# A CASE STUDY ON CAPITAL STRUCTURE MANAGEMENT OF SIDDHARTHA BANK LIMITED

**Submitted by**

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***RECOMMENDATION***

This is to certify that the thesis

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**Krishna Prasad Sharma**

Entitled

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has been prepared as approved by this Department in the prescribed format of Faculty of Management. This thesis is forwarded for examination.

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## *VIVA-VOCE SHEET*

We have conducted the viva-voce examination of the thesis presented by

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

**Master's Degree in Business Studies (M.B.S.)**

**Viva-Voce Committee**

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## DECLARATION

I hereby, declare that the work reported in this thesis entitled **"A Case Study on Capital Structure Management of Siddhartha Bank Limited"** submitted to Central Department of Management, University Campus, T.U., Kirtipur is my original piece of work done in the form of partial fulfillment of the requirement for the Master's Degree in Business studies under the supervision and guidance of Dr. Gopi Nath Regmi, Lecturer, Central Department of Management.

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Krishna Prasad Sharma

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## ABBREVIATION AND SYMBOLS

| | | |
|---|---|---|
| $ | : | US dollar |
| % | : | Percentage |
| & | : | And |
| ATM | : | Automated Teller Machine |
| Av. | : | Average |
| DFL | : | Degree of financial leverage |
| DOL | : | Degree of operating leverage |
| DPR | : | Dividend Payout ratio |
| EBIT | : | Earning Before interest and tax |
| EBT | : | Earning before tax |
| EPS | : | Earning per share |
| Etc | : | Et cetera |
| F.Y | : | Fiscal Year |
| FDI | : | Foreign direct investment |
| HBL | : | Himalayan Bank Limited |
| $K_d$ | : | Cost of debt |
| $K_e$ | : | Cost of equity |
| $K_o$ | : | Overall cost of capital |
| Ltd. | : | Limited |
| MBA | : | Master of Business Administration |
| MBS | : | Master in business studies |
| MM | : | Modiglliani and Merton Miler |
| MV | : | Market Value |
| MVPS | : | Market value per share |
| NBBL | : | Nepal Bangladesh Bank Limited |
| NEPSE | : | Nepal stock Exchange |
| NI | : | Net income |
| NOI | : | Net operating income |
| NRB | : | Nepal Rastra Bank |
| P/E | : | Price earning ratio |
| PE | : | Probable of Error |

| | | |
|---|---|---|
| Prof. | : | Professor |
| $Prop^n$ | : | Proportion |
| r | : | Correlation coefficient |
| $r^2$ | : | Multiplier Determination |
| ROA | : | Return on assets |
| ROE | : | Return on equity |
| ROSE | : | Return on shareholders equity |
| SBL | : | Siddhartha Bank Limited |
| SD | : | Standard deviation |
| US | : | United States of America |
| USD | : | United States Dollar |
| $V_o$ | : | Value of firm |
| WACC | : | Weighted average cost of capital |

# CHAPTER – I

# INTRODUCTION

## 1.1 Background of the Study

Nepal is a landlocked mountainous country situated between two Asian giants China and India, both having well-developed economic condition. It is a small country with an area covering 1,47,181 square kilometer and also ranked to last developing country with per capital income U.S. $ 210. Around 38 percent of the Nepalese are under poverty line. The poverty eradication plan of Nepal is not efficient due to the difficult geographical structure and corruption. The nation has not been able to exploit the natural researches scattered all over the country. It is one of the richest counties for hydropower with potentiality of 83,000 megawatts but due to its developing nature is not being able to utilize its full capacity and has been using only about 0.6 percent of full capacity. The development of a country is measure on its economic indices. Nepal like all underdeveloped countries has been facing problem of accelerating the economic development. Development of industrial sector, among other sectors, is equally essential for the rapid economic development of the country. But it is impossible without the development of different sector like banks, Agriculture and Industry etc. of the economy. Nepal, like any other country has been laying emphasis on the uplifting of its economy. The process of economic development depends upon various factors. To develop the nation investment is essential. Investment simply means capital. Capital is one of the prime factors that is necessary for the development and advancement of the country. The development countries are facing difficulties in capital because they have only small amount of household to be used for investment. This is very small saving amount for this purpose. Nepalese government is directed the policies toward foreign direct investment to fulfill the lack capital. Since from past few years, the situation of country is deteriorating day by day. Uncertainty and fear have bounded every sectors of the economy. So, the FDI is not possible on that situation. Every year the government is assigning fewer funds for development

purpose. This has seriously hit not only the economic growth of the country but also the investment environment in the country (Joshi, 2064).

Banks and Financial institutions are viewed as catalyst and lubricant in the process of economic growth and the prosperity of the country. The mobilization of domestic resources, capital formation and its proper utilization plays an important role in the economic development of a country. Every financial institution, big or small, be it a commercial bank or a finance company or a cooperative bank, play an important role in the development of a country.

In the contest of capital formation, the bank and financial institution play important and vital role of capital formation. Banks collect saving from its customer and it earns profit investing this saving in business and industries, which led country to develop.  Banks are necessary for every country at any economic condition. Without bank, economy cannot improve, and development of every country becomes impossible.

Banking industry is one of the fast growing businesses in Nepal. After the government affected the liberalization policy, this sector has been developed dramatically. Banks are major financial institutions, which occupy an important place in the economy because through the deposits they collect, they provide much needed capital for the development of industry, trade and business and other deficit sectors, thereby contributing to the economic growth of the nation. Now more than two dozen of commercial banks are in operation. Commercial banks have huge collection from depositors. Effective utilization of collected fund is possible only through sound investment policy. They mainly invested upon the instructions and guidelines issued by NRB. They are unable to estimate the future; they should make sound capital structure so that they can able to minimize the overall cost and make profit maximization. Insufficient fund decrease the profit or increase opportunity cost and excess capital also increase the cost of capital. To identify the optimum capital structure is difficult .the bank is increase the branch overall the country and increase its market. However, the investment area is limited. In this

contest to determine, the sound capital structure of the company is complicated. The bank should have clear view towards capital structure policy. The main reason attributed to unsound capital structure is lack of proper analysis on financial risk, interest rate risk, liquidity risk, business risk etc.

The banking sector is largely responsible for collecting household saving in different types of deposit and regulating them by lending in different sectors of economy. The banking sector has now reached to the most remote areas of the country and has experienced a good deal in the growth of the economy.

In Nepal banking, activities were started after the establishment of Nepal Bank Limited (NBL) in 1937. In 1955, the Central Bank was established with objectives of supervising, protecting and directing the functions of commercial banking activities. Rastriya Banijya Bank was established in 1966 as second commercial bank owned by the government.

Nepal's reform efforts in the financial sectors began in 1980s when NRB eased the entry restrictions of foreign banks with an amendment to the Commercial Bank Act 1974. As a result, the banks namely Nepal Arab Bank Limited (Nabil, Nepal Indo-Suez Bank and Nepal Grind lays Bank (NGBL)came into operation prior to 1990s. However, only in 1992, after NRB adopted a liberal attitude in permitting commercial banks to open, the financial liberalization really took place. Eleven new joint venture banks were opened after the real financial liberalization took place.

### 1.2 Origin and Growth of Modern Banks

Despite strong criticism from the Church regarding charging of interest, Modern Banking sowed its seed in the Medieval Italy and Bank of Venice was setup in 1157 A.D. in Venice. It is regarded as the first modern bank. Subsequently, Bank of Barcelona (1401) and Bank of Genoa (1407) were established. The Lombard's migrated to England and other parts of Europe from Italy and is regarded for their role in the development and expansion of the Modern Banking. Bank of Amster-

dam, set up in 1609 was very popular then. The Bank of Hindustan established in 1770 is regarded as the first bank in India.

Though Bank of England was established in 1694, the growth of banks accelerated only after the introduction of Banking Act 1833 in United Kingdom as it allowed opening Joint Stock Company Banks.

**Development of Banking in Nepal**

Banking concept existed even in the ancient period when the goldsmiths and the rich people used to issue the receipts to the common people against the promise of safe- keeping if their valuable items. On the presentation of the receipts, the depositors would get back their gold and valuables after paying a small amount for safe-keeping and saving. The goldsmiths and the moneylenders became bankers of those days who started performing two functions of modern banking- accepting deposits and advancing loans. The stage wise development of banking can be presented as follows:

**The First Phase of Banking Development**

- Eight century, king "Gunkamdev" renovated the Kathmandu city by taking loan. At the end of same century merchant named "Shankhardhar" has started the New Year Nepal sambhat after freeing all people of Kathmandu from the debt.
- In the 11$^{th}$ century, during Malla reigns, there was an evidence of professional money lender and buyer.
- Tejarath Adda was established in 1877 A.D., which provided loan at very low rate of 5 percentage.

**The Second Phase of Baking Development**

- The modern banking in Nepal has started with established of Nepal Bank Ltd. in 1994 B.S.

- Having felt the need of development of banking sector and to help the government formulate monetary policies, Nepal Rastra Bank was set up in 2013 B. S. as the central bank of Nepal.
- In B.S. 2022, Government set up Rastriya Banijya Bank as a fully government owned commercial bank.
- The agricultural development bank was established B.S. 2024. This bank was established with the objective of increasing the life standard of the people who are involved in agriculture.

**The Third Phase of Banking Development**

The process of development of banking system in Nepal was not satisfactory. Nepal was observing the events that were taking places in the world also. The country can't change it status by using only its own capital in the country without importing the new technology from Foreign country and accordingly, law and policy have been enacted by the state to encourage the foreign investment on banking sector. From this, the real form to the development of the banking system started in Nepal. In order to established and develop other Joint venture commercial banks and other financial institution, Nepal adopted liberal free economic policy. Accordingly, Nepal is allowed to established different joint venture banks under the collaboration with foreign banks.

**The Fourth Phase of Banking Development**

From 2041 B.S, His Majesty's Government of Nepal established 5 rural development banks. They are as follows:

- Eastern Rural Development Bank
- Central Rural Development Bank
- Western Rural Development Bank
- Mid-western Rural Development Bank
- Far-western Rural Development Bank

In order to establish and develop other joint venture commercial banks and other financial institution, Nepal adopted liberal free economic policy. After 2041 B.S., the government gradually liberalized and opened up the financial sector, resulting in the rapid entry of the foreign banks. Later, in 2041 B.S., with the grand opening of NABIL Bank Ltd., other commercial banks started emerging in the private sectors. As a result, now there are altogether 31 commercial banks operating at different parts of the country. At present, the banking sector is more liberalized and there are various types of bank working in modern banking system. This includes central, development and commercial banks. Evolution of the information technology has revolutionized the banking sector is saving lots of time and money by implementing IT. Technology has changed the traditional method of the services of bank. Invention of different software and hardware, which are very essential and available for functioning bank such as Banking software, ATM, E-banking, Mobile Banking and card like Debit card, Credit card, Prepaid card etc which helps the customer as well as banks to operate and conduct their activities more efficiently and effectively. This helps bank to generate more customers, goodwill and profit.

**Table 1.1: Major Players in Nepalese Financial System**

| S.N | Organization | Number |
|---|---|---|
| 1 | Central Bank | 1 |
| 2 | Commercial Bank | 31 |
| 3 | Development Bank | 84 |
| 4 | Financing Companies | 80 |
| 5 | Co-operatives | 20000 |
| 6 | Micro Credit Financial Institutions | 23 |
| 7 | NGOs licensed by NRB | 52 |
| 8 | Insurance Companies | 26 |
| 9 | Employee Provident Fund | 1 |
| 10 | Citizen Investment Trust | 1 |

*Source: Naya Patrika Tuesday, 15 Dec. 2010*

**Commercial Banking System in Nepal**

Banking in modern sense started with the inception of Nepal Bank Limited (NBL) on B.S.1994/07/30 with 51 percent Government Equity. NBL had a staggering responsibility of attracting people towards banking sector from predominant money-lenders net and of expanding banking services. Being a commercial bank, it was natural that NBL paid more attention to profit generation business and preferred opening branches at urban centers.

The Government however had duty of stretching banking services to the nooks and corners of the country and also managing the Financial System in a proper way. Thus Nepal Rastra Bank (NRB) was established on B.S. 2013/01/14 with full government ownership as a Central Bank under NRB Act 2012 B.S. Since then it has been functioning as the Government's Bank and has contributed to the growth of financial sector. The major challenge before NRB today is to ensure the robust health of financial institutions. Accordingly, NRB has been trying to change itself and has introduced a host of prudential measures to safe guard the interest of the public. NRB is yet to do a lot to prove itself as an efficient supervisor. NRB really requires strengthening their policy making, supervision, and inspection mechanism. For the integrated and speedy development of the country, the Government set up Rastriya Banijya Bank (RBB) in B.S.2022/10/10 as a fully government owned commercial bank. As the name suggests, commercial banks are to carry out commercial transactions only. Nevertheless, commercial banks had to carry out the functions of all types of financial institutions. Hence, Industrial Development Centre (IDC) was set up in 2013 B.S. for industrial development but in 2016 B.S., IDC was converted to Nepal Industrial Development Corporation (NIDC), after that in 2024 B.S. Agricultural Development Bank (ADB) was established to provide finance for agricultural producers so that agricultural productivity could be enhanced by introducing modern agricultural techniques. In the late 2030s, to meet the need of healthy competition in the Financial System, Nepal allowed the entry of foreign banks as joint ventures with up to a maximum of 50 percent equi-

ty participation. Responding to this, Nepal Arab Bank Limited (now changed name as Nabil Bank Ltd) became the first bank to be established under such policy in the year 2041 B.S.

**Role of Commercial Bank in Economic Development**:

A well development banking system is a necessary pre-condition for economic development in a modern economy. Besides providing financial resources for the growth of industrialization, banks can also influence the direction in which these resources are to be utilized. In a modern economy, banks are to be considered not merely as dealers in money but also the leaders in development. They are not only the storehouses of the country's wealth but also utilize the resources necessary for economic development. It is the growth of commercial banking in $18^{th}$ and $19^{th}$ centuries that facilitated the occurrence industrial revolution. The main objective of commercial banks is to mobilize the resources for productive use after collecting them from different places. It brings about greater mobility of resources to meet the emerging necessity of the economy. There are various roles played by a commercial bank for the development of an economy, which are capital formation, encouragement to entrepreneurial innovations, influencing economic activity, promotion of trade and industry, development of agriculture and other neglected sectors. Therefore, the fate of the country is greatly determined by the active role of commercial banks. Banks provide facilities to their customers by providing loans, remitting funds, purchase and sale of bills and other market information. These services help to run the business and other economic activities rapidly as well smoothly which ultimately helps in economic development.

### 1.3 Profile of Siddhartha Banks Limited

Siddhartha Bank Limited (SBL) commenced operations in 2002. The Bank is promoted by a group of highly reputed Nepalese dignitaries having wide commercial experience, In Nepal, today stands as one of the premier banks in the country. While the promoters come from a wide range of sectors they possess immense business acumen and share their valuable experiences towards the betterment of

the bank. Siddhartha Bank now boasts of strong retail banking and trade operations complementing its longstanding corporate finance expertise. Within a short span of time, Siddhartha Bank has been able to establish itself as a healthy and strong institution, with profitability, capital adequacy and portfolio quality of the highest order. The bank provide a full range of commercial banking services through ten branches established in Katmandu (Kamaladi, Newroad, Tripureshwor, Baneshwor), Birgunj, Biratnagar, Pokhara, Damak,Narayangarh, Patan (Patandhoka, B and B extension counter).

Siddhartha Bank provides various products and services. Siddhartha Bank Limited offers a wide variety of services ranging from a small saving account to large finances. It has something for every section of the society and its services are tailor made to suit every customer. The services provided so far are as follows:

1. Current, Savings, Call and Fixed Deposit Accounts-both in LCY and FCY
2. Funds Transfer (Draft, T.T. and Fax, Western Union Money Transfer etc.)
3. Purchase & Sale of Traveler's Cheques
4. ATM / Debit Card
5. Trade Finance
6. Bank Guarantees
7. Letters of Credit
8. Bills Purchases
9. Corporate Finance
10. Consumer Loans
11. Clearing / Collection
12. Safe Deposit Lockers
13. Anywhere Branch Banking System (ABBS)
14. Extended Counter Services
15. Banking Services on SWIFT
16. Other Allied services.

## 1.4 Statement of Problem

Banking industry is one of the fast growing businesses in Nepal. After the liberalization policy was affected by the Government. This sector has been developed dramatically. Now more than two dozen of commercial banks are in operation. Commercial banks have huge collection from depositors. Effective utilization of collected fund is possible only through sound investment policy. They mainly invested upon the instructions and guidelines issued by NRB. They are unable to estimate the future; they should make sound capital structure so that they can able to minimize the overall cost and make profit maximization. Insufficient fund decrease the profit or increase opportunity cost and excess capital also increase the cost of capital. To identify the optimum capital structure is difficult. The bank is increase the branch overall the country and increase its market. But the investment area is limited. In this contest to determine the sound capital structure of the company is complicated. The bank should have clear view towards capital structure policy. The main reason attributed to unsound capital structure is lack of proper analysis on financial risk, interest rate risk, liquidity risk, business risk etc.

