$$K_e = \frac{\text{Earning Before Tax}}{\text{Market Value of education}}$$

4.2.5.1 Equity Capitalization Rate (ke) Under NOI Approach

Table 4.7

Equity Capitalization Rate (ke) Under NOI Approach of HBL

(Amount in Million)

Fiscal Year	EBT	Value of the Equity	%
2006/07	672.399	1100	0.6113
2007/08	717.404	1740	0.4123
2008/09	948.34	1980	0.4789
2009/10	1066.61	1760	0.6060
2010/11	755.727	816	0.9261
Average			0.6069

Sources: Annual Report and Website of Concerned Bank

4.2.5.2 Equity Capitalization Rate (ke) Under NOI Approach

Table 4.8

Overall Capitalization Rate of SBL

(Amount in Million)

Fiscal Year	EBT	Value of Equity	%
2006/07	87	1000	0.087
2007/08	92	1800	0.0511
2008/09	139	4668	0.0298
2009/10	217	9025	0.0240
2010/11	384.392	3439	0.11
Average			0.06038

Sources: Annual Report and Website of Concerned Bank

Over viewing the above computed equity capitalization rate, (ke) equity of Banks was fluctuating in nature. The equity capitalization rates of HBL have 0.6069 on average and SBL has 0.06038 on average.

4.2.6 Return on Total Deposit of HBL

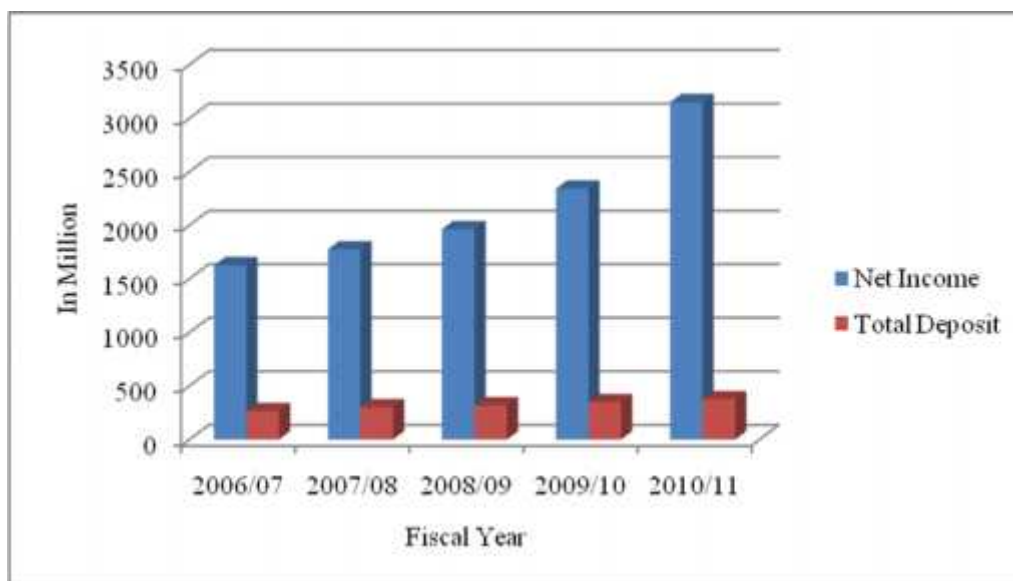
Table 4.9
Return on Total Deposit

(In Million)

Fiscal Year	Net Income	Total Deposit	Ratio	%change
2006/07	1626.474	264.91	6.14	-
2007/08	1775.583	300.48	5.90	3.9
2008/09	1963.647	318.43	6.17	4.58
2009/10	2342.198	346.81	6.75	9.40
2010/11	3148.605	376.11	8.37	24
Average	2171.3014	321.348	6.67	10.47
Standard Deviation				1056.41

Sources: Annual Report of HBL

Figure 4.5
Return on Total Deposit



From the above table we can see the increasing or decreasing trend. The return on total deposit ratio of 2006/07 to 2010/11 are 6.14, 5.90, 6.17, 6.75 and 8.37 respectively. The average return on total deposit ratio is 6.67% and the standard deviation is 1056.41.

4.2.7 Return on Total Deposit of SBL

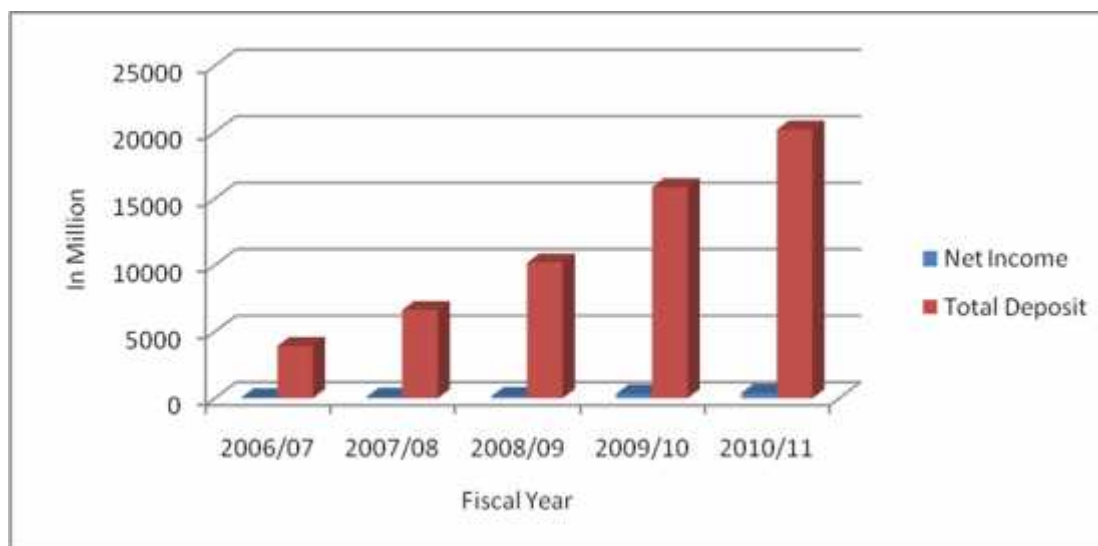
Table 4.10
Return on Total Deposit of SBL

(In Million)

Fiscal Year	Net Income	Total Deposit	Ratio	%change
2006/07	65	3918	1.66	-
2007/08	95	6625	1.43	13.86
2008/09	143	10191	1.40	2.09
2009/10	336	15855	2.12	51.43
2010/11	384	20196	1.89	10.84
Average	204.6	11357	1.7	19.56
Standard Deviation				7367.156

Sources: Annual Report of SBL

Figure 4.6
Return on Total Deposit of SBL



From the above table we can see the same level of ratio only small number is different. The return on total deposit ratio of 2006/07 to 2010/11 are 1.66, 1.43, 1.40, 2.12 and 1.89

respectively. In 2007/09 there is increasing trend the average return on total deposit ratio is 1.70% and the standard deviation is 7367.156.