The problem that still persists for a bank even today is to find a proper and viable project to ensure healthy profit. They have always feared high degree of risk and uncertainty owing to lack of profitable sectors for their investment. The high liquidity position of banks has resulted in a decrease in investment in productive sectors. Thus, the present study will make a modest attempt to analyze capital structure policy of this bank. Following are the major problems that show in the study.

1. How much return is obtained by shareholders?
2. To what extent the bank have been able to raise its profitability?
3. How efficiently the Siddhartha Bank is managing its market related ratios?
4. How much the bank is able to maintain its composition of capital structure?
5. What are the fund raising sources of Siddhartha Bank Limited?

## 1.5 Objective of the Study

Capital structure decision is one of the major decision functions of financial management. The main purpose of this study is to assess the capital structure policy and strategies followed by Siddhartha bank. The other specific objectives are as follows:

- To examine the profitability position of the bank
- To analyze various market related ratios.
- To analyze the composition of capital structure.
- To explore the sources of fund of Siddhartha bank.

## 1.6 Significance/ importance of the Study

The financing sector of Nepal is expanding day by day. In recent days, the nation is facing with lot of obstacle. In this situation the manufacturing and trading sector is also running slowly, beside that, banks are increasing and they are expanding their market, so the Capital is essential. Capital is a backbone of every organization. Various factors affect the capital structure. Stability and growth rates, cost of capital, management attitude, taxes, investment opportunity, control and flexibility etc. This study will helpful to the company's overview to their capital structure management and to formulate future strategies to do much better in their horizon.

So, capital structure is essential indicator of company's financial decision making. It is the large extent determinant of the company profitability. This study shows the effect in cost of capital with the help of better combination of capital structure this study will provide a useful feedback to academic institutions, bank employees, trainees, investors, policymaking bodies and those concerned with banks in the formulation of appropriate strategies for improving the performance of banks.

Since, from past few years, the situation of country is deteriorating day by day. Uncertainty and fear have bounded every sectors of the economy. Every year the government is assigning fewer funds for development purpose. This has seriously hit not only the economic growth of the country but also the investment environment in the country, so being active members of the country, commercial banks of Nepal are also affected by this situation. On this ground, management of banks should have to think precisely before making any investment. Therefore, all these events have raised the necessity for formulating sound capital structure policy. With this connection, by this study having topic "A CASE STUDY ON CAPITAL STRUCTURE OF SIDDHARTHA BANK LIMITED." The research is tries to find out the investment policies of the commercial banks. Further, this study tries to explore, whether the policies they have formulated are sufficient or not, whether they have managed their investable fund in proper source or not and so on.

### 1.7 Limitations of the Study

Like every research study, this study also has some limitations viz-inadequate coverage of commercial banks, time period taken and other variables. The following factors are the basic limitations.

a) The study is based on secondary data collected from the banks, particularly based on data gathered from the published annual report of the banks.
b) This study is limited to only a period of five years of this study deals with only one, no other commercial banks have not been considered in this study.
c) The data are presented at rounding figure.
d) Concerned banks and hence the conclusion drawn only confines to the above period (FY 2005/06 to 2009/10).

## 1.8 Organization of the Study

This research study has been divided into five chapters. They are as follows:

**Chapter – I**

In the first chapter, introduction part of the study. It has introduction of commercial bank as well as the introduction of sleeted banks Siddhartha Bank Limited, General background of the study, commercial banking scenario in Nepal, statement of the problem objective of the study, significance of the study, limitation of the study, organization of the study are arranged.

**Chapter – II**

The second chapter deals with review of literature. It includes a discussion on the conceptual framework of the capital structure. It also reviews the major relevant studies with fund mobilization of a commercial Bank.

**Chapter – III**

The third chapter explains the research methodology use to evaluate capital structure practices of joint venture bank in Nepal. It consists of research design, sources of data, population and sample, tools and method of analysis.

**Chapter – IV**

The fourth chapter deals with presentation and analysis of data through a definite course of research methodology. This chapter is to analyze different financial ratios and statistical analysis related to capital structure and fund structure of this sample bank.

**Chapter – V**

The fifth chapter discusses summary of the study and suggestion as well as recommendations. Besides this bibliography on appendices are also included.

# CHAPTER-II

# REVIEW OF LITERATURE

The purpose of reviewing the literature is to develop some expertise in one's area, to see what contributions can be made, and to receive some ideas for developing a research design. Every study is based on past study. Thus, the past studies cannot be ignored. This chapter helps to take adequate feed back to broaden the information based an inputs to my study. This chapter is divided into three different parts, which arrange in to the following order.

2.1 Conceptual Review
2.2 Review of Journals and Articles
2.3 Review of Thesis

## 2.1 Conceptual Review

This section is devoted to discuss briefly about the theoretical concept regarding the theories of capital structure.

### 2.1.1 Concept of the Capital Structure

Capital structure refers to the mix of long- term sources of funds. Such as debentures, long-term debt, preference share capital and equity share including reserve and surplus. Theoretically, the financial manager should plan an optimum capital structure for his or her company. If companies do not plan their capital structure, they may face difficulties in raising funds to finance their activities, thus the firms cannot achieve their goal. The capital structure decision affects the overall cost of capital, total value of the firm and earning per share. The optimal capital structure refers the combination of debt, preferred stock and equity that maximize the value of the firm and earning per share and minimize the cost of capital. The capital structure does not affect the total operating earning of a firm, but it affects the earnings per share and value of the firm. "Financial structure referees to the way the firm's assets are financed; it is the entire right hand side of the balance sheet.

Capital structure is the permanent financing of the firm, represented primarily by long-term debt, preference stock and common stock but excluding all short-term credit. Thus a firm's capital structure is only a part of its financial structure (Weston and Brigham).

"Capital structure is concerned with the analyzing the capital composition of the company"(Weston and Brigham, 1982: 555).

"The term 'capital structure' means the proportion of different types of securities issued by a firm, the optimal capital structure is the set of proportion that maximizes the total value of the firm" (Schall and Haley).

"A part from short term finance from creditors and banks, companies are usually financed either by long term loans (debentures) carrying a fixed rate of interest on capital or by ordinary shares carrying membership of the company and dividends at rates which depend upon profits" (Francis).

"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 reserves and surpluses i.e. retained earnings"(Pandey, 1999: 718).

"The two principal sources of long term financing are equity and debt capital. The composition of these two long term financing is known as capital structure. Under normal economic condition, the earnings per share can be increased using higher leverage, But leverage also increases the financial risk of the share holder" (Gautam and Thapa, 2060: 223).

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

A sound or appropriate capital structure should have the following features (Pandey, 1999: 719).

**A. Return:**

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

**B. Risk:**

The use of excessive debt threatens the solvency of the company. To the point debt does not add significant risk it should be used otherwise its use should be avoided.

**C. Flexibility:**

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

**D. 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 a company depends on its ability to generate future cash flows**.**

**E. Control:**

Control power is the one of the most concerned part for the management. Management always wants to maintain control over the firm. The capital structure should involved minimum risk of loss control of the company. Issue of excess equity shares to new investors may bring threats to the control by existing manager. The term capital denotes the long-term fund of the firm. All of the items on the liabilities side of firm's balance sheet, excluding current liabilities are sources of capital. The total capital can be divided into two components: debt and equity capital.

**(I) Debt Capital:**

It includes all long term borrowing incurred by the firm. Debenture, bonds, long-term loan etc. are major sources of debt or borrowed capital. A firm employs sub-total amount of debt capital of tax deductibility of interest payment, flexibility, and lower effective cost. However, excess amount of debt exposes high risk.

**(II) Equity Capital:**

It consists of the long- term fund provided by the firm's owners, the stockholders. In other words, equity capital includes common stock, paid in capital or share premium, reserve and surplus and retained earnings. Joint Stock Company cannot be established with any equity financing. Preferred stock is neither purely a debt nor equity.

**Classification of Capital**

For the purpose of classification of Capital Fund, the capital of the licensed institution shall be classified into the following two components. The capital structure means the aggregate of the core capital and supplementary capital.

**(A) Core capital**

The amounts under the following heads shall be included in the core capital:

a. Paid Up Capital
b. Share Premium
c. Irredeemable Preference Share
d. General Reserve Fund
e. Accumulated Profit and Loss Account
f. Capital Redemption Reserve
g. Capital Equalization Reserve
h. Other Free Reserve

The following items shall be deducted for the purpose of calculation of the core capital:

a. Goodwill
b. Excess amount of investment in shares and debentures of organized institutions than Prescribed by Nepal Rastra Bank.
c. Entire amount of investment made in shares and debentures of organized institutions having a financial interest.
d. Fictitious Assets.

**(B) Supplementary Capital**

The amount under the following heads, not exceeding one hundred percent of the core capital, shall be included under the Supplementary Capital.

a. Cumulative or Redeemable Preference Share
b. Subordinated Term Debt
c. Hybrid Capital Instruments
d. General loan loss provision
e. Exchange Equalization Reserve
f. Investment Adjustment Reserve
g. Assets Revaluation Reserve
h. Other Reserves (Thapa, 2065:208)

**Maintenance of Minimum Capital Fund**

The licensed institutions shall maintain minimum capital fund based on their risk-Weighted assets, as follows:

**Table: 2.1**

**Minimum Capital Fund**

| Institutions | Require Capital fund on the weighted risk assets (%) | |
|---|---|---|
| | Core Capital | Capital Fund |
| "A" Class | 6.0% | 10.0% |
| "B" & "C" Class | 4.0% | 11.0% |
| "D" Class | 4.0% | 8.0% |

*Source: www.nrb.org.np*

Financial decision must be very sensitive in misappropriate composition of debt equity in capital structure may lead to bankruptcy of the firm. The optimal capital

structure is attaining at the level where the risk and cost perception of shareholder; is minimized and returns are maximized. As the return to shareholder; is maximized automatically, the market value of the firm is maximized. The capital structure affects the cost of the firm. The financial manager must be sensible while selecting the optimal capital structure for the firm (Thapa, 2065: 201, www. nrb.org.np).

### 2.1.2 Assumption of Capital Structure

To explain different theories, following assumptions are:

a. There are no corporate or personal income taxes.
b. There are no bankruptcy costs.
c. The dividend payout ratio is 100 percent. That is total earning s are paid out as dividend to the shareholders and there are no retain earning.
d. The ratio of debt to equity of a firm can change many times but the total assets remain constant.
e. There are no transaction costs.
f. The operating earnings of the firm remain constant; that is, growth rate is equal to zero.
g. The operating earnings of the firm are not expected to grow.
h. The expected value of the subjective probability distribution of expected future operating earnings for each company are the same for all investors in the market (Bhattarai, 2006: 340).

### 2.1.3 Theories of Capital Structure

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

#### 2.1.3.1 Net Income Approach

The net income approach support the traditional theory of capital structure. This theory is a relevant theory of capital structure. According to this theory, the capital

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

**Assumption of net income approach:**

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

a. There are no taxes.
b. The cost of debt is less than the equity capitalization rate or the cost of equi ty (i.e. $K_d < K_e$).
c. Cost of equity and cost of debt remain constant.
d. The use of the debt does not change the risk perception of investors.
e. Net operating income remains constant.
f. Overall cost of capital decreases as leverage increases (Bhattarai, 2006: 343).

Net income approach suggests that, the existing optimal capital structure. It is that the Firm can increase its value or lower the overall cost of capital by increasing the Proportion of debt in the capital structure.

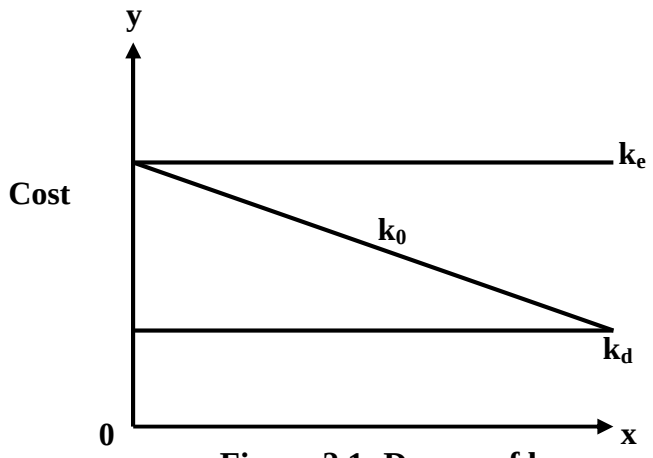



**Figure 2.1: Degree of leverage**

### 2.1.3.2 Net Operating Income Approach

This approach is opposite to the net income approach. Net operating income approach is an irrelevant theory of capital structure. This theory assumes that the capital structure (proposition of debt and equity) is irrelevant to the value of the firm and the overall cost of the capital. Under this approach, net operating income is capitalized at an overall capitalization rate to obtain the total market value of the firm. The market value of the debt, then, it deducted from the total market value to obtain the market value of the stock.

**Assumption of net operating approach**

The following are the assumptions of net operating approach.

a. The overall cost of capital remains constant.
b. The cost of debt remains constant.
c. Cost of debt is less than cost of equity (kd < ke).
d. The required return on equity increases linearly with an increase in debt ratio.
e. Total operating profit remains constant.

Any changes in leverage with not lead to any changes in the total value of the firm the market price of a share as well as the overall cost of capital remain constant. According to the net operating income approach, net operating income approach is capitalized at an overall capitalization rate to calculate the total market value of the firm to obtain market value of the equity. Note that the overall cost of capitalization rate and cost of debt remain constant but the cost of equity increases linearly with leverage.

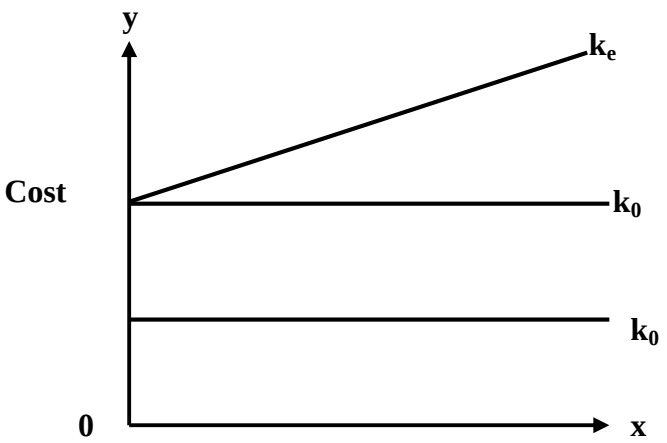


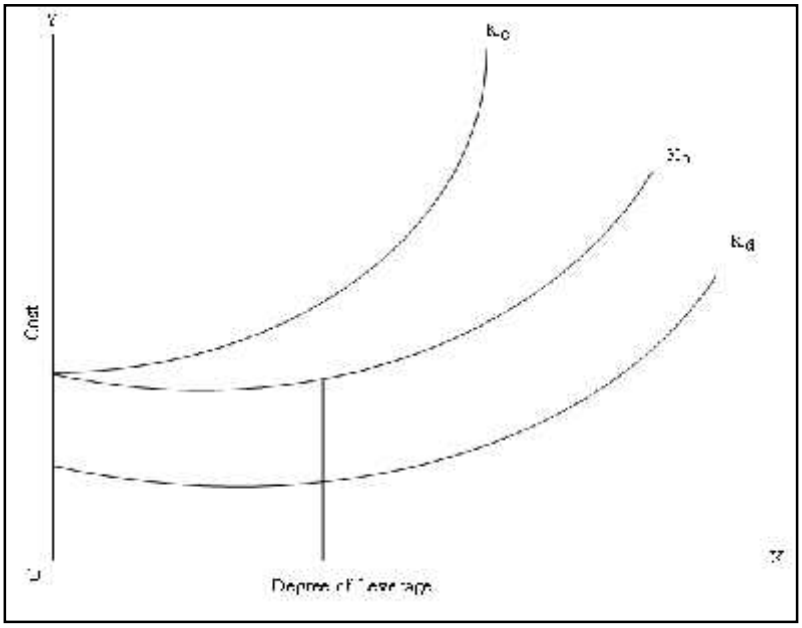

**Figure 2.2: Degree of leverage**

In above figure 2.2 degree of leverage is plotted along the horizontal axis and cost of capital figure on the vertical axis. It shows that $k_o$ and $k_d$ are constant and $k_e$ increase with leverage continuously. As the average cost of capital is constant, this approach implies that there is not any unique optional capital structure (Bhattarai, 2006: 345).

#### 2.1.3.3 Traditional Approach

This approach assumes the capital structure as relevant matter for the value and cost of capital of the firm. It takes some features of both net income and net operating income approach. This approach strikes a balance between the two different approaches net income and net operating income. Therefore, it is also known as the intermediate approach. It resembles the net income approach in arguing that cost of the capital and total value of the firm are not independent of the capital structure. However, it does not subscribe to the view of approach that value of a firm necessary increase for all the degree of leverage. In one respect, it shares a feature with the NOI approach that beyond a certain degree of leverage, the overall cost increases leading to a decrease in the total value of the firm. According to this approach, there is an optimal capital structure therefore the firm can increase the total value of the firm through the wise use of leverage. The firm initially can lower its overall its overall cost of capital through the use of cheapest cost debt and raise its total value through the use of cheapest cost debt and raise its total value through leverage. But the increase in leverage increase in leverages the risk to the holders and the debt holders demand high interest rate as a result the overall cost of capital also increases.

**Figure 2.3: Degree of Leverage**




At the overall cost of capital declines with increase is debt ratio because the rise in $k_e$ does not entirely offset the use of cheaper debt funds. As a result, the weighted average cost of capital, $k_o$, decline with moderate use of leverage. After a point, however, the increase in $k_e$ more than offsets the use of cheaper debt funds in the capital structure, and $k_o$ begins to rise. The rise in $k_o$ is supported further one $k_d$ begin to rise. The optimal capital structure is the point at which $k_o$ bottoms out. In the figure, this optimal capital structure is the point at which $k_o$ bottoms out. In the figure, this optimal capital structure is point x. thus, the traditional position implies that the cost of capital is not independent of the capital structure of the firm and that there is an optimal capital structure (Bhattarai, 2006: 346).

### 2.1.3.4 Modigliani- Millar Position

Capital structure without corporate tax (Bhattarai, 2006: 347) in 1958, two prominent financial researchers, Franco Modigllliani and Merton Miler (MM), showed that, under certain assumptions, a firms overall cost of capital, and therefore, its value, is independent of the capital structure. This approach assumed that:

a. There is a perfect capital market.

b. There are no transaction costs of buying and selling securities.

c. A sufficient number of buyer and sellers exit in the market; so no single Investor can have a significant influence on security prices.

d. Relevant information is readily available to all investors and is cost-free to obtain.

e. All investors can borrow or lead at the same rate.

f. All investor are rational and have homogeneous expectations of a firm's earnings.

g. All firms are homogeneous in riskiness.

h. There are no personal or corporate taxes.

i. All the cash flow are perpetuities that are all firms expect zero growth.

j. EBIT and bonds are perpetual.

In the no-tax MM case, the case of debt and the overall cost of capital are constant regardless of a firm's financial leverage position, measured as the firm's debt to equity ratio. As a firm increases its relative debt level, the cost of equity capital increases; reflecting the higher return requirement of stockholder due to the increase risk imposed by additional debt. The increase cost of equity capital exactly offsets the benefit of the lower cost of capital structure.

### 2.1.4 Factor Affecting Capital Structure

The following factors affect the capital structure.

a. **Cost of capital:** The impact of financing decisions on the overall cost of capital should be evaluated and the criteria should be to minimize the overall cost of capital or to maximize the value of the firm.

b. **Assets structure:** Firms whose assets are suitable as securities for loans tend to use debt heavily. Borrowed capital should not exceed a reasonable percentage of fixed assets.

c. **Flexibility:** The Company's desire for flexibility in future financing decision also affects the capital structure of the company. Therefore, the company should compare the benefits and cost of attending the desired degree of flexibility and balance then properly.

d. **Control:** If management has voting control over the company and is not in a position to buy any more stock, debt, may be a choice for new financing. On the other hand, management group that is not concerned about voting control may decide to use equity rather than debt.
e. **Profitability:** The firms with very high rate of return on investment use relatively little debt. Their rate of return enables them to do most of their financing with retained earnings.
f. **Taxes:** Interest is deductible expenses while divided are not deductible. Hence the higher a firm's tax rate, the greater is the advantage is using debt.
g. **Interest rate:** This affects the choice of securities to be offered to investors.
h. High interest rate makes financing costly, when fund are obtained easily and cheaply. There is greater attitude for choice of types of security to be used.
i. **Operating leverage:** The Company with a high level of earnings before interest and taxes can make a profitable use the high degree of leverage to increase return on the shareholder's equity.
j. **Floatation costs:** Floatation cost is incurred only when the funds are raised.
k. The cost of floating a debt is less than cost of floating and equity issue. This may encourage a company to use debt than issue equity shares.
l. **Market condition:** conditions in the stock and bonds market undergo both long and short-term changes, which can have an important bearing on a firm's optimum capital structure.
m. **Growth rate:** Faster growing firm's must rely more heavily one external capital. Other factors are stability of sales, cash flow ability of a company, nature of industry and capital requirements etc (Pandey; 1999: 719).

### 2.1.5 Optimum Capital Structure

The overall cost of capital is minimized; theoretically at least, when the firm reaches its optimum capital structure. The optimum capital structure strikes a bal-

ance between the risk and returns and thus maximizes the price of the price of the stock**.**" Optimum capital structure can be properly defined as that combination of debt and equity that attains the stated managerial goals maximization of the firm's market value, and which minimizes the firm's cost of capital, As the existence of an optimum capital structure implies the simultaneous optimization of both the cost of capital and the firm's market value, occupies a central position in the theory of financial management"(Phillippatos; 1974: 237)." An optimum capital structure would be obtained at the combination of debt and equity that maximizes the total value of the firm (value of shares plus value of debt) or minimizes the weighted average cost of capital" (Panday, 1999: 277).

a. To maximize return on equity capital
b. To minimize cost of capital
c. To minimize risk
d. To increase flexibility
e. To maintain control power
f. To employ high grade security

### 2.1.6 Capital Structure Decision

The determination of capital structure is not concerned only with value, return and cost but in practice, it involves additional considerations. Attitudes of managers with regard to financing decisions are quite often influenced by their desire; not to lose control; but to maintain operating flexibility and to have convenient and cheaper means of raising funds. The most important considerations are:

- Concern about dilution of control
- Desire to maintain operating flexibility
- Ease of marketing capital inexpensively
- Capacity for economics of scale, and
- Agency costs (Bhattarai, 2006: 4).

## 2.2 Review of Journals and Articles

This section is devoted to review of important empirical works, concerning capital structure and cost of capital since 1958 till 2005. There are numerous studies in capital structure. So, it is out of the scope of this study to survey and review all the empirical work extensively and give here in detail. Therefore, some important studies and their findings are presented. In this section, review will be made on the foreign studies including Indian studies. The review is undertaken in four subsections. Section I focuses on the review of empirical works carried up to 1960s with their major findings. The second section deals with the review of studies during 1970s. Third section is devoted to review of studies during 1980s and finally fourth section deals with studies during 1990s respectively.

### (i) Review of Empirical Works (up to 1970s)

**Modigliani and Miller (1958),** in their first study, they used the previous work of "Allen and Smith" in support of their independence hypothesis. In the first part of their work, MM tested their proposition I the cost of capital is irrelevant to the firm's capital structure, by correlating after tax cost of capital, with leverage, B\V. They found that the correlation coefficient is statically in significant and position in sign. The regression line does not sauciest a curvilinear,'u' shaped cost of capital key of traditional view, and then the data are shown in scatter diagram. In the second part of their study, they tested their proportion II, the expected yield on common shares, is a linear function of debt to equity ratio. The second part of their study is consistent with their views, i.e. if the cost of borrowed funds increases, the cost of equity will decline to offset this increase.

**Modigliani and Miller (1963),** were conducted the second study in 1963 with correcting their original hypothesis for corporate taxes and expected cost of capital to be affected by leverage for its tax advantages. They therefore wanted to test whether leverage had tax advantages or not. For this, they conducted the mathematical analysis regarding the effect of leverage and other variables only because of the tax advantage involved.

**Barge (1963),** tested the same hypothesis. For the study purpose, he utilized cross section data from three different industries-61 rail road industries, 63 departmental store companies and 34 cement industries. For the railroad industries, he performed both yield as well as the average cost of capital test. The average cost of capital was computed by dividing the three year average income by the average total market value. He uses the ratio of long term debt to permanent capital, at book value as the measure of financial structure. The result obtained from the study suggested that the average cost of capital first tends to decline and them tends to rise as the debt capital increase in the capital structure. In the department store study, he computed the leverage in the same manner as the rail road study. Result obtained from the support to the traditional view. Barges final test was on cement industry. In this study, variables were estimated in the same manner as in the case of departmental store are results obtained from this study again concluded that the traditional view has supported.

**Weston (1963),** the research work done by Weston is ‘A Test of Cost of Capital Proposition'. He made some important improvement in the cost of capital model. He included firm size and growth as additional explanatory variables in his model.

He found the regression co-efficient of leverage to be positive and significant, when he used MM model. However, when the multiple regressions were run, he found that the correlation coefficient is significant and the regression coefficient is negative and significant. When the influence of growth is isolated, leverage is found to be negatively correlated with the cost of capital. He concluded that the apparent lack of influence of leverage on the overall cost of capital observed by MM was due to the negative correlation of leverage with earning growth. Weston also tested MM proposition II. When he used the MM model, his results were found to be consistent with their results i.e. cost of equity is the linear function of debt equity ratio.

**Wipper (1966),** Wiper study is related to test the empirical relationship between 'financial structure and value of the firm'. He tried to eliminate the principle prob-

lem of empirical study on the leverage and attempted to offer what were hoped to be more fruitful alternatives in determining the relationship between leverage and cost of capital. He found that shareholder's wealth can be enhanced by judicious use of debt financing.

**Sharma and Rao (1967),** tested the MM hypothesis that after allowing for the tax advantage from the interest paid on debt the value of a firm is independent its capital structure on the data of 30 engineering companies from Indian engineering industry. In this cross- sectional study for the year 1963, 1964 and 1865 they concluded that debt has non tax advantages and investors prefer corporate to personal leverage. So, it can be concluded that value of a firm rises up to leverage rate considered prudent. They found the co-efficient of debt variables to be more than the corporate income tax. They introduced debt as a separate independent variable. They used two stages least square as a method of arriving at the true expected future earnings.

**Peterson (1969),** in his study of manufacture firms showed the evidences contrary to the traditional view, on the relation between risk measured by the coefficient of variation of rate of return of total capital over the period of 1947-56 and leverage measured by the ratio of senior to junior capital at book value, then the ratio of senior to junior capital at market value and finally by the ratio of fixed charges to earning power.

**(ii) Review of Empirical Works (1970-1980s)**

**Rao and Lintznberges(1970),** were conducted the study of the effect of capital structure on the cost of capital in a less developed and less efficient capital market (India) and in a highly developed and efficient capital market (United States). They found that the results for the American utilities are consistent to the MM proposition that except for the advantages of debt financing, the cost of capital is independent of capital structure, and the results supported that the MM hypothesis that investors are indifferent for the firm's dividend policy. In case of Indian utilities, the results are inconsistent to the MM approach and the traditional belief, the

judicious use of financial leverage will lower the firm's cost of capital and investors have a preference for current dividends. In conclusion, they contended that the MM approach after allowing for the tax advantage of debt, the firm's cost of capital is independent of capital structure does not appear to be application in the case of developing economy.

**Davenport (1971),** in his study used the British data of three unrelated industries chemical, food and metal manufacturing industries. They had concluded that the results of his study did not support the MM contention, that the overall cost of capital is independent of the proportion of debt and preference share in the capital structure of the firm. They supported the traditional view of cost of capital and leverage because his result shows the u-shaped cost of capital schedule with respect to leverage.

**Hamada (1972),** provided the evidences that support of the MM hypothesis. Lev and Pekelman (1975) tested the validity of multi period adjusted model and concluded that Similarly, Kim et. al. (1979) suggested that weak evidence supports to the Clientele hypothesis of miller.Schwartz and Aronson (1966), Remmers et.al. (1974) showed that industrial influence is not a significant determinant of financial structure in the USA, Norway and Netherlands. Scott (1972) conversely provided the evidence in the support of significant industrial influence on capital structure and suggested that firm in different industries have different financial structure. Scott and Martin (1975) also came to the same type of conclusions. Remembers et. al. (1979) also bolstered evidence for the significant industrial influence on financial structure in the Japanese and French cases.

**Rao and Rao (1975),** found the negligible positive impact of corporate income tax on corporate debt policy of manufacturing sector in India. Mishra(1978) showed that the evidence in favor of the tax avoidance hypothesis for sugar, Tobacco, trading Industries and Aggregate Corporate Sector of India. Chakarborty (1975) examined the effect of firm's characteristics on capital structure and found that negative association of debt and equity ratio of leverage, retained earnings, profitability

scaled by capital employed and corporate tax and positive association with size, profitability scaled by sales and capital intensiveness measured by gross fixed assets to sales. Rao (1979) found the adverse effect of profitability on debt equity ratio. Pandey (1979) observed the adverse relationship between capital structure and cost of equity.

**Pandey (1978),** has tried to test the MM approach in the developing economy with taking the sample from four different utilities cotton, chemicals, engineering and electricity from Indian marker. He made some improvement in the model derived by MM and used multiple regression equation for the year 1968, 1969and 1970 for the pooled data of the three cross-section years. The improvement was made on the measurement of leverage and added earning variability and liquidity as risk measure variable in the regression equation. He used two types of leverage, the debt to total capital ratio, and the debt to equity ratio the two ratios were measured with or without preference share capital in the debt portion. Both leverage were done on book value and included short term loan as part of leverage.

**(iii) Review of Empirical Works (1980- 1990s)**

**Barnea et al. (1981),** identified three problems that occur because of debt financing. First is the stockholders incentive to accept sub-optimal and high-risk projects, which transfer wealth from bond holders. Second, the presence of debt in capital structure causes the firm to forgo any investment with positive net market value being lower than the debt value. The third is the bankruptcy costs where bankruptcy probability increases with company might not be able to generate profits to pay back the interest and the loans.

**Pandey's (1981),** study is concerned with the test of relationship between the cost of capital and leverage, effect of leverage, Cost equity and, effect of tax deductibility on cost of capital in Indian context. In the cross sectional analysis of 131 observations drawn from Cotton, Chemical, Engineering and Electricity industries for the years 1986, 1969 and 1970, he found that the conclusion of MM independent hypothesis does not hold reliable conclusion specially in the context of India.

Matta (1984) found the negative relationship between debt equity ratio and growth rate. Garg (1988) suggested that there existed the relationship between business risk and debt equity ratio. Pandey (1904) did the attitude survey of the practicing managers of 30 Indian companies and drew the conclusion that Indian practicing manager have the concept of optimal capital structure and it should be maintained by every company.

**Bawen et.al. (1982), Kester (1986) and Breadley et.al. (1989),** studied in industrial influences on capital structure and found that the statistically significant industrial influences on financial structure. They have documented the leverage ratio of specific industries. Their results are on broad agreement and showed that drugs instruments, electronics and food industries have consistently low leverage paper, textile mill products, still, airlines and cement industries have consistently high leverage. Further, Breadly et.al. (1984) concluded that regulated industries are most highly levered firms. Several studies under the framework of agency cost and asymmetric information modes are carried out on the specific characteristics of industries and firms that determine the leverage ratio and provide the guidelines in formulation of their financing policy. The result showed that the study of 1980s do not agree each other in respect to their findings except in the use of the relationship established between the fixed assets and leverage. Bradely et.al. (1984) Kester(1986), Titman and Wessels (19880, Wedig (1988) Friend and Lang (1988) and friend and Hasbruck(1988) concluded that the increase impact of the volatility of earnings on leverage. Auebach (1985) and Kim Sorensen (1986) found that the positive relationship between the volatility and leverage ratio. In general, the results of the studies in regard to the relationship between the volatility and leverage are inconsistent with the agency cost theory. This theory contented that high variance firm has lower agency cost of debt and hence higher financial leverage.

**Mayer (1984),** pointed out that financial economists have not hesitated to give advice on capital structure, even though how firm actually chase their capital structure remains a puzzle as the theories developed did not seem to explain fully actual financing behavior. Mayer states that internal financing is preferred more than ex-

ternal financing. This is due to the transaction (flotation) costs and the resulting agency costs of issuing new securities. When retained earnings are not sufficient, debt financing is the next choice before considering offering new stocks. The reason is that the flotation costs of debt issuing are lower than those of equity issuing.

**Auerbach (1985),** argues that beverage is inversely related to the growth rate because the tax deductibility of interest payments is less valuable to fast growing firms since they usually have more non-debt tax shields.

**Shrestha (1985),** His study on "analysis of capital structure in selected public enterprises" argue that most of public enterprises have confusing capital structure since the corporation are not guided by any objectives based financial plan and policies. The corporations are using least combination of debt with equity to avoid financial burden as far as possible. According to Mr. Shrestha, the debt-equity ratio should neither be highly levered to create too much financial obligations that lie beyond capacity to meet not should be much lower low levered to infuse operational strategy to bypass responsibilities without performance. He used ratio analysis as the tool of analysis and found the selected public enterprises. He further added that in many instances aphorism becomes the basis of capital structure and most of them want to eliminate debt if possible to relieve financial obligations.

**(iv) Review of Empirical Works (1990 to Early 2000s)**

**Mackin-Mason (1990),** studied the tax effect on corporate financing decisions. The study provided evidence of substantial tax effect on the choice between debt & equity. He concluded that changes in the marginal tax rate for any firm should affect financing decisions. when already exhausted ( with loss carry forwards) or with a high probability of facing a zero tax rate ,a firm with high tax shield is less likely to finance with debt .the reason is that tax shields lower the effective marginal tax rate on interest deduction.