4.2.8 Debt to Equity Ratio Analysis

Debt-equity ratio shows the relationship between the banks debt and equity financing. The total debt includes current accounts, saving accounts, calls and short deposit accounts, overdraft fixed deposit, loan and advances and borrowings from other banks. Shareholders equity net worth includes paid up capital, reserve and surplus.

$$\text{Debt to Equity Ratio} = \frac{\text{Long - Term Debt}}{\text{Shareholders Equity}}$$

4.2.8.1 Debt Equity Ratio of HBL and SBL

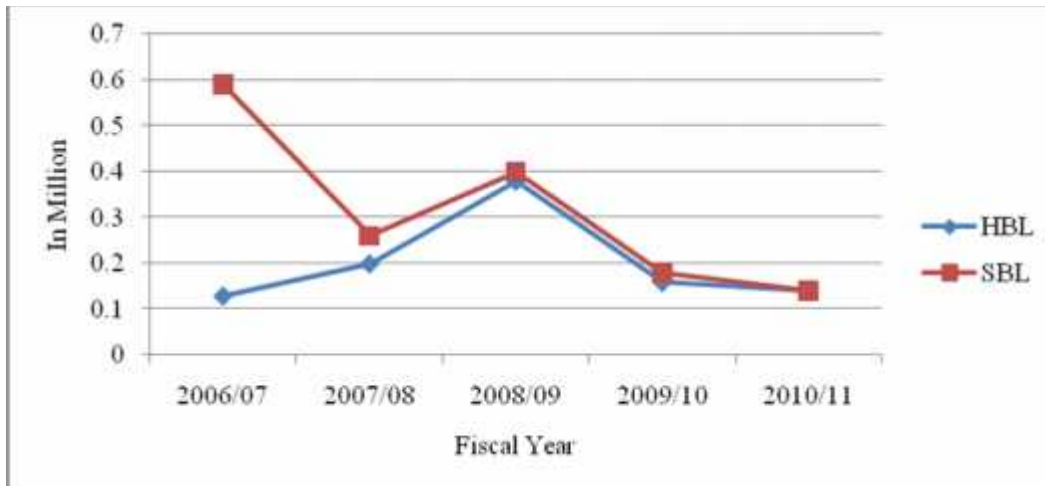
Table 4.11
Debt Equity Ratio

(Amount in million)

Fiscal Year	HBL	%change	SBL	%change
2006/07	0.13	-	0.59	-
2007/08	0.20	53.38	0.26	55.93
2008/09	0.38	90	0.4	53.85
2009/10	0.16	57.89	0.18	55
2010/11	0.14	0.125	0.14	22.22
Average	0.20	50.35	0.314	46.75
Standard Deviation	0.103053		0.183521	

Sources: Annual Report of HBL and SBL (See in annex 2)

Figure 4.7
Debt Equity Ratio



The debt equity ratio and average ratios has been calculated in the above table. Five years data have been presented here. The table shows that D/E ratio of HBL is 0.13, 0.20, 0.38, 0.16 and 0.14 in fiscal years 2006/07 to 2010/11 and SBL is 0.59, 0.26, 0.40, 0.18 and 0.14 in fiscal years 2006/07 to 2010/11 respectively.

4.2.9 Total Debt to Total Assets Ratio

Debt ratio measures the relationship between total debt and total assets. Debt to total asset ratio measure the proportion of total assets financed by the debt. The ratio is calculated as follows:

$$\text{Debt to total Assets Ratio} = \frac{\text{Total Debt}}{\text{Total Assets}}$$

4.2.9.1 Total Debt to Total Assets Ratio of HBL and SBL

Table 4.12

Total Debt to Total Assets Ratio of HBL and SBL

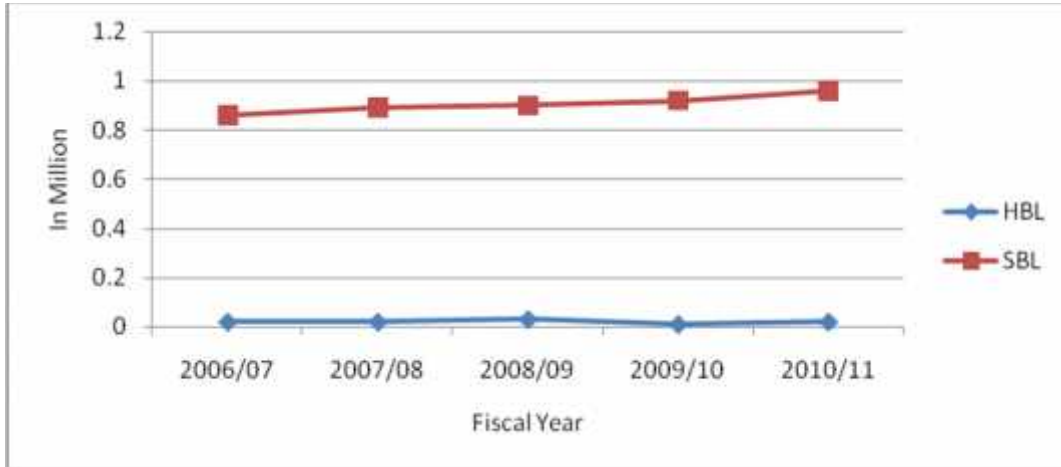
(In Million)

Fiscal Year	HBL	%change	SBL	%change
2006/07	0.02	-	0.86	-
2007/08	0.02	0	0.89	3.49
2008/09	0.03	50	0.9	1.12
2009/10	0.01	66.67	0.92	2.22
2010/11	0.02	100	0.96	4.35
Average	0.02	72.22	0.90	2.79
Standard Deviation	0.007071		0.037148	

Sources: Annual Report of HBL and SBL(See in Annex 3)

Figure 4.8

Total Debt to Total Assets Ratio of HBL and SBL



The total debt to total assets ratio of HBL of 2006/07 to 2010/11 is 0.02,0.02,0.03,0.01 and the average is 0.02. The standard deviation is 0.007071. The SBL is 0.86, 0.89, 0.9, 0.92 and 0.96. The average ratios of SBL is 0.90 and the standard deviation is 0.037148. The total debt to total assets ratio of HBL is lowest than SBL. This ratios shows the lower the ratio, the greater the protection afforded creditors in the event of liquidation. The above figure shows HBL has decreasing ratios and SBL has increasing ratio. The highest ratio is not preferable for a company. So, HBL is preferable than SBL.

4.2.10 Interest Coverage Ratio

It is determined by dividing the operating profit or Earning before Interest and Taxes (EBIT) by the fixed interest (I) change on loan. Thus, in the calculation of Interest Coverage Ratio is expressed as:

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

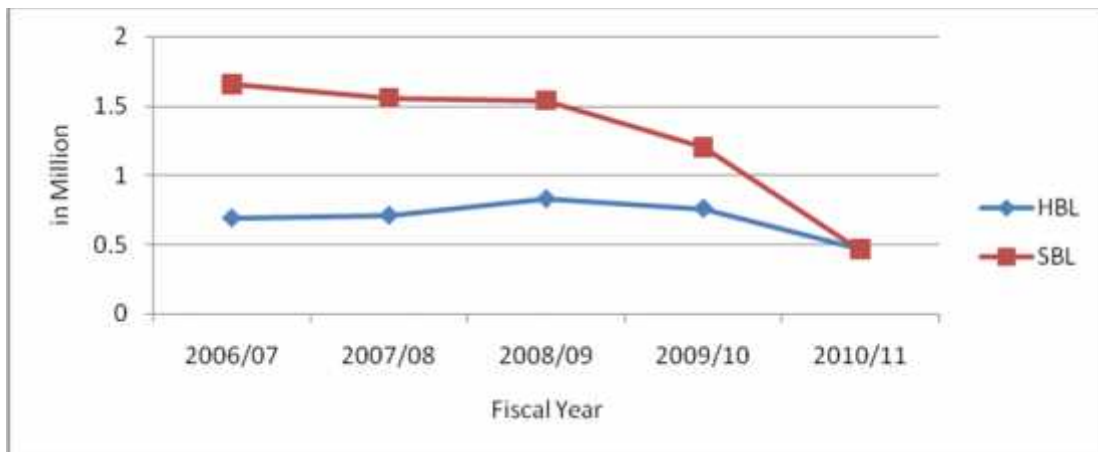
4.2.10.1 Interest Coverage Ratio of HBL and SBL

Table 4.13
Interest Coverage Ratio

(In Million)				
Fiscal Year	HBL	%change	SBL	%change
2006/07	0.69	-	1.66	-
2007/08	0.71	2.89	1.56	6.02
2008/09	0.83	16.90	1.54	1.28
2009/10	0.76	8.43	1.20	22.08
2010/11	0.47	38.16	0.46	61.67
Average	0.692	16.59	1.284	22.76
Standard Deviation	0.135351		0.492219	

Sources: Annual Report of HBL and SBL(See in Annex 4)

Figure 4.9
Interest Coverage Ratio



In Table 4.7 the interest coverage ratio of HBL of 2006/07 to 2010/11 is 0.69, 0.71, 0.83, 0.76 and 0.47 and the average ratio is 0.692 and 0.47 and the average ratio is 0.692 and standard deviation is 0.1354 respectively. the interest coverage ratio of SBL is 1.66, 1.56, 1.54, 1.20 and 0.46. The average ratio is 1.284 and standard deviation is 0.4922. So in the above table SBL has highest interest coverage ratios. Highest ratio shows that a firm, can pay the interest easily. So, the increasing ratio is preferable, which shows that the company can pay the fixed charges. So, the interest coverage ratio of SBL is preferable because of highest ratio.