**Harris and Ravi (1991),** pointed that numbers attempts to explain capital structure have proved to be in conclusive. The capital structure decision is ever more complicated when it is examined in an international context; particularly in devel-

oping countries where markets are characterized by controls and institutional constraints.

**Thies and Klock (1992),** found results that pertain to long term debt and common equity. The findings also refute claims that there is no cross sectional relationship between variability and capital structure and suggests that there are differences in the utilization of leverage across time and firms.

**Pradhan (1994),** on his research financial management and practices in Nepal in 1992. The survey mainly dealt with financial function, sources and types of financing, financing decisions involving debt effect of change in taxes on capital structure, financial distress dealing with banks and dividend policy. The major findings of study connected with financial management are given as:

1. Banks and retained earnings are the two most widely used financing sources.
2. Generally, there is no definite time to borrow the issues stocks. That is majorities of respondents are unable to predict when interest rate will low or go up are unable to predict when the stock will go down or up.
3. The enterprises have a definite performance for bank loans at a lower level of debts.
4. Most enterprises do not borrow from one bank only and they do switch between banks which ever offer best interest rates.
5. Most enterprises find that banks are flexible in interest rate and convenience. To sum up it can be said that out of numerous studies on the capital market of Nepal. This study is established itself as a milestone and an outstanding one.

### 2.3 Review of Thesis

Under this section, various thesis related to this study have been reviewed. There are as follows:

**Parsai (1999),** in his MBA thesis "*A Study on Capital Structure of Nepal Bank limited."* in this research has some issues, to accept deposits with or without inter-

est under saving and fixed other, deposits schemes, to provide loans taking the securities such as government securities, movable property, company shares or debenture, bill of exchange and promissory notes. This study's of specific objective are to analysis of debt and equity, trend of total assets and total liabilities, relationship between deposit and investment. To analysis the return in ratio to capital employed, relationship between deposit and net profit. Describe the structure and trend of income and expenditure. He has use of various financial and statistical tools such as this study found that the major contribution to the total liabilities is deposit, followed by net worth and borrowing from other banks. The major proportion of the total assets is: bills loans and advances followed by investment in share and debenture, cash and other bank balance and others assets. During this study total assets and liabilities is in increasing trend. It also increasing trend of total deposit and investment. Total deposit and total assets, net profit of other bank is highly fluctuating. Its EPS is increasing trend. There is significant relationship them total assets and net profit, total investment, total deposit and total investment but there is not significant relationship between net worth and net profit. Total income and total expenses are not under control of the bank. The increasing rate of total income and total expenditure are highly fluctuating. He has suggested total income and total expenditure, total deposit and total investment must be control by the bank. The bank needs to improve market price of the share reduce its expenses and control fluctuation in the earning per share.

**Rajlawat (1999),** In his MBA thesis, paper that, "*A Study on Capital Structure of Necon Air Ltd."* This specific objective are; growth and polices of NAL, to examine the financial position, review of various study relating topic and analysis of capital structure of the company. He has used some of financial and statistical tools such as: ratio analysis, correlation co-efficient. Time series, percentage, graph etc. From this study focus on debt and equity of the company and its result of debt and equity ratio is higher than needed. It means higher the debt cerates higher the risk. Which is dangerous the creditor point of view. On other hand higher debt capital is serious implication form the firm's point of view. In this

condition the capital structure would lead to inflexibility in the operation of the firms as creditor would exercise pressure and interfere in management. Mrs. Rajlawat suggest that Necon air Ltd. should decrease its debt capital drastically as possible as it can on the ratio of to 2:1 is the best ratio for optimal capital structure. That is why the company should reduce its heavy burden of interest payment.

**Parajuli (2001),** in his master level thesis, "*Capital Ownership Structure and its Impact on Profitability of Nepal Lever Ltd*" the main objective of this study is to evaluate the capital structure and specific objective are: to study the relationship of debt and equity shareholder, EBIT and interest payment. To analyze the return on capital in relation to capital employed. He has used some of the statistical and financial tools such as ratio analysis, percentage, correlation coefficient, index etc. He found that its long -term debt seems very high at the time of establishment. The debt equity ratio in term of long-term debt and shareholder equity has been decreasing trend. His shows low degree of positive relationship between total debt and shareholder equity. There is not significant between debt and equity. The capital structure is not optimum. In order to optimum capital structure, there must be significant relationship between debt and equity. The debt to total capital ratio computed in term of shareholder equity to total assets shows the increasing trend, which means the company, has been increasing equity fund in raising the assets. The relationship between interest payment and EBIT is not significant. He suggest from the Du point analysis, it is seen that the assets use efficiency but profit margin and equity multiplies is in decreasing tend. Which caused continuous decrease in ROE? Now it appears that ROE could be levered up by increasing amount of debt in the firm. In this study shows that some of fiscal year, there is no long -term debt. He recommended the maintainers of a proper capital structure by including long –term debt.

**Baidya (2004),** his MBA research on title of "*Capital Structure Management of Manufacturing Companies Listed in NEPSE"*. Under this study, the main objective is to analyze, evaluate and interpret their capital structure employed by the selected organization but specific objective are: to examine the capital structure. To

analyze cost of capital and return on capital in relation to the employed, debt servicing capacity of these company. He can be used financial and statistical tools are ratio and percentage. He found the average DOL is negative and positive. Negative shows the inefficient earning capacity of the firm which try to increase sales volume. The average ratio between shareholder equity and total assets for Arun vanaspati udhoyog and Jyoti spinning mills is negative. It shows the negative value of shareholder equity. This indicates that all the assets have been produced out of debt capital, which is not good for any manufacturing company. In this study shows EPS, P/E ratio and Book value per share of Nepal lever limited is higher than other company. The higher price ratio indicates the greater confidence of investors with its future. Book value per share is negative as companies have negative net worth in an average. Cost of equity is also higher of Nepal level Ltd. in these selected companies. The use of less costly debt fund increased the risk to the shareholders. This causes the equity capitalization rate to increase. At last, he suggests increase the equity proportion financing its assets to be a safe mode against liquidation. The debt amount is very huge and that is a need to reduce the debt capital. All the companies should try to streamline their sales. To earn high amount of profit from the sales revenue by increasing operating efficiency, most of Nepalese manufacturing companies are losses. This reason is high operating cost of production, unskilled work force, over staffing, misuses of facilities etc. This causes should be indicate by the management.

**Subedi (2005),** in his MBA thesis *"A Study on Capital Structure of Nabil Bank Ltd.*" In this studies specific objective were analyze the capital of Nabil Bank Ltd. to show financial position, examine the different profitability ratio and show overall trend analysis. Under this study used various tools such as graph, percentage, diagram, mean, standard deviation and co-variance. He found and concluded that total liabilities and capital item, show 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 key determent factor to capital structure. Debt and equity are properly mixed good capital structure is formed. Price earn-

ings ratio reflects the price currently reported EPS. It measures investor's expectations and the market appraised of the performance of a firm. This study suggests that, the 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.

**Mishra (2005),** in his analytical, study *"A Study of Capital Structure Management of Selected Manufacturing Companies."* This study has specific objective are analyze cost of capital and return on capital in relation of the employed. To examine the capital structure and debt servicing capacity of the company. He used analytical tools ratio analysis, mean, standard deviation, coefficient of variance, correlation coefficient. This study find average DOL is negative which shows the inefficient earning capacity of the firm. The average DFL is less than one. There is no any consistency in the DOL and DFL for the same types of manufacturing companies. Debt equity and interest coverage ratio for Jyoti spinning mills Ltd. is negative as the company has negative equity. Interest coverage ratio is negative, its show that the company's earnings are not sufficient even to repay their interest. Due to the use of lower amount of debt, the profit margin for the Jyoti spinning shows negative, which for Jyoti spinning is negative which indicate that the assets of the company are not generating profit. The higher P/E ratio indicates greater confidence of investor with its future. Average overall cost of capital and cost of equity of Jyoti spinning is negative and other Nepal lever Ltd. and Bottlers Nepal are positive. Correlation coefficient of debt and shareholder's equity for Jyoti spinning negative correlation but Nepal level and Bottlers Nepal are positive correlation. Correlation coefficient between EBIT and net profit for Jyoti spinning mills and Nepal liver Ltd. are negative correlation but Bottlers Nepal Ltd. is positive correlation. Correlation between EBT and net profit for Jyoti spinning mills and Nepal liver Ltd is positive correlation and Bottlers Nepal Ltd shows negative correlation. He concluded that the company's policy to increase current liabilities by

replacing long tern loan is not according to the principle of capital structure management. The use of debt would save the tax if they would be earning but in reality of Jyoti spiriting mills. There is no earning so there is not saving. His recommendation was increase in current liabilities would affect the liquidity aspect of the company. Short-term borrowing is more risky because short-term interest rates are more littlie than longer rates. Therefore, there is maintaining proper capital structure be including long-term debt. Interest rates are more littlie than longer rates. Therefore, there is maintaining proper capital structure be including long-term debt.

**Pradhan (2007),** in her study *"A comparative analysis of capital structure management between Nepal Bangladesh Bank Ltd. and Himalayan Bank Ltd."* cover only the latest six Fiscal Years from 1999/2000 to 2004/2005. She tries to explain competitive position and the situation of the selected banks. She analyzes the combination of capital with long and short-term debt and equity capital. **S**he uses different tools to analyze and compare these banks. She used different tools.

**Accounting Tools:** Different ratios have been used to measure the performance of the sampled banks.

**The statistical tools:** different statistical tools are applied in this study are, Expected rate of return, Standard Deviation, Coefficient of Variation, Karl Pearson's Coefficient of Correlation and Student's t-test. As this research is related to financial subject matter, statistical tools and formula are expressed in financial terms except correlation coefficient, coefficient of (multiple) determination ($r^2$) and Student's t-test. Due to the most use of average and standard deviation in financial sector also the researcher has used the financial notation for these statistical tools.

Her findings can be summarized as follows:

- From the study bank are found to be highly levered. The banks are using higher amount of debt. The average debt equity ratio is large and she recommendation to reduces it as possible.

- The interest coverage ratio during the study period was positive for both bank and both banks are able to pay the interest on deposit. HBL is stronger than NBBL.
- In case of average ROA and ROE, EPS; HBL has higher ratio than NBBL.
- On average overall capitalization rate of HBL is higher than NBBL. The $K_o$ of banks is in quite good position even though the rate of return in last 6 year.
- The correlation between overall capitalization rate and debt to equity ratio is - 0.98 and 0.99, which indicate NBBL is highly negative relationship and HBL is Positive relationship.
- The operating profits to joint venture bank have gone up, so have the provision for loan loss. In short, the banking sector in Nepal is somehow doing well even though it has to face a number of challenges during the past few years.

**Dhakal (2008),** in his study *"A study on capital structure management of selected commercial banks (with special reference to Himalayan Bank, Nepal SBI Bank, Everest Bank And Nepal Investment Bank Ltd.)* analysis the capital structure of different five year period. He tries to explain competitive position and the situation of the selected banks. He analyzes the combination of capital with long and short term debt and equity capital. He uses different tools to analyze different financial and statistical tools are used to analyze and compare these banks. He used different financial tools such as: debt equity ratio, Debt Ratio, interest coverage ratio, price earnings ratio, return on assets, return on shareholders' equity, and he find capitalization rate. He used different statistical tools such as: mean, standard deviation, correlation coefficient, probable of error of correlation, variance and regression analysis. He uses the different ratios and present different table and chart. His findings can be summarized as follows:

- From the study bank are found to be highly levered. The companies' financial mix accounts a higher proportion of debt and it is increasing every year. Most of the banks cannot manage the current assets.

- The interest coverage ratio during the study period was positive for all selected bank.
- In case of ROA and ROE, EBL has higher ratio than any other banks. This indicated the EBL best bank among the selected banks.
- The average EPS of EBL and HBL higher than other selected banks and EPS of EBL is fund to be in increasing trend and EPS of other banks are fluctuating during the study period.
- The cost of banks are increasing, the main cause of cost increase may unskilled manpower, overstaffing, unsystematic arranged of material, level of unnecessary and expenses is high and misuse of the facilities and resources.
- The correlation coefficient of the variable of selected bank for the statistical analysis is found positive to each other. The coefficients are all statistically significant in more than average banks. A positive correlation means both of the variables are moving toward the same direction.

**Thapa (2010),** has conducted a research entitled "Analysis of Capital Structure of Joint Venture Banks in Nepal." The major objective of the study was to analyze capital structure management of selected Joint Venture Banks. To achieve the main objective, following specific objectives were set out for the study:

a. To examine the trend in financial leverage of selected enterprises.
b. To determine the structure of equation of capitalization rates on overall capitalization rates.
c. To analyze the relation of the capital structure and cost of capital of selected Joint Venture Banks.
d. To evaluate the comparative capital structure of selected Joint Venture Banks.
e. To evaluate the relation between profitability position and capital structure of the banks under study.

This study was mainly based on the secondary data collected from the different published sources. In additional to the published data, some information were col-

lected from the visit of the concerned banks, conversation with the employees, and the observation of concerned banks, telephonic inquirers, personal visit, inquires by e-mail etc. the major sources of secondary data are: Brochure of concerned banks, published reports from Security Board, economic surveys, and websites of concerned banks. From the presentation and analysis of the data, the following findings are down out.

- The highest Coefficient of Variation is 3.10 for SCBL and the lowest is 0.69 for SBI Bank.
- Standard deviation of HBL is 0.10, which is lowest than other two banks and SCBL has highest standard deviation, which is 0.31, the highest Coefficient of Variation is 13.33 for SBI Bank and the lowest is 5.05 for HBL.
- The average DFL for SBI Bank is -01.08 times. The highest Coefficient of Variation is 321.29 for SBI Bank and the lowest is 115.72 for SCBL.
- The cost of overall capital for HBL has 3.25 on as average of overall capitalization rate. SCBL's overall capitalization rate is 3.12 in average rate, which is lower than other banks and SBI Bank has the average ratio is 3.52, which is higher than other banks.

**Sapkota (2011),** has conducted a research entitled "Capital Structure of Nabil Bank Limited." The major objectives of the study were to examine and analyze the capital structure of Nabil Bank Limited. Following were the specific objectives of the study:

- To examine the existing financial position regarding capital structure.
- To analyze the composition of Nabil Bank Limited of the mixture of debt and equity.
- To evaluate the relationship between deposit and capitalization of Nabil Bank Limited.
- To examine the different profitability ratios of Nabil Bank Limited.

This study was based on secondary data provided by Nabil Bank Limited. Data and information are collected from balance sheet of Nabil Bank Limited. There

relevant data and information were collected from different sources, mentioned in bibliography. From the analysis he has find out some findings, which are as follows:

- Share capital: Liabilities are increasing more than share capital.
- Reserve & surplus: Reserve & surplus trend is not consistently.
- Shareholders Equity: Reserve and surplus is more than paid up capital.
- Debt To Equity: Debt to equity ratio in average more than 2. It means the claim of creditors and share holders against the property of the firm.
- Debt to Capacity: The ratio must be greater than 1. In overall the interest coverage of the Nabil bank is too small to cover the debt cost.
- Capital structure position: The mix of debt and equity is in the average ratio.
- Return on total Deposit: In simply ROD is satisfactory because ratio of ROD is greater than 1.75 and the more ratios show the more earning.

# CHAPTER III

# RESEARCH METHODOLOGY

## 3.1 Introduction

Research refers to systematic and objective attempt. This is used to study a problem for the purpose of driving general principles. The invitation has been guide by previously collected information and aims to add to the body of knowledge on the subject "Research methodology is the way to solve systematically about the research problem." (Kothari 1990; 39). The chapter "The research for gaining the knowledge about method of goal methodology"(Joshi 2001; 12.13) includes research design, nature and source of data. Population and sample Data Collection and procedure and method of analyses. To accomplish the goal, this study is follows the research methodology described in this chapter.

## 3.2 Research Design

Research design is the plan structure and strategy of investigations conceived so as to obtain answer to research equations and to control variance. "A research design is purely and simply the Framework or plan for a study that guides the collection and analysis of the data" (Goes; 1989:51). The main objective of this study is to analyze and evaluate the capital structure of selected commercial Bank. This study follows the analytical and descriptive research design. To complete this study following design and format has been used. First of all information and data were collected. The important information and data were selected. Then data is arranged by using manner. After that the collected data were analyzed by using financial and statistical tools. The study focused on the evaluating capital structure of SBL, hence, the analytical and descriptive research designs have been applied.

## 3.3 Nature and Source of Data

For this study, secondary data have been used and the sources of data were as follows:

1. Annual reports of SBL
2. Bulletin and reports of NRB
3. Website of NRB (www.nrb.org.np)
4. Website of SBL (www.siddharthabank.com)
5. Various information's from "Nepal Stock Exchange Ltd.", and other reports and bulletins of the concerned organizations.

### 3.4 Data Collection Procedure

Study follows the following research methodology to achieve its basic objectives. Various historical data were used for the study of capital structure of SBL. Nature, source of data, analysis and techniques used: The data are collected, analyzed and presented in the table from as per the requirement of the study.