4.2.11 Return on Shareholders Equity

To measure the return of shareholders, can use return on shareholders' equity. This ratio analyze if the company has been able to provide higher return on investment to the owners or not. "Higher the ratio, higher will be the investment, which the shareholders will undertake". It is calculated as:

$$\text{ROSE} = \frac{\text{Net Income}}{\text{Shareholders Equity}}$$

4.2.11.1 Return on Shareholders Equity of HBL and SBL

Table 4.14

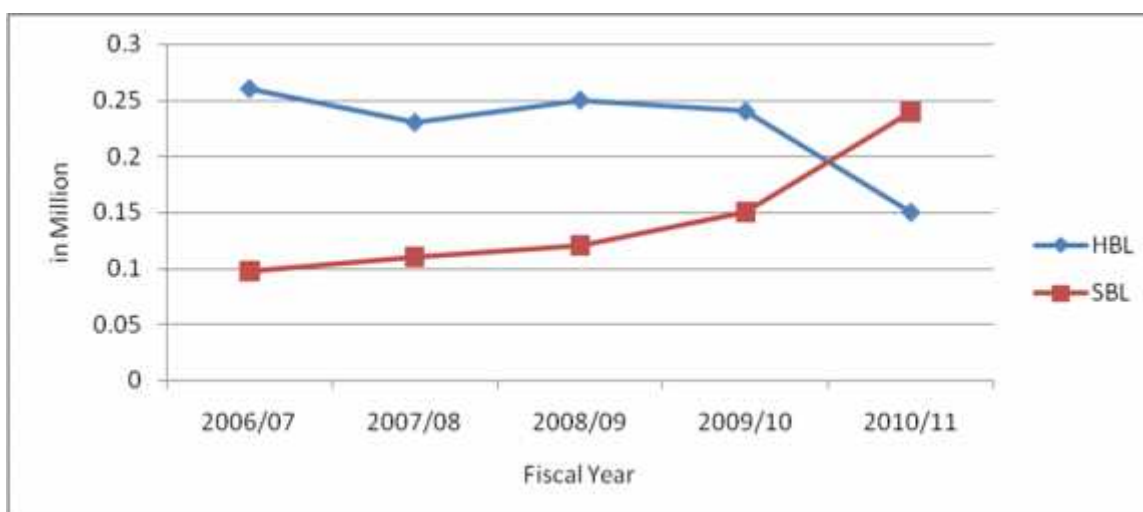
Return on Shareholders Equity

Fiscal Year	HBL	%change	SBL	%change
2006/07	0.26	-	0.097	-
2007/08	0.23	11.54	0.11	13.40
2008/09	0.25	8.69	0.12	9.09
2009/10	0.24	4	0.15	25
2010/11	0.15	37.5	0.24	60
Average	0.266	15.43	0.14	26.87
Standard Deviation	0.042552		0.05183	

Sources: Annual Report of HBL and SBL(See in Annex 5)

Figure 4.10

Return on Shareholders Equity



The return on shareholders equity of HBL is higher than SBL. The average ratio of HBL is 0.266 its percentage change is %15.43 and the standard deviation is 0.042552. The average ratio of SBL is 0.14 and the percentage change is SBL is 15.43 and the standard deviation. This ratio measures the productivity of the assets. Higher ratio shows the higher return on the assets used in the business there by indicating effective use of the resources available and vice versa.

4.2.12 Return on Total Assets

This ratio measures the productivity of the assets. Higher ratio shows the higher return on the assets used in the business there by indicating effective use of the resources available and vice versa. The formula of ROA is given below:

$$\text{ROA} = \frac{\text{Net Income}}{\text{Total Assets}}$$

4.2.12.1 Return on Total Assets of HBL and SBL

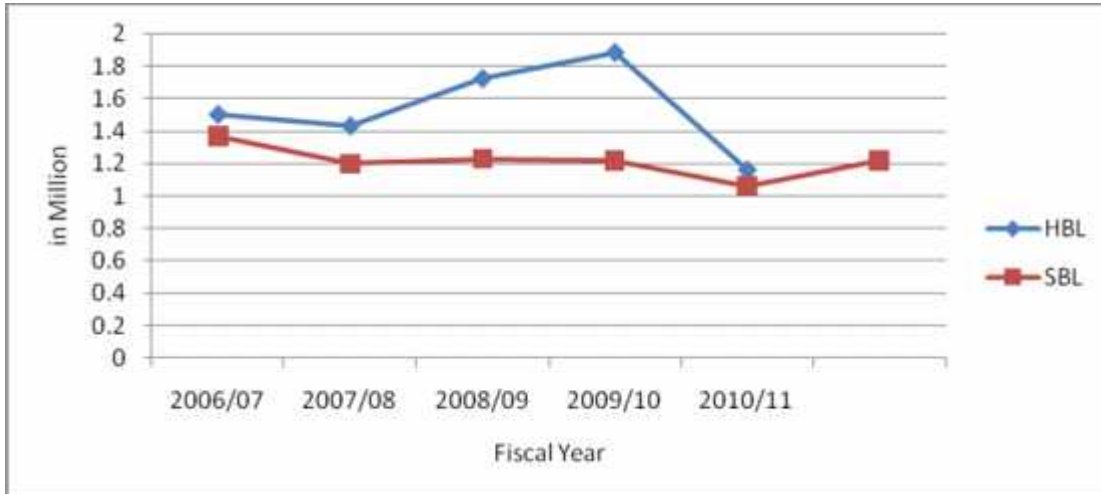
Table 4.15
Return on Total Assets

(In Million)

Fiscal Year	HBL	%change	SBL	%change
2006/07	1.50	-	1.37	-
2007/08	1.43	4.67	1.20	12.4
2008/09	1.72	20.28	1.23	2.5
2009/10	1.88	9.30	1.22	8.13
2010/11	1.16	38.29	1.06	13.11
Average	1.54	14.51	1.22	9.035
Standard Deviation	0.276622		0.110136	

Sources: Annual Report of HBL and SBL (See in Annex 6)

Figure 4.11
Return on Total Assets



In table 4.9 shows return on total assets of HBL is highest than the return on total assets of SBL. The ROA of HBL is 1.50, 1.43, 1.72, 1.88 and 1.16. The ROA trend of HBL is increasing trend. The ROA of SBL is 1.37, 1.20, 1.23, 1.22 and 1.06. The percentage change of ROA is 1.22 and the standard deviation is 0.110136. Here HBL is favourable because higher ratio shows the higher return on the assets used in the business.