### 3.5 Population and Sample

There are more than two dozen commercial banks in Nepal. For this research, those listed banks serve as population. Among them only single commercial bank: SIDDHARTHA BANK has been taken into account for the study as sample in this research work. This is the best performing bank in Nepal. Their earning per share, percentage of dividend paid per equity capital, net profits are good among commercial banks. 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 it in the best position.

### 3.6 Method of Data Analysis

Data collected from different sources are in raw from and in the initial stage. As judging independently does not help much thus the data analysis are done in the following ways.

a) Data and information are collected and gathered to fulfill the research problem and objectives of the study.
b) The collected data and information were identified, classified and arranged properly.
c) Then the data and information were processed and analyzed.

d) Interpretation, recommendation and suggestion are made after analysis.

e) The data were analyzed by using different financial tools and techniques along with some statistical tools and also analyzes by diagrams wherever useful.

### 3.6.1 Financial Analysis

Financial tools are: Share capital to total liabilities ratio, Reserve and surplus to total liabilities ratio, Total deposit to total liabilities ratio, Current liabilities ratio, Borrowing to total liabilities ratio Net worth to total liabilities ratio. Financial tools are used to examine the financial performance i.e. strength and weakness of band. In this study, financial tools like ratio analysis and financial statement analysis have been used. The analysis of financial mix is performed by using ratio analysis. It's a powerful tool of financial analysis. It is used to interpret the financial statements so that the strengths and weaknesses of a firm as well as its historical performance and current financial condition can be determined. Capital structure ratio. The ratio indicates the proportion of debt and equity in financing the firm's assets. It is concerned with the long term solvency of a firm. Capital structure rations are calculated to measure the financial risk and firm's ability of using the debt for the benefit of the shareholders.

**(i) Debt to Equity ratio**

This ratio is a measure of the relative amount provided by lenders and owners. It is also known as "External internal Equity Ratio." It is calculated according to the following Formula:

$$Debt\ to\ Equity\ Ratio = \frac{\text{Amount of Debt}}{\text{Amount of Equity}}$$

This ratio indicates the cushion of ownership funds available to debt holder. It gives on idea of the amount of capital supplied to a firm by internal funds or owners an average debt to equity ratio of 1:1 is acceptable.

**(ii) Debt ratio**

The debt ratio is defined as total debt divided by total assets. It indicates to percentage of assets that are financed through debt. It is calculated as under:

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

This ratio should be 1:2 or 0.5:1. A ratio above 1:2 or 0.5:1 implies that lenders and creditors were providing more finance than ordinary shareholders and that too without expectation of a share in any surplus as compensation to creditors in extending credit. A very low ratio can cause worry to shareholders as it means company is not using debt to best advantage.

**(iii)** Interest coverage Ratio is designed to relate the interest Charge of a firm to its ability to service them. It is simply ratio of earning before tax and taxes for a particular reporting period to the amount of interest charge for the period. The reporting period here is of one year. This ratio measures the extent to which earning can decline without resultant financial embarrassment to the firm because of inability to meet annual interest cost. It means, too high or low ratio as well is unfavorable to the firms. High ratio implies that the firm is very conservative in using debt and low ratio implies that the firm is using excessive debt and does not have the ability to offer assured payment of interest to the creditors.

Thus,

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

**(iv) Earnings 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 shareholder per share.

$$EPS = \frac{\text{Net profit after tax} - \text{Pref. Divident}}{\text{Total no. of Share}}$$

**(v) Price Earning ratio (P/E Ratio)**

Price-Earning ratio indicates investor's expectation about the growth of the firm's earnings.

$$\text{P/E ratio} = \frac{\text{Market prices per share}}{\text{Earning per Share}}$$

**(vi) Return on 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 for computation of this ratio is as follows:

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

**(vii) Return on Share holder's fund or Equity (ROSE)**

This ratio is ascertained for measuring the efficiency of the investment made by the shareholders in the business on the basis of the relationship between shareholder's fund and net profit:

$$\text{ROSE} = \frac{\text{Net profit after tax}}{\text{Share holder fund}}$$

(Share holders fund=Share capital + Reserve Fund + Profit & loss)

**(viii) Net income Approach (overall capitalization Rate)**

The overall cost of capital is measured by dividing net operating income by the value of firm is the book value debt and market value of equity overall cost of capital ($K_o$).

$$\text{Ko} = \frac{\text{Earning Before Interest \& tax(EBIT)}}{\text{Total value of firm(Vo)}}$$

**(ix) Net operating income Approach (Equity Capitalization Rate)**

This approach argues that the value of the firm remains constant to the degree of leverage and equity capitalization rate tends to increase with the degree of leverage Equity capitalization Rate (Ke).

$$\text{Ke} = \frac{\text{EBIT} - \text{I}}{\text{S}} \text{ or } \frac{\text{EPS}}{\text{MVPS}}$$

### 3.6.2 Statistical Analysis

Statistical and Research cannot be separated whenever research work is carried on statistics is most to have output of the research .To achieve the objective of the study, some important statistical tools such as mean, standard deviation, coefficient of variance, of correlation, regression analysis of important variables has been used which are as follows:

**a. Arithmetic mean ( $\overline{X}$ )**

The most popular and widely used measure for representing the entire data by on value is called the mean. The value is obtained by adding together all the items and diving this total by the no of items.

$$\overline{X} = \frac{X1 + X2 + \cdots + Xn}{n} = \frac{\sum X}{n}$$

Where, $\sum X$= Sum of all values of the variables

n= No. of observation years

**b. Standard Deviation (S.D.)**

The standard deviation measures the absolute dispersion or variability of a distribution the greater the amount of dispersion or variability the greater the standard deviation the greater will be magnitude of the deviations of the values from their mean and vice versa.

$$SD = \sqrt{\frac{\sum(X - \overline{X})^2}{n}}$$

**c. Correlation Coefficient (r)**

Correlation coefficient is calculated of relationship between the deferent variables. When change in the value of one variable is accompanied by the change in value of the other two variables are said to have correlation. The study used Karl Person's correlation coefficient. The correlation coefficient between two variables x and y usually denoted by $r_{XY}$ is a numerical measure of linear relationship between them.

$$r = r_{xy} = \frac{\sum XY}{\sqrt{\sum X^2 \sum Y^2}}$$

**d. Probable Error (P.E.)**

The Probable error of the coefficient of correlation helps in interpreting its value. The probable error helps to determine reliability of computed correlation coefficient. So far, as it depends on the condition of random sampling. The probable error is defined by:

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

It can be interpreted to know whether it calculated value of is significant or not in the following way:

• If r <PE There is no evidence of correlation i.e. r is not at all significant.

• If r > 6 P.E. The existence of correlation is practically certain i.e. r is significant.

• The P.E. of correlation may be used to determine the limits with in which the population correlation coefficient lies. The limit of the population correlation is r + P.E.

# CHAPTER-IV

# DATA PRESENTATION AND ANALYSIS

## 4.1 Introduction

This chapter constitutes the most crucial part of the study. It provides mechanism for meeting the basic objectives stated earlier in the first chapter of this research. The research has followed the, methodology described in this third chapter in order to attain the objectives. Thus, application of the major variables taken into account for the purpose study are total Debt and Total Assets, , Net Profit after tax and Share holder's Equity, EBIT and Interests, Net Income and Net Operating Income approach, Coefficient of Correlation analysis of different variables of selected banks. The firm should maintain a sound capital structure to run its business operation in this competitive world. Both excessive as well as inadequate capital positions are dangerous from the firm's point of view. So, an enlightened management should, therefore, maintain right capital structure to meet its objectives. In the section capital structure are presented for the last five years.

## 4.2 Analysis of Capital Structure and Ownership

This analysis is describe the capital structure position; on the basis of the ownership and proportion of ownership of share capital.

### 4.2.1 Analysis of Capital Structure position

**Table: 4.1**

**Capital Structure position**

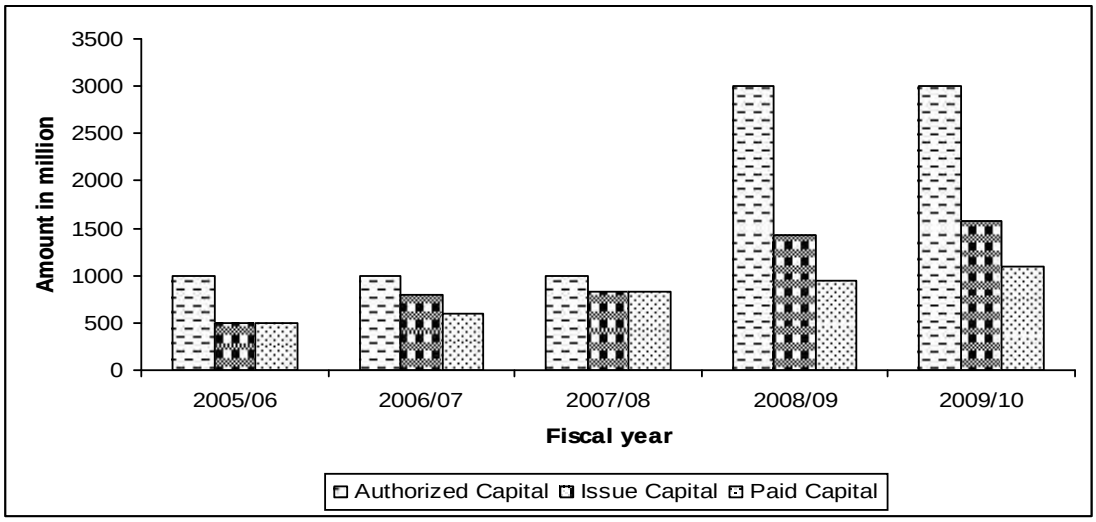
Amount in million

| **Capital** | 2005/06 | 2006/07 | 2007/08 | 2008/09 | 2009/10 |
|---|---|---|---|---|---|
| Authorized Capital | 1000 | 1000 | 1000 | 3000 | 3000 |
| Issue Capital | 500 | 800 | 828 | 1428.3 | 1571.13 |
| Paid Capital | 500 | 600 | 828 | 952.2 | 1095.03 |

*Source: Annual Report of SBL 2009/10*

**Figure 4.1**

**Capital Structure Position**




The bank commenced in 2003/04 as a commercial bank. In FY 2005/06 the bank has authorized capital is Rs 1000 million and issue capital and paid up capital is Rs 500 million, in FY 2006/07 the authorized capital is Rs 1000 million, issue capital is Rs 800 Million and paid up capital is Rs 600 million, in FY 2007/08 the authorized capital is Rs 1000 million and issue capital is Rs 828 Million and paid up capital is Rs 828 million, in FY 2008/09 the authorized capital is Rs 3000 million and issue capital is Rs 1428.3 Million and paid up capital is Rs 952.2 million. Similarly, in FY 2009/10 the authorized capital is Rs 3000 million, issued capital is Rs 1571.13 million and paid up capital is Rs 1059.03 million.

### 4.2.2 Analysis of Share Capital Ownership

**Table: 4.2**
**Share Capital Ownership**

| **Owners** | **2005/06** | **2006/07** | **2007/08** | **2008/09** | **2009/10** |
|---|---|---|---|---|---|
| Promoter | 350 | 420 | 579.6 | 485.62 | 1095.03 |
| General | 150 | 180 | 248.4 | 466.58 | 536.565 |
| **Total** | 500 | 600 | 828 | 952.2 | 1631.595 |

*Source: Annual Report of SBL 2009/10*

**Figure: 4.2**

**Share Capital Ownership**

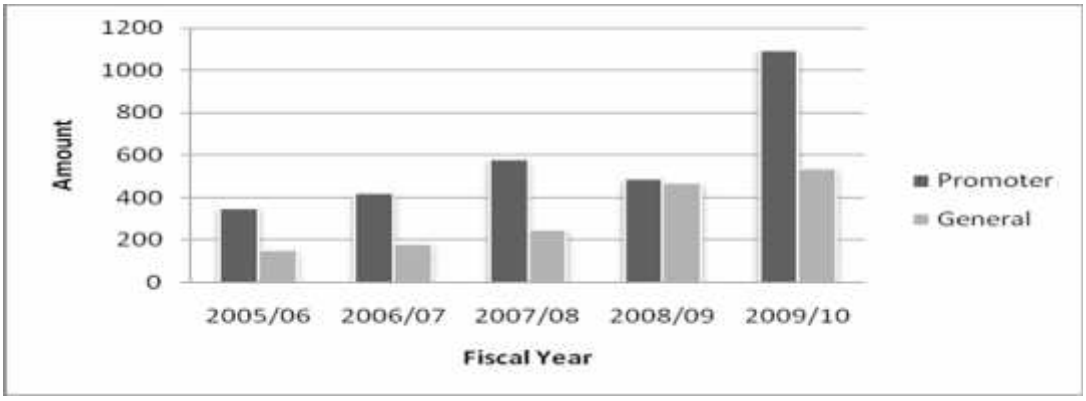


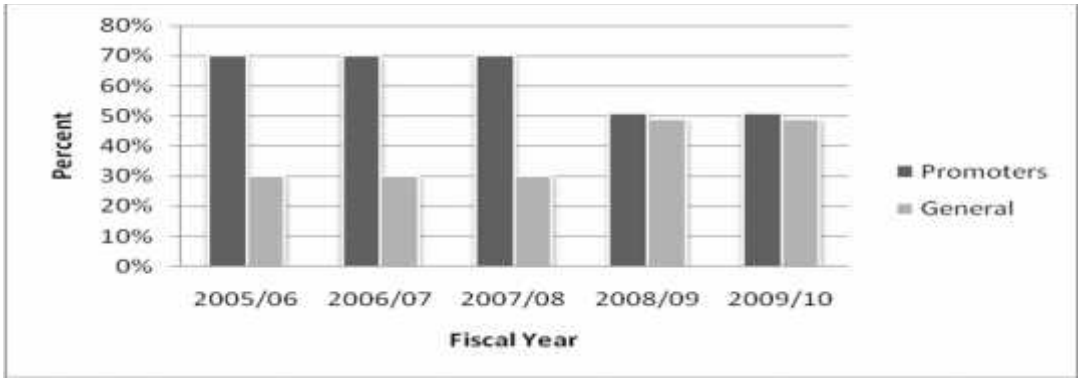

**Table: 4.3**

**Proportion of Ownership**

| **Owners** | **2005/06** | **2006/07** | **2007/08** | **2008/09** | **2009/10** |
|---|---|---|---|---|---|
| Promoters | 70% | 70% | 70% | 51% | 51% |
| General | 30% | 30% | 30% | 49% | 49% |
| **Total** | 100% | 100% | 100% | 100% | 100% |

**Figure: 4.3**

**Proportion of Ownership**




The bank uses the majorities of share from promoter. The bank issue public shareers 150 million in FY 2005/06. Then the proportion of promoter and ordinary share is 7:3. In FY 2006/07, the bank issue right share and increase the share capital to

Rs 600 million. The bank maintains the same proportion. In FY 2007/08 the bank increased the share capital to Rs 828 million. In FY 2008/09 bank increased capital to 9522 million. The proportion of promoter share and general share capital is 51 % and 49%.Similarly in fiscal year 2009/10 the proportion of promoter and general share is same i.e. 51% and 49% whereas the bank increased the share capital to Rs 1095.03 million.

### 4.2.3 Analysis of Sources of Capital

Siddhartha Bank has the following different sources of fund.

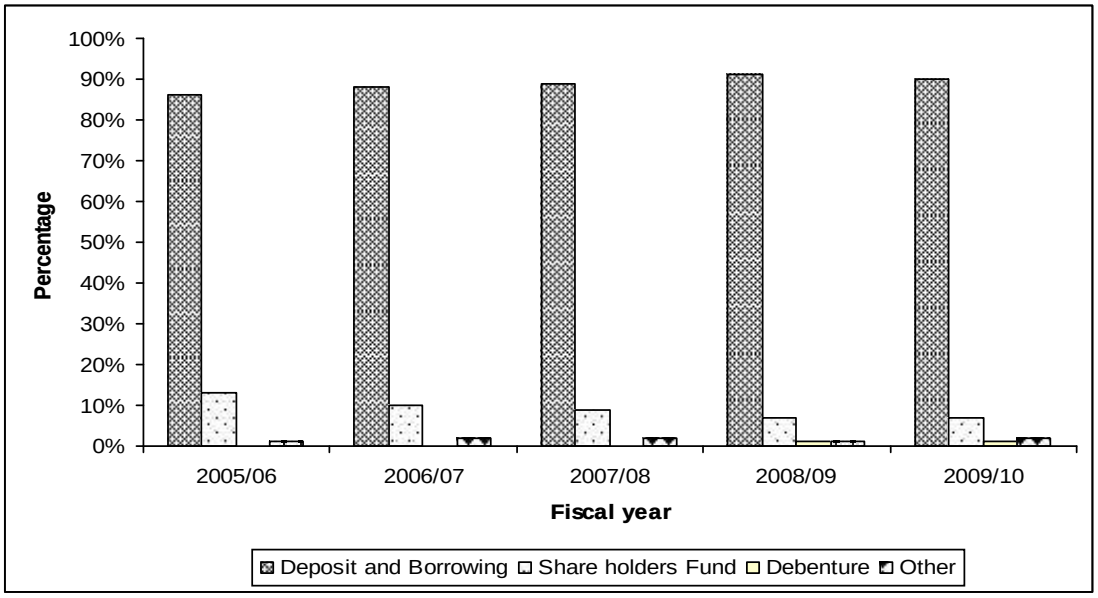
**Table: 4.4**

**Sources of Capital**

| Sources of Fund | 2005/06 | 2006/07 | 2007/08 | 2008/09 | 2009/10 |
|---|---|---|---|---|---|
| Deposit and Borrowing | 86% | 88% | 89% | 91% | 90% |
| Share holders Fund | 13% | 10% | 9% | 7% | 7% |
| Debenture | - | - | - | 1% | 1% |
| Other | 1% | 2% | 2% | 1% | 2% |
| **Total** | 100% | 100% | 100% | 100% | 100% |

**Figure: 4.4**

**Sources of Capital structure**



The bank manages the fund from different sources. They are deposit and borrowing, shareholders equity, debenture and other sources. In FY 2005/06 the bank uses the 86 percent of deposit and borrowings, 13 percent of shareholders equity, and 1 percent of other sources. In FY 2006/07 the bank uses the 88 percent of deposit and borrowings, 10 percent of shareholders equity, and 2 percent of other sources. In FY 2007/08 the bank uses the 89 percent of deposit and borrowings, 9 percent of shareholders equity, and 2 percent of other sources. In FY 2008/09 the bank uses the 91 percent of Deposit and borrowings, 7 percent of shareholders equity, and 1 percent of debenture and 1 percent from other sources, as well as in FY 2009/10 the bank use the 90 percent deposit and borrowing, 7 percent share holder's equity, 1 percent debenture and 1percent from the other sources.