4.2.13 Earning Per Share Analysis

Earning per share shows the profitability of the firm per share basis, it does not reflect how much is paid as dividend and how much is retained in the business. EPS is the earning received by a share from the profit of the year. Generally if banks disclosed, profit is increased EPS also increases But this perception is wrong because interest on bond, tax and other expenses are deducted before distribution of profit to shareholders. In this section the EPS trend of selection of banks and find out EPS increases with increase in EBIT or not.

$$\text{EPS} = \frac{\text{Net Income}}{\text{Number of Share}}$$

4.2.13.1 Earning Per Share Analysis of HBL and SBL

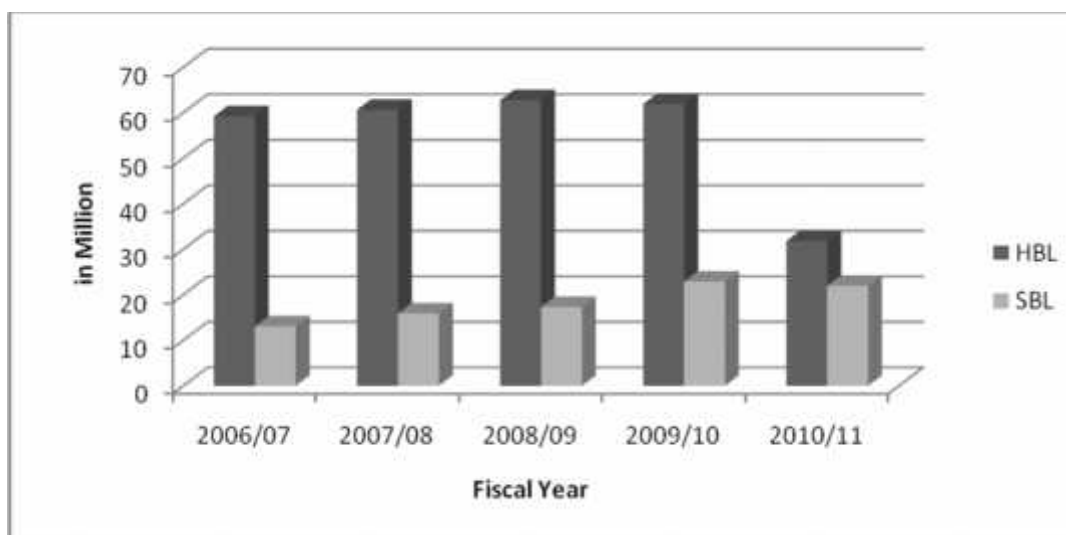
Table 4.16
Earning Per Share

(In Million)

Fiscal Year	HBL	%change	SBL	%change
2006/07	59.24	-	13.05	-
2007/08	60.66	2.39	15.88	21.69
2008/09	62.74	3.43	17.29	8.89
2009/10	61.90	1.34	22.89	32.39
2010/11	31.80	48.63	21.99	3.93
Average	55.268	11.16	18.22	13.38
Standard Deviation	11.794		3.72	

Sources: Annual Report of HBL and SBL(See in Annex 7)

Figure 4.12
Earning Per Share



The above table is drawn with the help of EPS of sample banks of Nepal 's EPS given in each year. The given data in table also along with graph for convenience understanding. The EPS of HBL is comparatively higher than other's which dominated the trend line lying the above SBL bank's trend line. The EPS trend of HBL is increasing trend. The EPS of HBL is 59.24, 60.66,

62.74, 61.90 and 31.80 in the fiscal year 2006/07 to 2010/11. The average EPS is 55.268. The standard deviation of HBL is 11.794.

The thinnest trend line represent SBL. The EPS of SBL is 13.05, 15.88, 17.29, 22.89 and 21.99 in the fiscal year 2006/07 to 2010/11. The average EPS is 18.22. The average change rate is 18.22. Whereas it found SBL's EPS is in fluctuating trend.

4.3 Statistical Analysis

4.3.1 Calculation of Standard Deviation, Coefficient of Correlation and Regression Analysis and PE Ratio of HBL (2005/6 to 2010/11)

The correlation is one of the most common and most useful statistics. A correlation is a single number that describes the degree of relationship between two variables. Correlation is a statistical technique that can show whether and how strongly pairs of variables are related.

The main result of a correlation is called the correlation coefficient (or "r"). It ranges from -1.0 to +1.0. The closer r is to +1 or -1, the more closely the two variables are related. If r is close to 0, it means there is no relationship between the variables. If r is positive, it means that as one variable gets larger the other gets larger. If r is negative it means that as one gets larger, the other gets smaller (often called an "inverse" correlation).

The formula for the calculation of simple correlation coefficients by the actual mean method can be expressed as follows:

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

Interpretations of r:

When, $r = +1$ → there is perfect positive relationship.

When, r is close to 1 → there is strong positive relationship.

When, r is close to 0 but positive → there is low degree of positive relationship.

When, r is equal to 0 → there is no relationship.

When, r is close to zero but negative → there is low degree of negative relationship.

When, r is close to -1 → there is strong negative relationship.

When, $r=-1$, \longrightarrow there is perfect negative relationship.

The probable error is used to measure the reliability and test of significance of correlation coefficient. It is calculated by the following formula.

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

Where,

R= the value of correlation coefficient

N= number of pairs of observations

P.E. is used in interpretation whether the calculated value of r is significant or not,

- i. If $r < P.E.$, it is significant, i.e. there is no evidence of correlation.
- ii. If $r > 6P.E.$, it is significant.
- iii. If $P.E. < r < 6PE$ nothing can be concluded.
- iv. By adding and subtracting the value of probable error from the coefficient of correlation we get the upper and lower limits respectively within which correlation coefficient in the population can be expected to lie. Symbolically, Correlation in the population = $r \pm P.E.$ The following table shows the calculation of Standard Deviation, Coefficient of correlation and regression Analysis and PE ratio of HBL and SBL.

	Return on Total Deposit	Total Debt to Equity Ratio	Total Debt to Total Assets	TIE	ROSE	ROA	EPS
S.D.	1056.41	0.103053	0.007071	0.135351	0.042552	0.276622	11.794
Correlation	0.9391	-0.1605	0.74047	0.383137	0.9347	0.422163	0.934693
Regression	13.3971	-0.0476	-7.6177	0.60899	207741	17.5935	1.05398
P.E	0.035	0.2939	0.2339	0.2572	0.038	0.2479	0.03381
6PE	0.21	1.7634	1.4034	1.5432	0.228	1.4874	0.20286

Source: Annex 1 to 15

Since $r > 6PE$, we conclude that r is significant.

4.3.2 Calculation of Standard Deviation, Coefficient of Correlation and Regression Analysis and PE Ratio of SBL (2006/07 to 2010/11)

	Return on Total Deposit	Total Debt to Equity Ratio	Total Debt to Total Assets	TIE	ROSE	ROA	EPS
S.D.	7367.156	0.1835	0.0371	0.4922	0.05183	0.110136	3.73
Correlation	0.9814	0.7004	-0.1678	0.239086	0.9642	0.966594	0.977212
Regression	44.907	0.00276	1.1182	0.3571	2.7868	55.662	4.614403
P.E	0.0113	0.1537	0.2932	0.2844	0.02121	0.0198	0.0136
6PE	0.0678	0.9222	1.7592	1.7064	0.12726	0.1188	0.0816

Source: Annex 1 to 15

Since $r > 6PE$, we conclude that r is significant which are shown below.