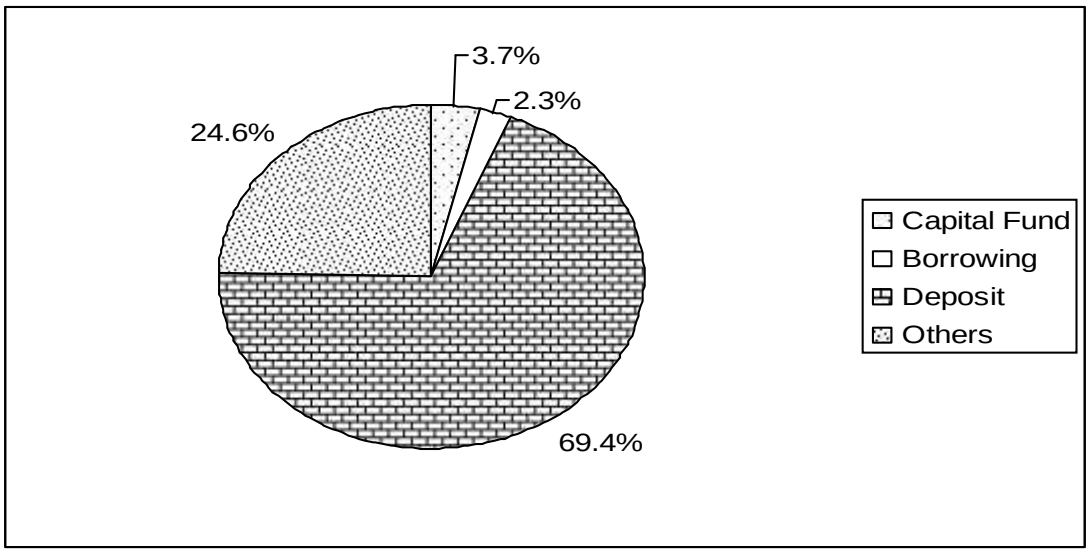
**Sources of fund of all commercial bank as on Mid- July 2010**

**Table: 4.5**

**Sources of fund of all commercial banks**

| Sources of Fund | Percent |
|---|---|
| Capital Fund | 3.7 |
| Borrowing | 2.3 |
| Deposit | 69.4 |
| Others | 24.6 |
| **Total** | **100** |

**Figure 4.5: Source of fund**



The composition of liabilities of total commercial banks shows that, the deposit has occupied the dominant share of 69.40 percent followed by capital fund 3.74 percent and borrowings 2.26 percent in the Mid - July 2009. The respective shares of deposit, capital fund and borrowings in the previous year were 75.18percent, 1.76 percent and 2.54 percent respectively.

### 4.2.4 Analysis of Share Capital

Total capital and liabilities are all items included in liabilities side of balance sheet. The commercial bank has to manage the liabilities very carefully to minimize risk and achieve desirable Profit. Commercial banks have to consider various components of liabilities in details regarding how to manage them properly. The total liabilities of commercial banks consist of their liabilities to depositor, Shareholder, lenders, and the central Bank being the lender of the last lender. The various item included in the liabilities of commercial banks are equity, reserve, borrowings, deposits, new accounts, money market liabilities, deposit account , wholesale and retail certificate of deposits , negotiable instruments. Brokered deposits, Euro dollar deposits, Interest paying liabilities, shot-term loam loans, bills payable, and other outstanding expenses. The following table shows the position of total equity Share capital of SBL.

**Table: 4.6**

**Share Capital**

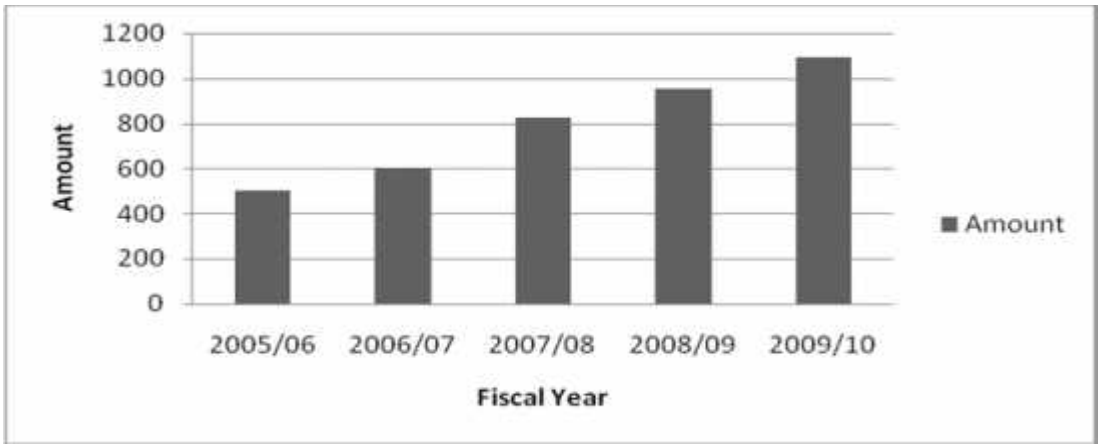
*Amount in Million*

| FY | Amount | Chang Rate | Prop$^{n}$ of TL% |
|---|---|---|---|
| 2005/06 | 500 | 0 | 10.51 |
| 2006/07 | 600 | 20 | 13.26 |
| 2007/08 | 828 | 38 | 7.09 |
| 2008/09 | 952.2 | 15 | 5.325 |
| 2009/10 | 1095.03 | 15 | 4.8022 |
| **Average** | **795.046** | **17.6** | **8.20944** |

*Source: Annual Report of SBL 2009/10*

**Figure: 4.6**

**Share Capital**




The value of share capital in FY 2005/06 is 500 million which increase in 600 million in FY 2006/07, in FY 2007/08 is 828 million, in FY 2008/09 is 952.2 million and in FY 2009/10 is 1095.03 million. The average change rate is 17.6 percent. Share capital proportion among the total liabilities and capital are, 10.51 in FY 2005/06, 13.26 in FY 2006/07, 7.09 in 2007/08, FY 2008/09 is 5.325 and 4.8022 in FY 2009/10. The average proportion is 8.20944.

### 4.2.5 Reserve and Surplus

**Table: 4.7**

**Reserve and surplus**

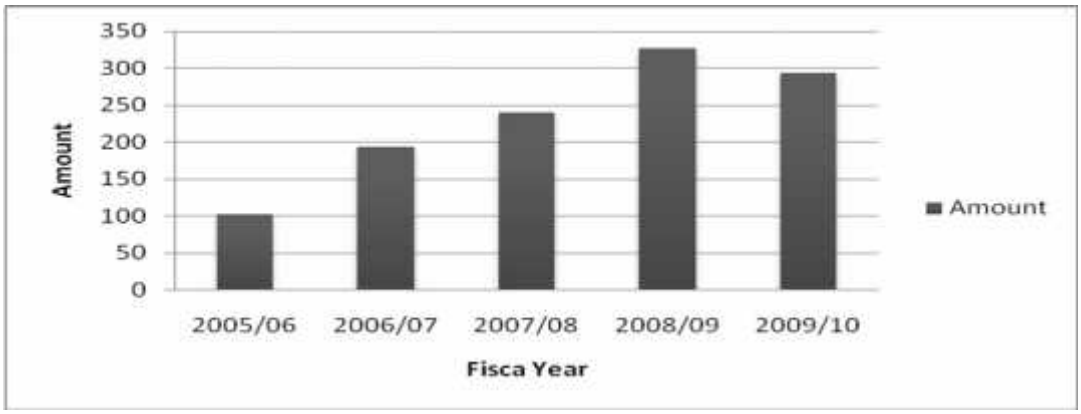
*Amount in Million*

| FY | Amount | Change Rate | Pro$^{n}$ of TL% |
|---|---|---|---|
| 2005/06 | 103.141 | 0 | 2.17 |
| 2006/07 | 193.709 | 87.81 | 2.44 |
| 2007/08 | 240.346 | 24.075 | 2.06 |
| 2008/09 | 326.545 | 86.199 | 1.83 |
| 2009/10 | 293.106 | 10.24 | 1.2854 |
| **Average** | 231.3694 | 41.665 | 1.9571 |

*Source: Annual Report of SBL 2009/10*

**Figure: 4.7**

**Reserve and Surplus**




The value of Reserve and Surplus is in FY 2005/06 is Rs 103.141 million, in FY 2006/07 is Rs 193.709 million, in FY 2007/08 is Rs 240.346 million, in FY 2008/09 is Rs 326.545 million and in FY 2009/10 is Rs293.106. The average change rate is 92.579 percent. Reserve and Surplus proportion among the total liabilities are 2.17 in FY 2005/06, 2.44 in FY 2006/07, 2.06 in 2007/08, 1.83 in FY 2008/09 and 1.2858 in FY 2009/10. The average proportion is 1.9571.

### 4.2.6 Analysis of Deposit Position

The bank uses different types of deposit schemes to collect money from customer. They are fixed deposit, called deposit, saving deposit, and other non-interest bearing deposits. The bank introduced various types of schemes on saving accounts with different interest rate.

**Table: 4.8**
**Total Deposit Position**

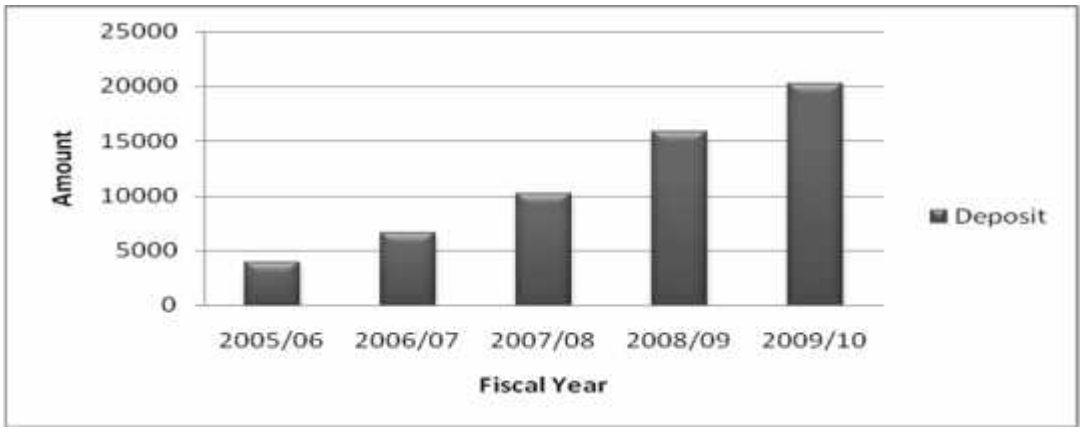
*Amount in Million*

| FY | Deposit | Yearly Change | Prop. of Total Liabilities |
|---|---|---|---|
| 2005/06 | 3918.076 | | 82.36 |
| 2006/07 | 6625.078 | 69.09 | 83.28 |
| 2007/08 | 10191.441 | 53.83 | 87.34 |
| 2008/09 | 15855 | 56 | 88.66 |
| 2009/10 | 20197.03 | 27.386 | 88.574 |
| **Average** | 11357.325 | 41.26 | 86.043 |
| **Standard Deviation** | | 5374.62409 | |

*Source: Annual Report of SBL 2009/10*

**Figure: 4.8**

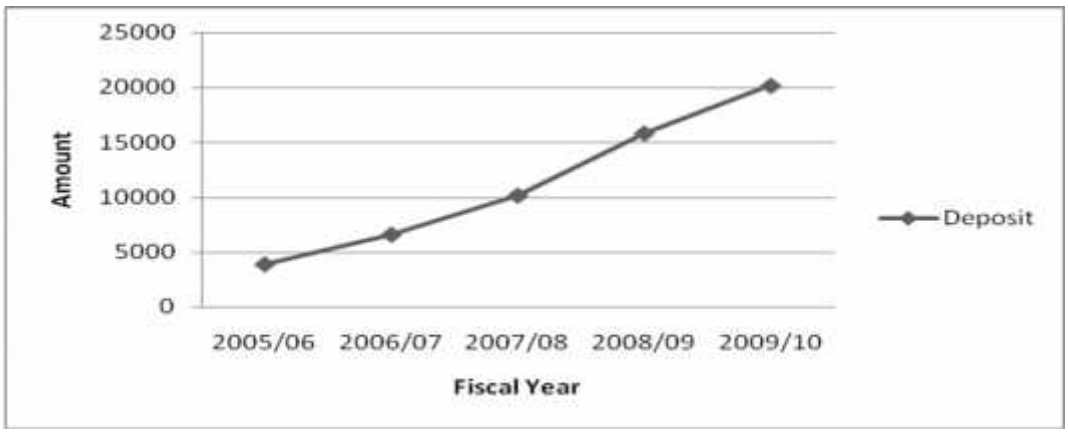
**Total Deposit Position**




The amount of deposit are Rs (Million) 3918.076, 6625.078, 10191.441, 15855 and 20197.03 for the FY 2005/06, 2006/07, 2007/08, 2008/09 and 2009/10 respectively. The amount is in increasing trend. The proportion of total deposit among total liabilities and capital are 82.36, 83.28, 87.34, 88.66 and 88.574 respectively for the FY 2005/06, 2006/07, 2007/08, 2008/09 and 2009/10. The average proportion change rate is 41.26 and standard deviation is 5374.

**Figure 4.8***

**Total Deposit Trend**




The value of Deposit is Rs. 3918.076 million in FY 2005/06. The average change rate is 54.54 percent. Deposit proportions among the total liabilities are 82.37 in FY 2005/06, 83.33 in FY 2006/07, 87.34 in FY 2007/08, 88.66 in FY 2008/09 and

88.57 in FY 2009/10. The average proportion is 80.40. SBL increases its deposit by 56 percent from previous year.