From the above analysis, it is clear that the correlation between net income and total deposit of HBL is 0.9391 and SBL is 0.981302 which shows a positive relationship. Therefore it is depicted that the value of 'r' in both banks is positive and there is significant relation between net income and total deposit. It depicts that both banks are significantly able to service their debt. Coefficient of correlation of debt to equity ratio between long term debt and shareholders equity of HBL is -0.1605 and SBL is 0.7004 which indicate that HBL is negative and SBL is positive relationship. The PE of both banks is 0.2939 and 0.1537 which shows that the relationship between long term debt and shareholders equity of HBL and SBL is insignificant because 'r' is not greater than 6 times PE ratio. Again, the coefficient of correlation between EBIT and Interest of HBL is 0.60899 and SBL is 0.239086 which indicate that HBL is positive and SBL is also positive relationship. The PE of both banks is =0.2572 and 0.2844 which shows that the relationship between EBIT and Interest of HBL and SBL is insignificant because 'r' is not greater than 6 times PE ratio. From the above analysis Return on shareholders equity and earning per share is significant because 'r' is greater than 6 times PE ratio. At last return on assets of both bank are insignificant because 'r' is not greater than 6 times PE ratio

4.4 Test of Hypothesis

The test hypothesis of this research has supposed that the commercial banks operating under the same environment and of the same class as well as are of number of significant difference regarding capital structure and profitability. So the hypothesis testing i.e is T-test is performed as below for Himalayan bank limited and Siddhartha bank limited taking as sample units.

4.4.1 Student's t-test Regarding Capital Structure

Here we can calculate the test hypothesis on total debt to total equity ratio. Let X_1 and X_2 be denoted as total debt to total equity ratio of Himalayan bank limited and Siddhartha Bank limited respectively.

Null Hypothesis (H_0): $\mu X_1 = \mu X_2$ i.e is there is no significant difference between the mean ratios of total debt to total equity ratio of HBL and SBL.

Alternative Hypothesis(H_1) : $\mu X_1 \neq \mu X_2$ i.e there is significance difference between the mean ratios of total debt to total equity of HBL and SBL.

Under H_0 test statistics is;

$$\begin{aligned}
 t &= \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{s^2 \left(\frac{1}{n_1} + \frac{1}{n_2} \right)}} \\
 &= \frac{0.202 - 0.314}{\sqrt{0.2788 \left(\frac{1}{5} + \frac{1}{5} \right)}} \\
 &= (-0.112) / \sqrt{(0.2788 * 2/5)} \\
 &= \frac{-0.112}{0.3339} \\
 &= -0.3354
 \end{aligned}$$

Therefore, $|t| = 0.3354$

$$\begin{aligned} \text{Degree of freedom} &= (n_1 + n_2 - 2) = (5 + 5 - 2) \\ &= 8 \end{aligned}$$

Level of significance = 5% i.e. 0.05

Critical value

$T_{0.05}$ for two tailed test at 5df = 2.015

Decision:

Since, calculated value of t at 5% level of significance is less than tabulated value, So H_0 is accepted. Hence we conclude that there is significance difference of debt to equity ratio between Siddhartha and Himalayan bank Limited.

4.5 Major Findings

Major Findings of this study are presented here under:

) In the capital structure position the authorized capital of SBL of 2006/07 to 2010/11 is 1000, 1000, 1000, 3000 and 3000 respectively. The issued capital is 500, 800, 828, 1428.3 and 1571.13 respectively. The paid of capital is 500, 600, 828, 952.2 and 1095.03 respectively. The authorized capital is the highest among the others. The authorized capital of HBL of 2006/07 to 2010/11 is 1000, 1000, 1000, 2000 and 3000 respectively. The issued capital is 7722.20.81, 1013.513, 1216.215 and 1600. The paid of capital is 7722.20.81, 1013.513, 1216.215, and 1600 respectively. The figure shows authorized capital is the highest among the others. The issued capital and paid capital are in same ratio. The return on total deposit of HBL is the increasing or decreasing trend. The return on total deposit ratio of 2006/07 to 2010/11 are 6.14, 5.90, 6.17, 6.75 and 8.37 respectively. The average return on total deposit ratio is 6.67% and the standard deviation is 1056.41.

) The return on total assets of SBL is the same level of ratio only small number is different. The return on total deposit ratio of 2006/07 to 2010/11 are 1.66, 1.43, 1.40, 2.12 and 1.89 respectively. In 2007/09 there is increasing trend. The average return on total deposit ratio is 1.70% and the standard deviation is 7367.156.

) Debt-equity ratio shows the relationship between the banks debt and equity financing. The total debt includes current accounts, saving accounts, calls and short

deposit accounts, overdraft fixed deposit, loan and advances and borrowings from other banks. Shareholders equity net worth includes paid up capital, reserve and surplus.

) The total debt to total assets ratio of HBL is 0.02, 0.02, 0.03, 0.01, and the average is 0.02. The standard deviation is 0.007071. The SBL is 0.86, 0.89, 0.9, 0.92 and 0.96. The average ratio of SBL 0.90 and the standard deviation is 0.037148. The total debt to total assets ratio of HBL is Lowest than SBL. This ratio shows the lower the ratio, the greater the protection afforded creditors in the event of liquidation. So the HBL has decreasing ratio and SBL has increasing ratio. So the highest ratio is not preferable for a company. So HBL is preferable than SBL.

) The interest coverage ratio of HBL is 0.69, 0.71, 0.83, 0.76, and 0.47. The average ratio is 0.692 and standard deviation is 0.1354. The interest coverage ratio ratio of SBL is 1.66, 1.56, 1.54, 1.20 and 0.46. The average ratio is 1.284 and standard deviation is 0.

) 4922. So SBL has the highest interest rate coverage ratio. Highest ratio shows that a firm can pay the interest easily. So the increasing ratio is preferable, which shows that the company can pay the fixed charges. So the interest coverage ratio SBL is preferable because of highest ratio.

) The return on shareholders equity of HBL is higher than SBL. The average ratio of HBL is 0.266 its percentage change is %15.43 and the standard deviation is 0.042552. The average ratio of SBL is 0.14 and the percentage change is SBL is 15.43 and the standard deviation. This ratio measures the productivity of the assets. Higher ratio shows the higher return on the assets used in the business there by indicating effective use of the resources available and vice versa.

) The return on total assets of HBL is higher than the return on total assets of SBL. The ROA of HBL is 1.50, 1.43, 1.72, 1.88 and 1.16. The ROA trend of HBL is increasing trend. The ROA of SBL is 1.37, 1.20, 1.23, 1.22 and 1.06. The percentage change of ROA is 1.22 and the standard deviation is 0.110136. Here HBL is favourable because higher ratio shows the higher return on the assets used in the business.

) Earning per share shows the profitability of the firm per share basis, it does not reflect how much is paid as dividend and how much is retained in the business. EPS is the earning received by a share from the profit of the year. Generally if banks

disclosed, profit is increased EPS also increases But this perception is wrong because interest on bond, tax and other expenses are deducted before distribution of profit to shareholders. In this section the EPS trend of selection of banks and find out EPS increases with increase in EBIT or not.

) The given data in table also along with graph for convenience understanding. The EPS of HBL is comparatively higher than other's which dominated the trend line lying the above SBL bank's trend line. The EPS trend of HBL is increasing trend. The EPS of HBL is 1.50, 1.43, 1.72, 1.88 and 1.16 in the fiscal year 2006/07 to 2010/11. The average EPS is 55.268.

) The thinnest trend line represent SBL. The EPS of SBL is 13.05,15.88,17.29,22.89 and 21.99 in the fiscal year 2006/07 to 2010/11. The average EPS is 18.22. The average change rate is 18.22. Whereas it found SBL's EPS is in fluctuating trend.

) The standard deviation value measures the absolute value of risk i.e. is variability of the returns. The correlation is measure by using the actual mean method. In the fiscal year 2006/07 to 2010/11 the standard deviation of HBL of returns on total deposit is 1056.41. The correlation is 0.9391 and regression is 13.3971 and P.E is 0.035 which is calculated by the Net Income and Total Deposit of the HBL by looking by the annual report.

) It is clear that the correlation between net income and total deposit of HBL is 0.9391 and SBL is 0.981302 which shows a positive relationship. Therefore it is depicted that the value of 'r' in both banks is positive and there is significant relation between net income and total deposit. It depicts that both banks are significantly able to service their debt. Coefficient of correlation of debt to equity ratio between long term debt and shareholders equity of HBL is -0.1605 and SBL is 0.7004 which indicate that HBL is negative and SBL is positive relationship. The PE of both banks is 0.2939 and 0.1537 which shows that the relationship between long term debt and shareholders equity of HBL and SBL is insignificant because 'r' is not greater than 6 times PE ratio. Again, the coefficient of correlation between EBIT and Interest of HBL is 0.60899 and SBL is 0.239086 which indicate that HBL is positive and SBL is also positive relationship .The PE of both banks is =0.2572 and 0.2844 which shows that the relationship between EBIT and Interest of HBL and SBL is insignificant

because 'r' is not greater than 6 times PE ratio. From the above analysis Return on shareholders equity and earning per share is significant because 'r' is greater than 6 times PE ratio. At last return on assets of both bank are insignificant because 'r' is not greater than 6 times PE ratio.

) Over viewing the above calculated overall capitalization rate, Himalayan bank Limited has highest rate on average i.e 0.28306 and SBL has lowest rate an average than HBL i.e 0.08632. The standard deviation of HBL of overall capitalization under EBIT and Value of the firm is 1096.667 and correlation is 0.3474. On average overall capitalization rate of HBL is higher than SBL. The standard deviation of HBL of overall capitalization under EBIT and value of the firm is 5925.49 and correlation is 0.10088.

CHAPTER - V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

The final chapter of the thesis is summary, conclusion and recommendation. This chapter is divided into three sections: Summary, Conclusions and Recommendations. In this chapter, the summary section contains the summarized form of the whole thesis, the conclusion of the study based on the findings from the study and some useful recommendations to improve the banking performance and manage capital structure management of the Siddhartha Bank Limited and Himalayan bank Limited of Nepal in a more effective way.

5.1 Summary

Capital is the most basic terms, in money. All businesses must have capital in order to purchase assets and maintain their operations. Capital is a scarce sources and much more essential to maintain smooth operation of any firm. The available capital and financial sources should be utilized so efficiently that could generate maximum return. Capital structure or capitalization of the firm is the permanent financing represented by long term debt, preferred stock an shareholders' equity. The thesis tried to explore present capital structure, capital structure position, factors affecting CSM and relation of dependency of profit on loan and deposit of Siddhartha Bank Limited and Himalayan Bank Limited of Nepal with the following major objectives:

To find out the present capital structure management of HBL and SBL commercial banks of Nepal are optimal or not. To determine the relationship between the capital and profit. To Analyze and evaluate the effect of deposit and loan on the EBIT of the HBL and SBL commercial banks of Nepal. Before the study and during the study, the researcher has been through several books, journals, websites, articles, dissertations related to the thesis problem in order to have detailed knowledge on research topic, solve all stastical problem and all figure from excel and the findings of previous researches.

Researcher has been through review of the four capital structure related theories:

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

Similarly, the review on leverage, signaling theory, trade off theory related to capital structure is also done in the section literature review part of the study. National and international journals and articles published are also reviewed in the same section. Finally the most useful review of past thesis and dissertations completed by the students of Tribhuvan University in different academic years in partial fulfillment of MBS degree related to capital structure are studied and reviewed. The one of the most guideline of the thesis research design is prepared in the 3rd section of thesis. The thesis used analytical plus descriptive research design using financial tools ratio analysis, statistical tools and students t-test. The research is based on completely secondary data available in the websites of sample banks and solve from the excel program. It has been selected two sample of commercial Bank: HBL and SBL where HBL is a joint venture Bank of Nepal. The real talent of the researcher is described through the fourth chapter of the thesis which is called data presentation and analysis. This unit comprised of the systematic presentation of data related to the study and analysis to draw the conclusion related to the objectives of the study. Researcher has given his best effort to present the necessary and related data only as far as attractive and convincing way that helps to easy grasp the concerned material by the others. Simple tables and attractive diagrams of various types suitable to the study are used on this section. The analysis is made using appropriate analysis technique with details in annex is done. The calculation which are not shown in annex are calculated from the Microsoft Excel. The reference of every analysis is given in descriptive form in annex which definitely help who will go through this thesis to get step by step knowledge on the analysis made by researcher. The main objectives of this study presented are to evaluate the role of capital structure in the growth of commercial banks in Nepal.

Finally the findings of the study are summarized at the end of this section as well as the major findings which are related to the thesis objective is presented. Last but not the least, the final chapter of the study presented the overall summary of the thesis in a brief. The next of this

section are the conclusions drawn by the researcher from the study. The researcher has made little effort to provide some useful recommendations based on his study so that the commercial Bank Limited of Nepal can increase their efficiency and effectiveness.

5.2 Conclusion

Finally the outcome of the thesis conclusion is presented as below based on the study made by researcher and results obtained in the data presentation and analysis part of the thesis. Based on the findings, major findings and the researcher's analysis there is the conclusions of the study. Keeping this situation in mind researcher has tried to find the relationship between the capital and profit condition of the HBL and SBL of Nepal. The Net Operating Income schedule presented in the annual report concludes that the profit HBL and EBL are increased every year to its former year and shows that the profit trend of the commercial bank towards increasing trend. Most of the banks cannot manage the current assets. Because of the inefficient current management company cannot fulfill the organization objective i.e. to earn maximum profit and maximizing the shareholder equity.

As the name also suggests commercial banks focuses their functions on profit earning. None commercial banks of Nepal are operated to serve public occurring loss. Even though NRB has given directions for combined effort on economic development, banks have not shown keen interest on that matter. Keeping this situation in mind researcher has tried to find the relationship between the capital and profit condition of the commercial banks of Nepal. It is supported by the average ROSE calculated for HBL is 26.6%, and SBL is 14% average ROSE. Every year they have been paying good return on the shareholders' investment so their capital profit ratio is positive. The 2nd conclusion of the study is that there is positive and significant difference between the return on total deposit, return on shareholders equity and earning per share. The HBL is more profitable than SBL. The changes on the capital structure of the banks fluctuates the net income of the banks in higher extent. The ROA of the HBL and calculated are enough to cover the interest to be paid on the debt financing. The TIE ratio of HBL is 0.692 times and the average is in average, 16.59% and the ratio of SBL is 1.284 times of average for 22.76%. It shows the high profit of the banks and lower level of debts financing. Highest TIE ratio shows that of firm can pay interest easily. The Loan and Deposit plays significant role in the banks. The

profit of the bank highly depends on the deposit collection and loan mobilization. The next conclusion drawn is that the dependency of EBIT of the sample bank is on its deposit collection and loan mobilized. The EBIT of the HBL and SBL are highly dependent on the loan and deposit. So, the conclusion from these results is that the deposit collection and loan mobilization has significant and prominent role in the increase or decrease in the EBIT of the banks. The large portion of EBIT is fluctuated with the fluctuation on loan and deposit. So in the conclusion, the present capital structure of the commercial bank is dominated by the equity portion and there is the significant relationship between the Debt, Equity and Net Income. On the same way the regression line of EPS on deposit and loan has shown EPS is highly depended on deposit collection and loan mobilization of the banks.