### 4.2.7 Analysis of Deposit Mixed

**Table: 4.9**

**Deposit mixed analysis**

Amount in million

| **Deposits** | 2005/06 | 2006/07 | 2007/08 | 2008/09 | 2009/10 |
|---|---|---|---|---|---|
| Fixed Deposit | 1632 | 3023 | 4562 | 7158 | 10195.734 |
| Call Deposit | 1030 | 1493 | 2722 | 4841 | 6564.86 |
| Saving | 1128 | 1881 | 2622 | 3446 | 2961.258 |
| Non- interest bearing | 128 | 227 | 248 | 409 | 475.1775 |
| **Total** | 3918 | 6625 | 10191 | 15855 | 20197.03 |

*Source: Annual Report of SBL 2009/10*

**Figure: 4.9**

**Deposit mixed analysis**

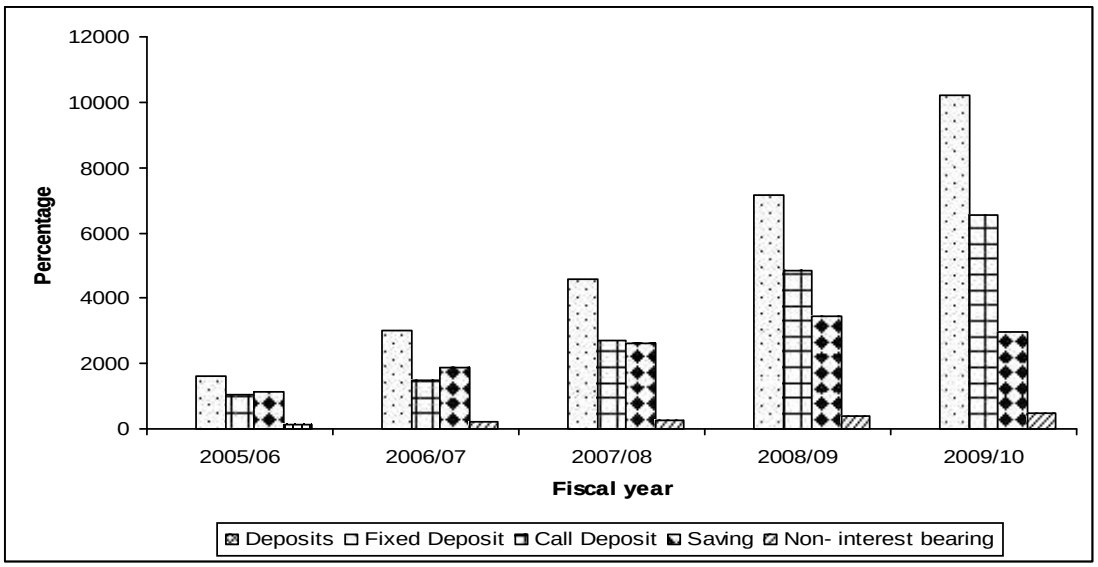


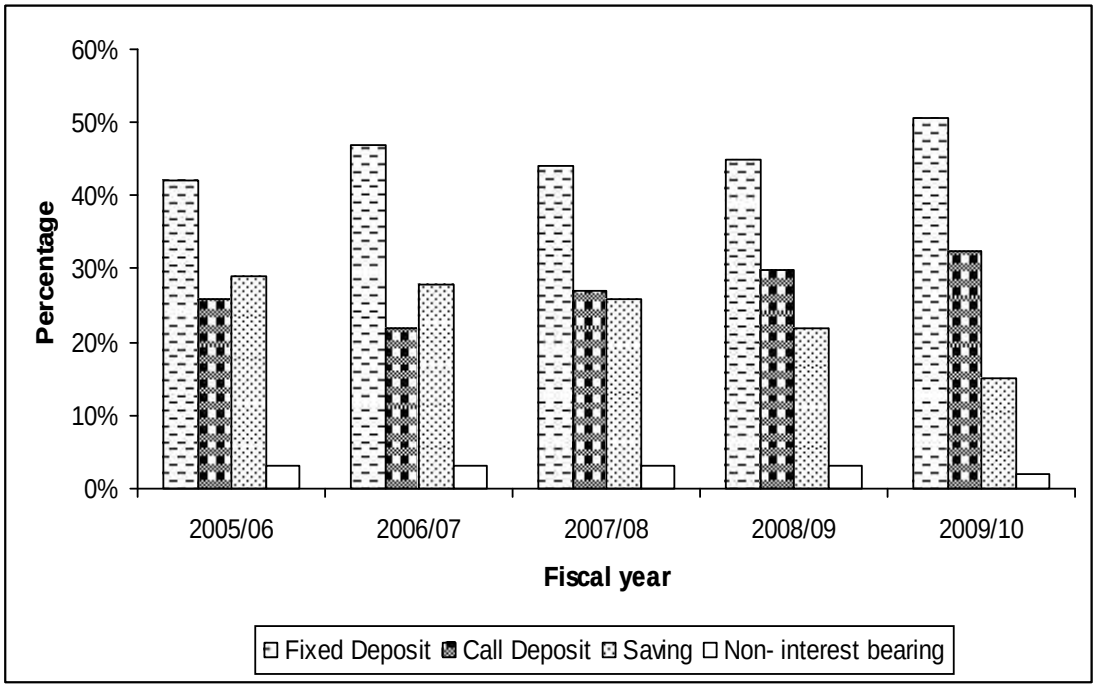
**Table: 4.10**

**Proportion of Deposit Mix**

| **Deposits** | 2005/06 | 2006/07 | 2007/08 | 2008/09 | 2009/10 |
|---|---|---|---|---|---|
| Fixed Deposit | 42% | 47% | 44% | 45% | 50.5% |
| Call Deposit | 26% | 22% | 27% | 30% | 32.5% |
| Saving | 29% | 28% | 26% | 22% | 15% |
| Non- interest bear-ing | 3% | 3% | 3% | 3% | 2% |
| **Total** | 100% | 100% | 100% | 100% | 100% |

**Figure: 4.10**

**Deposit mixed proportion**




The bank introduces different types of saving deposit scheme, but in general, the bank has the following deposit sources: fixed deposit, call deposit, saving deposit, and non interest bearing accounts.

In FY 2005/06 the bank has RS 1632 (42%) million of fixed deposit, RS 1030 (26 %) of call deposit, RS 1128 (29 %) of saving deposit and 128 (3 %) million of non interest bearing deposits.

In FY 2006/07 the bank has RS 3023 (47 %) million of fixed deposit, RS 1493 (22 %) of call deposit, RS 1881 (28 %) of saving deposit and 227 (3%) million of non interest bearing deposits.

In FY 2007/08 the bank has RS 4562 (44 %) million of fixed deposit, RS 2722 (27 %) of call deposit, RS 2622 (26 %) of saving deposit and 248 (3%) million of non interest bearing deposits.

In FY 2008/09 the bank has RS 7158 (45 %) million of fixed deposit, RS 4841 (30 %) of call deposit, RS 3446 (22 %) of saving deposit and 409 (3%) million of non interest bearing deposits.

In fiscal year 2009/10 the bank has RS 10195.734 (50.5%) million of fixed deposit, RS 6564.86 (32.5%) of call deposit, RS 2961.258 (15%) million of saving deposit and RS 475.1775 (2%) of non interest bearing deposit.

### 4.2.8 Borrowings

**Table: 4.11**

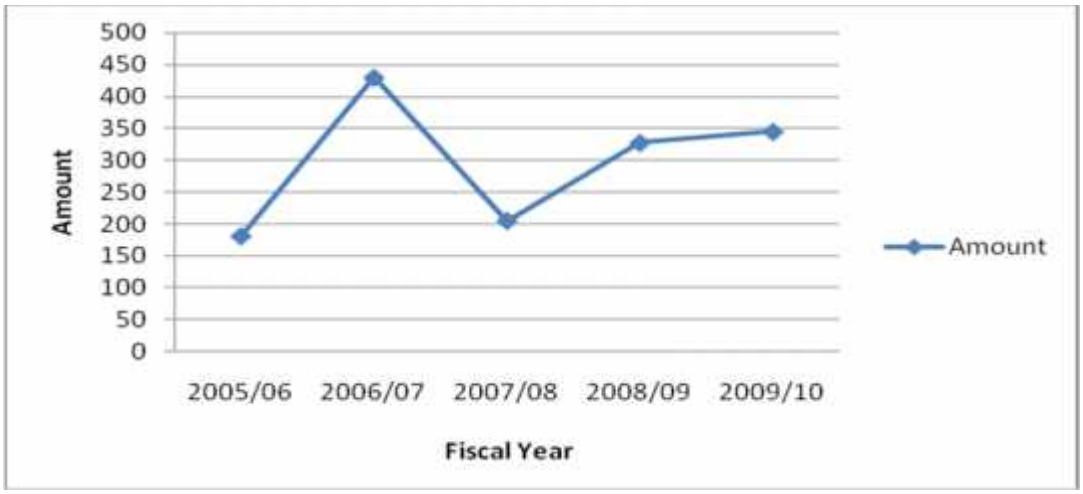
**Borrowing**

| FY | Amount | Change Rate | Prop$^{n}$ of TL % |
|---|---|---|---|
| 2005/06 | 181.15 | - | 3.18 |
| 2006/07 | 430.00 | 137.37 | 5.41 |
| 2007/08 | 205.132 | 52.29 | 1.76 |
| 2008/09 | 327.60 | 59.70 | 1.83 |
| 2009/10 | 345.00 | 5.311 | 1.513 |
| **Average** | 297.776 | 63.67 | 2.7386 |

*Source: Annual Report of SBL 2009/10*

**Figure: 4.11**

**Borrowings**




The value of borrowing in FY 2005/06 is Rs 181.15 million, in FY 2006/07 is Rs 430 million, in FY 2007/08 is Rs 205.132, in FY 2008/09 is Rs 327.6 million and RS 345 million in FY 2009/10. In The average change rate is 63.67 percent. Borrowing proportion among the total liabilities are 3.81 in FY 2005/06, 5.41 in FY 2006/07, 1.76 in 2007/08, in FY 2008/09 is 1.83 and 1.513 in FY 2009/10 .The average proportion is 2.7386.

### 4.2.9 Bills Payable

**Table: 4.12**

**Bills Payable**

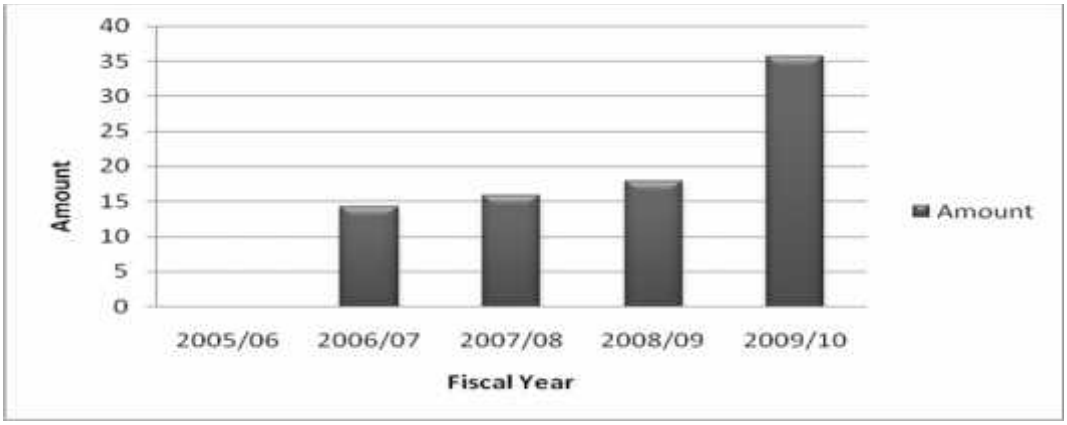
*Amount in Million*

| FY | Amount | Change Rate | Prop$^{n}$ of TL % |
|---|---|---|---|
| 2005/06 | 0 | 100 | 0 |
| 2006/07 | 14.2397 | 100 | 0.179 |
| 2007/08 | 15.8842 | 11.54 | 0.136 |
| 2008/09 | 17.877 | 12.55 | 0.10 |
| 2009/10 | 35.704 | 99.72 | 0.1566 |
| **Average** | 16.741 | 64.762 | 0.1143 |

*Source: Annual Report of SBL 2009/10*

**Figure: 4.12**

**Bills Payable**




The value of Bills Payable, in FY 2006/07 is Rs 14.2397 million, in FY 2007/08 Rs 15.8842 million, in FY 2008/09 is Rs 17.877 million and RS 35.704 million in FY 2009/10. The average change rate is 64.762 percent. Bill Payable proportion among the total liabilities is 0 in FY 2005/06, 0179 in FY 2006/07, 0.136 in 2007/08, 0 .10 in FY 2009/2010 and 0.1566 in FY 2009/10. The average proportion is 0.1143.

### 4.2.10 Analysis of Debenture Analysis

**Table: 4.13**

**Debenture**

| FY | Amount | % Change | Prop$^{n}$ on TL |
|---|---|---|---|
| 2005/06 | - | | |
| 2006/07 | - | | |
| 2007/08 | - | | |
| 2008/09 | 22,77,70,000 | | 1.27 |
| 2009/10 | 22,77,70,000 | | 1.274 |

*Source: Annual Report of SBL2009/10*

The bank issued SBL debenture 2072 BS at 8.5 percent p.a at par 1000. This debenture is matured at 2072 BS. The total amount collected from issue of debenture

is Rs 227770,000. Total debenture issue by all commercial bank is Rs 3727770000.

### 4.2.11 Analysis of Total Capital and Liabilities

**Table: 4.13**

**Overall Capital Analysis**

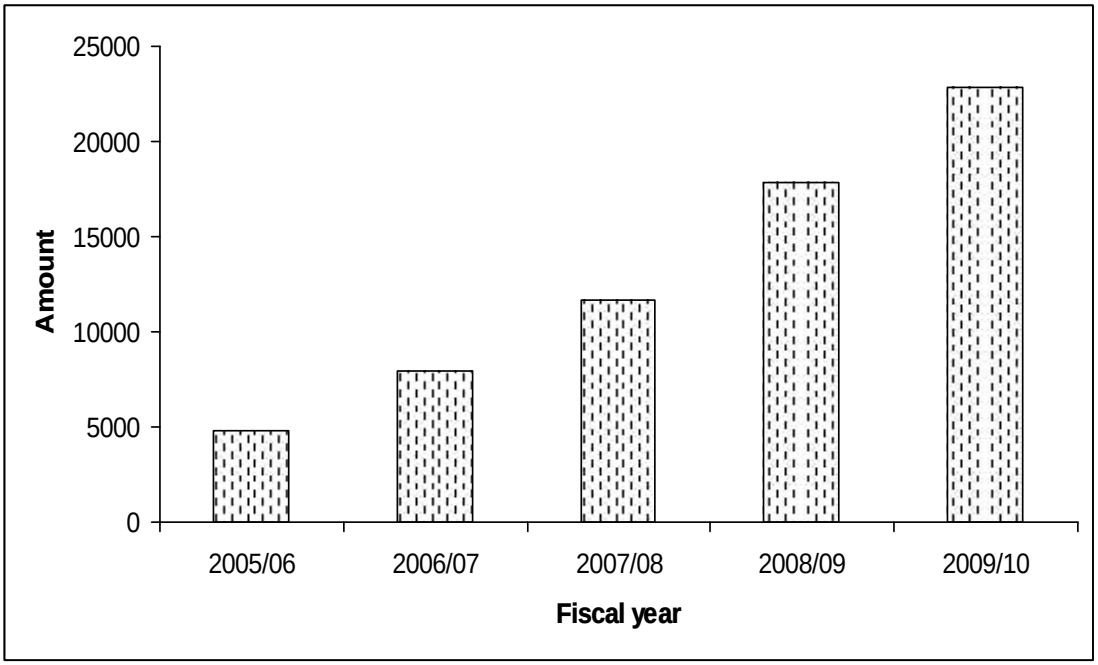
*Amount in Million*

| FY | Amount | Change Rate | Propⁿ of TL% |
|---|---|---|---|
| 2005/06 | 4757 | 53.49 | 100 |
| 2006/07 | 7955 | 67.22 | 100 |
| 2007/08 | 11669 | 46.68 | 100 |
| 2008/09 | 17882 | 53.24 | 100 |
| 2009/10 | 22802.43 | 27.52 | 100 |
| **Average** | 13013.1 | 49.63 | 100 |
| **Standard Deviation** | 5914.05426 | | |

*Source: Annual Report of SBL 2009/10*

**Figure: 4.13**

**Overall Capital Analysis**




The value of Total Capital and Liabilities is Rs. 4756.935 million in FY 2005/06, 7954.664 million in FY 2006/07, 11668.355 million in FY 2007/08, in FY

2008/09 is Rs 17882 million and Rs22802.43 million in FY 2009/10. The average change rate is 49.63 percent. Borrowing proportion among the total liabilities are 100 in all FY. Standard deviation is 5914.05426.

### 4.2.12 Analysis of Capital Structure Adequacy on Risk Weighted assets Analysis

Qualifying capital consists of Tier 1 (core) capital and Tier 2 (supplementary) capital elements, net of required deductions from capital. Thus, for the purpose of calculation of regulatory capital, banks are required to classify their capital into two parts: Core Capital and Supplementary Capital.