5.3 Recommendations

Recommendations are the suggestions for the organizations to solve the problems existing in the organization. Here based on the analysis made in chapter IV, findings of the study and conclusion drawn from the study the researcher has little effort made to provide some recommendation that will be beneficiary for the HBL and SBL of Nepal on their debt equity ratio shows their relationship between the banks debt and equity financing. The decreasing debt ratio is preferable for the commercial bank in Nepal. As form the study and conclusion also states that the majority of the capital structure is equity capital. The first recommendation goes for the increment of the debt capital financing as the debt has got the tax beneficiary and cost of capital can be reduced which ultimately increases the profit of the firm and value maximization. The optimal capital structure is the rational mix of debt and equity capital that reduces the cost associated with the capital which can be obtained through debt and equity on present capital structure of the banks. On the same way as the operating profit of the banks is in increasing trend but the EPS is decreased it is due to high volume of equity on capital structure. Relationship between the Debt, Equity and Net Income is significant & positive. The changes on the capital structure should be done with the detail study and thorough analysis of its impacts on the overall organization. As the TIE ratio is high it can employ little more debt in capital structure management and get the advantage of tax benefit and increase the EPS rather than only increasing the operating profit. The high dependency of EBIT on loan and deposit recommends that the banks should collect as far as more deposit and the loan mobilization should be so good

that can be realized easily rather than going through the legal hassles and bear extra costs for loan collection. So, more attention should be paid on the loan mobilization. Besides these, the banks Basic Earning power is also too much low.

The conclusion derive from finding of the study, joint venture banks have lack of theoretical and practical knowledge with regard to capital structure theories. Both HBL and SBL have concentrated their business with businessmen and industrialist.

Additionally banks are required and recommended to expand assets and branches which ultimately affect the banks capital structure and expected to increase the profitability more than the present. Interest Coverage ratio of both banks is very poor however SBL is in better position as compared to HBL in its debt servicing capacity. The capital structure position of both bank should give continuity in providing both conceptual and practical training to the staff to enhance their knowledge skill and competency level , they should remain consistency moral and motivation. The banks have to enhance effectiveness, efficiency and proper coordination of its department tasks by continuously reviewing its structural design in accordance with the need of changing time and situation. Both the banks vary incase of total assets, no. of staff, no. of branches and their volume of transactions. Both the banks are well established, however office operating expenses of HBL is higher than that o SBL. So HBL is suggested to minimize the cost. To develop the banking sector in Nepal it should have proper strategy for the sustain in long time. So both banks are suggested to render services even in rural areas providing special loans to deprived and priority sectors, which might be further intensify the goodwill of the banks in future. In addition they have not been able to collect the saving from rural areas. So they are recommended to open branches in rural area also.

It is true that financial strength of a bank heavily depends upon the marked in urban areas but to concentrate banking services only in urban areas inn't desirable for the economic development of a country. Rural communities are neglected commercial banks. They have not opened their branches to serve society adequately. So the bank is required to be cooperative and should open up or extend their branches in remote areas. It has been found that modern banking technology followed by NRB of Nepal is mostly beneficial to the high level of depositors. So both the banks

are suggested to make this technology accessible to all kinds of their depositors as far as possible.

So HBL and SBI should have to focus on utilize total assets to generate higher return on assets and generate higher profit to shareholders equity. Comparatively, HBL seems in satisfactory position.

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ANNEXURE

ANNEX-1

Return on Total Deposit of HBL and SBL

$$= \frac{\text{Net Income}}{\text{Total Deposit}}$$

(Amount in Million)

Fiscal Year	Net Income of HBL	Total Deposit HBL	Total Deposit SBL
2006/07	1626.474	264.91	3918-
2007/08	1775.583	300.48	6625
2008/09	1963.647	318.43	10191
2009/10	2342.198	346.81	15855
2010/11	3148.605	376.11	20196

ANNEX-2

Debt Equity Ratio of HBL and SBL

$$\text{Debt to Equity Ratio} = \frac{\text{Long-term Debt}}{\text{Shareholders equity}}$$

(Amount in Million)

Fiscal Year	Long Term Debt of HBL	Shareholders Equity of HBL	Long Term Debt of SBL	Shareholders Equity of SBL
2006/07	5046.625	1766.176	4089	458
2007/08	595.968	2146.500	7066	668
2008/09	943.178	2512.992	10458	889
2009/10	500.000	3119.88	16385	1211
2010/11	500.000	3439.205	994.617	1496.755

ANNEX-3

Total Debt to Total Assets Ratio

$$\text{Debt to Total Assets Ratio} = \frac{\text{Total Debt}}{\text{Total Assets}}$$

Total Debt to Total Assets Ratio of HBL and SBL

(Amount in million)

Fiscal Year	Total Debt of HBL	Total Assets of HBL	Total Debt of SBL	Total Assets of SBL
2006/07	504.625	30579.808	4089	4757
2007/08	595.968	34314.868	7066	7955
2008/09	43.178	36857.624	10458	11669
2009/10	500.000	40046.686	16385	17882
2010/11	500.000	43860.251	994.617	2277.318

ANNEX-4

Interest Coverage Ratio

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

(Amount in Million)

Fiscal Year	EBIT of HBL	Interest of EBL	EBIT of SBL	Interest of SBL
2006/07	672.399	977.632	255	154
2007/08	717.404	1008.171	425	272
2008/09	948.839	1139.309	627	405
2009/10	1066.606	1407.420	1150	566
2010/11	755.727	1595.075	335.55	734`

ANNEX-5

Return on Shareholders Equity of HBL and SBL

$$\text{ROSE} = \frac{\text{Net Profit After Tax}}{\text{Shareholders Equity}}$$

Return on Shareholders Equity

(Amount in Million)

Fiscal Year	Net Profit After Tax of HBL	Shareholders Equity of HBL	Net Profit after Tax of SBL	Shareholders Equity of SBL
2006/07	457.458	1766.176	65	668
2007/08	491.823	2146.500	95	889
2008/09	635.869	2512.998	143	1211
2009/10	752.835	3119.88	218	1496.70
2010/11	508.798	3439.205	383.54	1603.54

ANNEX-6

Return on Total Assets

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

Return on Total Assets

(Amount in Million)

Fiscal Year	Net Profit after Tax of HBL	Total Assets of HBL	Ne profit after Tax of SBL	Total Assets of SBL
2006/07	457.458	30579.808	65	4757
2007/08	491.823	34314.868	95	7955
2008/09	635.869	36857.624	143	11669
2009/10	752.835	40046.686	218	17882
2010/11	508.798	43860.251	383.54	2277.318

ANNEX-7

Earning Per Share of HBL and SBL

$$\text{EPS} = \frac{\text{Net Income}}{\text{Number of Share}}$$

Earning Per Share

(Amount in Million)

Fiscal Year	Net Income of HBL	No. of share of HBL	Net Income of SBL	No. of Share of SBL
2006/07	1626.474	1766.176	65	120.628
2007/08	1775.583	2146.500	95	132.285
2008/09	1963.647	2512.992	143	129.027
2009/10	2342.198	3119.881	218	1340294
2010/11	3148.605	3439.205	383.54	146.44

ANNEX-8

Calculation of PE

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

PE of HBL and SBL

Fiscal Year	HBL P.E. = $0.6745 \frac{1-r^2}{\sqrt{n}}$		SBL P.E. = $0.6745 \frac{1-r^2}{\sqrt{n}}$	
Return on Total Deposit	$=0.6745 \frac{1-(0.9391)^2}{\sqrt{5}}$ = 0.035	Significant	$=0.6745 \frac{1-(0.981302)^2}{\sqrt{5}}$ = 0.0113	Significant
Total Debt to Equity Ratio	$=0.6745 \frac{1-(-0.1605)^2}{\sqrt{5}}$ = 0.2939	Insignificant	$=0.6745 \frac{1-(0.7004)^2}{\sqrt{5}}$ = 0.1537	Insignificant

Total Debt to Total Assets	$=0.6745 \frac{1-(0.74047)^2}{\sqrt{5}}$ =0.2339	Insignificant	$=0.6745 \frac{1-(-0.1678)^2}{\sqrt{5}}$ =0.2932	Insignificant
TIE	$=0.6745 \frac{1-(0.383737)^2}{\sqrt{5}}$ =0.2572	Insignificant	$=0.6745 \frac{1-(0.239086)^2}{\sqrt{5}}$ =0.2844	Insignificant
ROSE	$=0.6745 \frac{1-(0.9347)^2}{\sqrt{5}}$ =0.038	Significant	$=0.6745 \frac{1-(0.9642)^2}{\sqrt{5}}$ =0.02121	Significant
ROA	$=0.6745 \frac{1-(0.422163)^2}{\sqrt{5}}$ =0.2479	insignificant	$=0.6745 \frac{1-(0.966594)^2}{\sqrt{5}}$ =0.0198	Insignificant
EPS	$=0.6745 \frac{1-(0.934693)^2}{\sqrt{5}}$ =0.03381	Significant	$=0.6745 \frac{1-(0.977212)^2}{\sqrt{5}}$ =0.0136	Significant

ANNEX-9

Calculation of PE of Return on Total Deposit of HBL

$$\begin{aligned}
 PE &= 0.6745 \frac{1-(0.9391)^2}{\sqrt{5}} \\
 &= 0.035 \\
 6*PE &= 6*0.035 \\
 &= 0.21
 \end{aligned}$$

Since $r > 6PE$, we conclude that r is significant

Again, limits of population correlation coefficient

$$= r \pm 0.035$$

$$\therefore \text{Lower limit} = 0.035$$

$$\text{And upper limit} = 0.883$$

ANNEX-10

Calculation of Standard Deviation

Calculation of EPS of HBL

(Amount in Million)

Fiscal Year	X	$x = X - \bar{X}$	X^2
2006/07	59.24	3.97	15.76
2007/08	60.67	5.4	29.16
2008/09	62.74	7.47	55.80
2009/10	61.90	6.63	43.96
2010/11	31.80	-23.47	550.84
	$\Sigma X = 276.35$		$\Sigma X^2 = 695.52$

Now,

$$\text{Mean } (\bar{X}) = \frac{\Sigma X}{n} = \frac{276.35}{5} = 55.27$$

Now calculation of standard deviation

$$\text{S.D.} = \sqrt{\frac{\Sigma X^2}{n}} = \sqrt{\frac{695.52}{5}} = 11.794$$

ANNEX-11

Calculation of EPS of SBL

Fiscal Year	X	$x = X - \bar{X}$	X^2
2006/07	13.05	-5.17	26.73
2007/08	15.88	-2.34	5.48
2008/09	17.29	-0.93	0.860
2009/10	22.89	4.67	21.81
2010/11	21.99	3.77	14.21
	X=91		$X^2=69.09$

Now,

$$\text{Mean } (\bar{X}) = \frac{91}{5} = 18.22$$

Now calculation of standard deviation

$$\text{S.D.} = \sqrt{\frac{\sum X^2}{n}} = \sqrt{\frac{69.09}{5}} = 3.72$$

ANNEX-12

Calculation of Correlation of HBL and SBL

For actual mean method we use the following formula

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

Correlation of HBL

Net Income(X)	Total Deposit(y)	$X - \bar{X}$	$Y - \bar{Y}$	$(X - \bar{X})^2$	$(Y - \bar{Y})^2$	$(X - \bar{X})(Y - \bar{Y})$
1626.474	264.91	-544.826	-56.438	296835.37	3185.25	30748.89
1775.583	300.48	-395.717	-20868	156591.94	435.47	8257.822
1963.647	318.43	-207.653	-2.918	43119.77	8515	605.931
2342.198	346.81	170.898	25.462	29206.13	648.31	4351.40
3148.605	376.11	977.305	54.762	955125.063	2998.88	53519.18
10856.51	1606.74			1480878.273	7276.425	97483.22

$$\bar{X} = \frac{\sum X}{n} = \frac{10856507}{5} = 2171.30$$

$$\bar{Y} = \frac{\sum X}{n} = \frac{1606.74}{5} = 321.348$$

Now,

$$r = \frac{97483.22}{\sqrt{1480878.273 \times 7276.425}} = \frac{97483.22}{\sqrt{1.07755}} = 0.939098$$

ANNEX-13

Correlation of SBL

Net Income(X)	Total Deposit(y)	X- \bar{X}	Y- \bar{Y}	(X- \bar{X}) ²	(Y- \bar{Y}) ²	(X- \bar{X}) (Y- \bar{Y})
65	3918	-139.6	-7439	19488.16	55338721	1038484.4
95	6625	-109.6	-4732	12012.16	22391824	518627.2
143	10191	-61.6	-1166	3794.56	1359556	71825.6
336	15855	131.4	4498	17265.96	20232004	591037.2
384	20196	179.4	8839	32184.36	78127921	1585716.6
1023	56785			84745.2	177450026	3805691

Now,

N= number of observation =7

$$\bar{X} = \frac{\sum X}{n} = \frac{1023}{5} = 204.6$$

$$\bar{Y} = \frac{\sum Y}{n} = \frac{56785}{5} = 11357$$

Now,

$$r = \frac{3805691}{\sqrt{84745.2 \times 177450026}} = \frac{3805691}{\sqrt{291.1102884 \times 13321.03697}} = \frac{3805691}{3877890.9} = 0.98138$$

ANNEX-14

Calculation of T-test of Debt Equity Ratio between HBL and SBL

$$t = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{s^2 \left(\frac{1}{n_1} + \frac{1}{n_2} \right)}}$$

Table for calculation of s^2

HBL(X_1)	SBL(X_2)	X_1^2	X_2^2
0.13	0.59	0.0169	0.3481
0.20	0.26	0.04	0.0676
0.38	0.4	0.1444	0.16
0.16	0.18	0.0256	0.0324
0.14	0.14	0.0196	0.0196
$X_1=1.01$	$X_2=1.57$	$X_1^2=0.2465$	$X_2^2=0.6277$

$$\bar{X}_1 = \frac{\sum X_1}{n} = \frac{1.01}{5} = 0.202$$

$$\bar{X}_2 = \frac{\sum X_2}{n} = \frac{1.57}{5} = 0.314$$

We have,

$$\begin{aligned} S^2 &= \frac{1}{n_1+n_2-2} \{ \sum (X_1 - \bar{X}_1)^2 + \sum (X_2 - \bar{X}_2)^2 \} \\ &= \frac{1}{5+5-2} \{ \sum (1.01 - 0.202)^2 + \sum (1.57 - 0.314)^2 \} \\ &= 0.2788 \end{aligned}$$

ANNEX-15

Regression Analysis of SBL

Let X and Y represent the Net Income and Total Deposit of SBL respectively. The regression equation of Total deposit and net income of SBL is:

$$Y = a + bX$$

Where,

$$a = \bar{Y} - b\bar{X}$$

Net Income(X)	Total Deposit(y)	u	v	U ²	uv
65	3918	-78	-6273	6084	489294
95	6625	-48	-3566	2304	171168
143	10191	0	0	0	0
336	15855	193	5664	372.49	1093152
384	20196	241	10005	58081	2411205
1023	56785	308	5830	66841.49	4164819

$$b = \frac{n\sum uv - \sum u \sum v}{n\sum u^2 - (\sum u)^2} = 0.571$$

$$\bar{X} = \frac{\sum u}{n} = \frac{1023}{5} = 204.6$$

$$\bar{Y} = \frac{\sum v}{n} = \frac{56785}{5} = 11357$$

And

$$a = \bar{Y} - b\bar{X} = 11357 - 0.571 \times 204.6 = 11240.17$$

Now substituting the value of a and b in equation, we get

$\hat{Y} = 11240.17 - 0.571X$ which is the required estimated regression equation of X and Y.