**Table: 4.14**

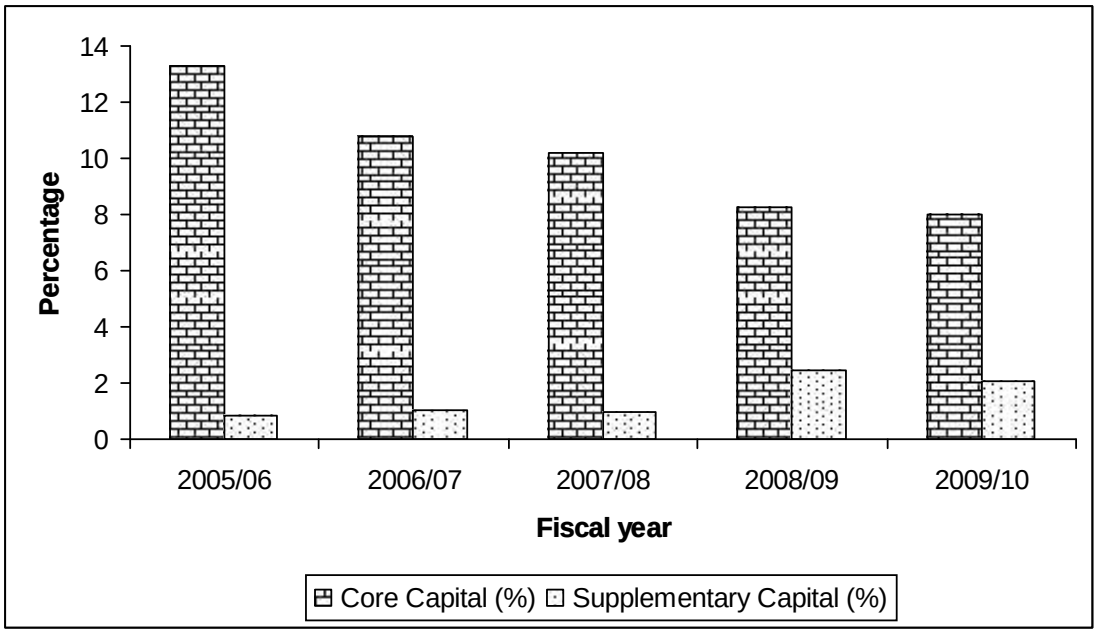
**Capital structure adequacy**

| **FY** | **Core Capital (%)** | **Supplementary Capital (%)** | **Total Capital** (%) | **% Change** |
|---|---|---|---|---|
| 2005/06 | 13.29 | 0.87 | 14.16 | |
| 2006/07 | 10.78 | 1.05 | 11.84 | 16.38 |
| 2007/08 | 10.19 | 0.95 | 11.14 | 5.91 |
| 2008/09 | 8.26 | 2.42 | 10.69 | 4.04 |
| 2009/10 | 8.00 | 2.04 | 10.04 | 6.08 |
| **Average** | 10.104 | 1.466 | 11.574 | 8.1025 |
| **Standard deviation** | | | 1.53332 | |
| **Correlation of coefficient** | | | -0.819 | |
| **PE ( r )** | | | 0.09314 | |

*Source: Annual Report of SBL2009/10*

**Figure: 4.14**

**Capital structure adequacy**




The composition of total capital is made by core capital and supplementary capital. Adequacy of capital fund on weighted assets in FY 2005/06, adequacy of the capital fund on weighted assets is 14.16 which is above than the NRB standard. In FY 2006/07 is 14.16 percent, in FY 2007/08, in FY 2008/09 and in FY 2009/10 are 11.84 percent, 11.14 percent, 10.69 percent and 10.04 percent respectively. All the period the standard adequacy under NRB rule is sufficient.

### 4.3 Financial Analysis

The ratios of a firm by themselves do not reveal anything. For meaningful interpretation, the ratios of a firm should be compared with the ratios of similar firms and the international and national standard and industry norms. Such comparisons will reveal whether the firm is significantly out of line with its competitors. If it significantly out of line, the firm should undertake a detailed analysis to spot out the troubled areas. The study is conducted using each of the bank's financial statement for the last six fiscal years. Hence, various statistical tools are used to analyze the compatibility of the banks.

### 4.3.1 Leverage Ratio Analysis

Leverage ratio reflects the extent to which the banks depend on debt capital structure. Financial leverage is magnification of risk and return introduced through the use of fixed cost financing such as debt and preferred stock. In order to know the long-term financial position, leverage ratios are calculated. These ratios are also called 'capital structure ratios'. These ratios will indicate the proportion of debt equity in the capital structure of a bank.

#### 4.3.1.1 Total Debt to Total Assets Ratio

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

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

**Table: 4.15**

**Debt to total assets**

Amount in Million

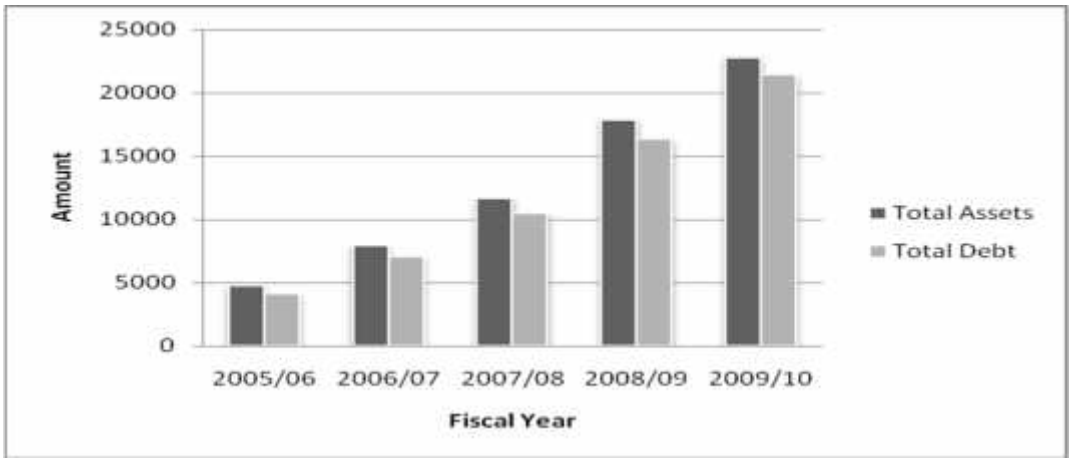
| FY | Total Assets | Total Debt | Ratio | % Change |
|---|---|---|---|---|
| 2005/06 | 4757 | 4089 | 0.86 | - |
| 2006/07 | 7955 | 7066 | 0.89 | 3.49 |
| 2007/08 | 11669 | 10458 | 0.90 | 1.12 |
| 2008/09 | 17882 | 16385 | 0.9163 | 1.81 |
| 2009/10 | 22802.43 | 21409.72 | 0.94 | 2.59 |
| **Average** | 13013.1 | 11881.5 | 0.9013 | 2.25 |
| **Standard deviation** | 5914.05426 | 5503.53257 | 0.02768 | |
| **Correlation of coefficient** | | | 0.984 | |
| **PE ( r )** | | | 0.0096 | |

*Source: Annual Report of SBL 2009/10*

High ratio shows bank's success in exploiting debt to be more profitable as well as it also indicates its riskier capital structure and vice versa.

**Figure: 4.15**

**Total Assets and Debt**




The debt to total assets ratio, in FY 2005/06 is 0.86, in FY 2006/07 is 0.89, in FY 2007/08 is 0.90, in FY 2008/09 is 0.6163 and 0.9163 in FY 2009/10. The average ratio is 0.9013 and standard deviation is 0.02768. The correlation coefficient is 1.00. The assets and debt are increase every year. The assets and debt, in FY 2005/06 is Rs 4757 and Rs 4089 Million, in FY 2006/07 is Rs 7955 and 7066 Million, in FY 2007/08 is Rs 11669 and 10458 Million, in FY 2008/09 is Rs 17882 and 16385 Million and in FY 2009/10 is Rs 22802.43 and Rs 21409.72 The average is Rs 13013.1 and 11881.5 Million. The standard deviation is 5914.05426 and 5503.53257. Similarly, correlation coefficient and PE of debt ratio is 0.984 and 0.0096 respectively.

### 4.3.1.2 Total Credit to Deposit Ratio

This ratio explains how much credit is creation through the investment of fund collecting from the customer. The banks received deposit from one customer, invest it to other customer, and create credit. This ratio indicates the efficiency of the investment. The formula is:

$$\text{Credit to Deposit Ratio} = \frac{\text{Total Credit}}{\text{Total Deposit}}$$

**Table: 4.16**

**Total credit to deposit ratio**

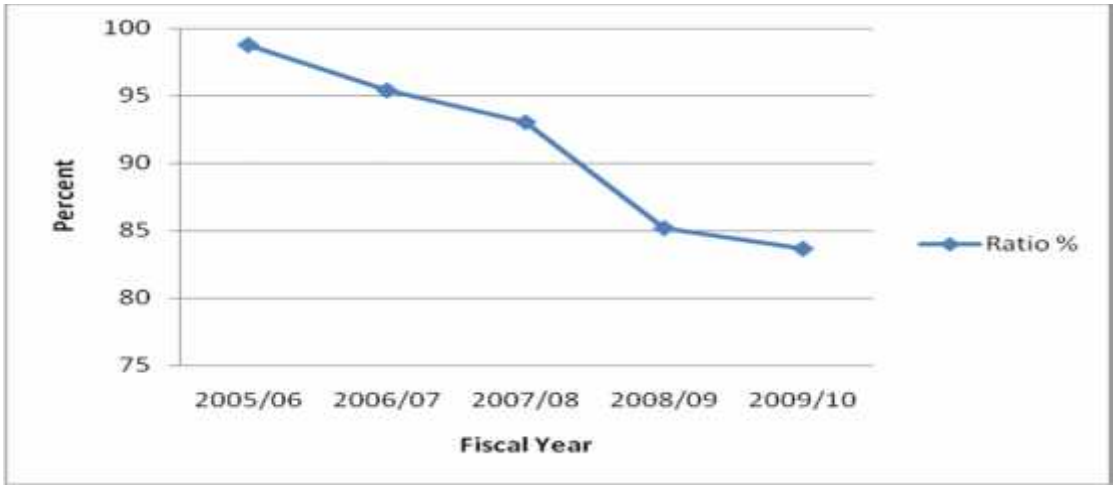
Amount in Million

| FY | Ratio % | % Change |
|---|---|---|
| 2005/06 | 98.75 | - |
| 2006/07 | 95.39 | 3.40 |
| 2007/08 | 93.03 | 2.47 |
| 2008/09 | 85.18 | 8.44 |
| 2009/10 | 83.65 | 1.8 |
| **Average** | 91 | |
| **Standard Deviation** | 5.85 | |
| **C.V.** | 6.43 | |

*Source: annual report of SBL 2009/10*

**Figure: 4.16**

**Credit to deposit Ratio**




The credit to deposit analysis, in FY 2005/06 is 98.75 percent which is decrease by 5.43 percent, in FY 2006/07 is 95.39 percent which is decrease by 3.40 percent, in FY 2007/08 is 93.03 percent which is decrease by 2.47 percent and in FY 2008/09 is 85.18 percent which is decrease by 8.44 percent, similarly in FY 2009/10 the ratio is decrease to 83.65 percent. In addition, average credit to deposit analysis is

91.0 percent and average changing rate is 4.0275 percent. The standard deviation is 5.85 percent and C.V. is 6.43 percent.

#### 4.3.1.3 Total debt to equity ratio Analysis

The debt-equity ratio shows the relationship between banks debt and equity financing. It measures the relative interest of creditors and owners. Debt equity ratio, an important tool of financial analysis, depicts an arithmetical relation between debt funds and owners' funds. The total debt includes current accounts, saving accounts, calls and short deposits, overdraft fixed deposit, loan and advances and borrowing from other banks. Shareholder's equity or net worth includes paid-up capital, reserve and surplus.

**Table: 4.17**
**Debt Equity Ratio**

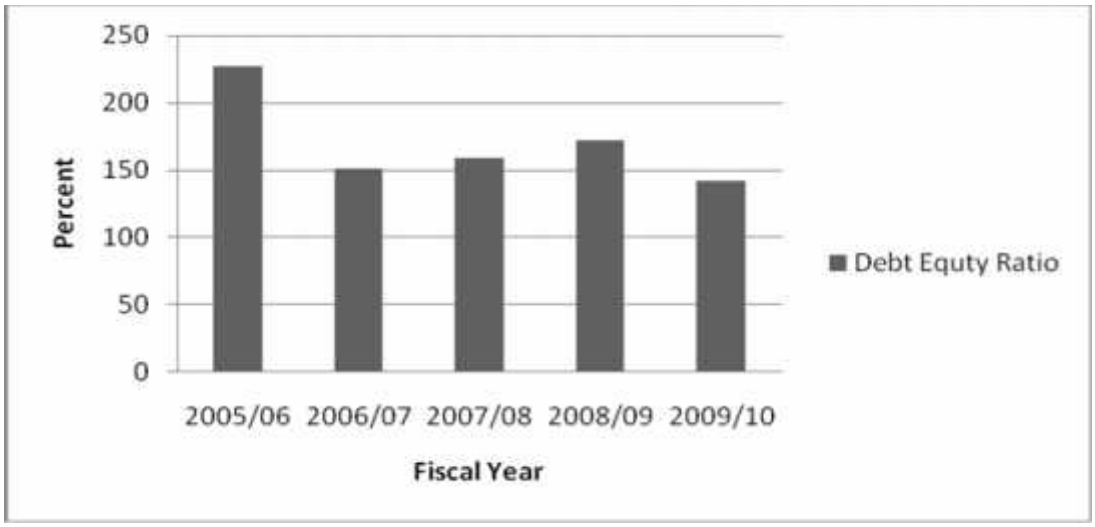
Amount in Million

| FY | Equity Capital | Debt Capital | Debt Ratio (%) | % Change |
|---|---|---|---|---|
| 2005/06 | 1800 | 4089 | 227.17 | - |
| 2006/07 | 4668 | 7066 | 151.37 | 33.37 |
| 2007/08 | 9025 | 10458 | 158.88 | 4.96 |
| 2008/09 | 9522 | 16385 | 172.1 | 8.32 |
| 2009/10 | 4861.94 | 21409.72 | 142.05 | 17.46 |
| Average | 5975.388 | 11881.544 | 170.314 | 16.0275 |
| **Standard deviation** | | | 259.82895 | |
| **Correlation Coefficient** | | | 0.938 | |
| **PE (r)** | | | 0.0362 | |

*Source: Annual Report of SBL 2009/10*

**Figure: 4.17**

**Debt Equity Ratio**




The debt ratio of fiscal year 2005/06, is 227.17 percent, in FY 2006/07, is 151.37 percent, in FY 2007/08 is 158.88 percent, in the fiscal year 2008/09 is 172.1 percent and in FY 2009/10 the debt ratio is 142.05 percent. The average D/E ratio is 170.314 percent and the standard deviation of debt equity ratio is 259.82895 percent and correlation coefficient between total debt and share capital is 0.938, which is significance. The Probable Error of correlation coefficient is 0.0362.

### 4.3.1.4 Equity Multiplier

It measures rupees amount of assets for rupees of equity. The equity multiplier ratio is amount of assets for each amount of equity. It is the relationship between total assets and equity. This ratio is calculated as follows:

$$Equity\ Multiplier = \frac{\text{Total Assets}}{\text{Total Equity}}$$

**Table: 4.18**

**Equity Multiplier**

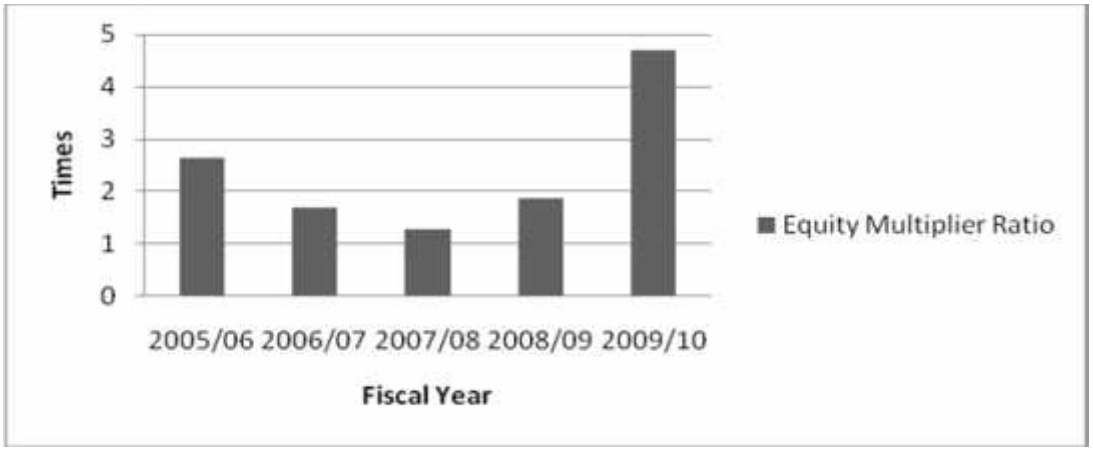
Rs in Million

| FY | Total Assets | Total Equity | Ratio | % Change |
|---|---|---|---|---|
| 2005/06 | 4757 | 1800 | 2.64 | _ |
| 2006/07 | 7955 | 4668 | 1.7 | 35.61 |
| 2007/08 | 11669 | 9025 | 1.29 | 24.12 |
| 2008/09 | 17882 | 9522 | 1.88 | 45.76 |
| 2009/10 | 22802.43 | 4861.93 | 4.69 | 149.47 |
| **Average** | 13013.1 | 7469.23 | 2.44 | 63.74 |
| **Standard Deviation** | | | 2.77706 | |
| **Correlation of Coefficient** | | | 0.942 | |
| **PE (r )** | | | 0.0340 | |

*Source: Annual Report of SBL 2009/10*

**Figure: 4.18**

**Equity Multiplier Ratio**




The equity multiplier in fiscal year in 2005/06 is 2.64 times, in FY 2006/07 is 1.70 times, it is decreased by 35.61 percent, in FY 2007/08 is 1.29 times, and decrease by 24.12 percent, in FY 2008/09 is 1.88 times, which is decreased by 45.76, similarly in FY 2009/10, the equity multiplier is 4.69, it means increased by 149.47 percent. The average equity multiplier is 2.44 times. The standard deviation is 2.77706, correlation of coefficient is 0.942 and probable of error on correlation is 0.0340.

#### 4.3.1.5 Interest Coverage Ratio.

This ratio is also known as time interest earned (TIE) ratio which measures the debt servicing capacity of a firm in so far as the fixed interest on the total loan is concerned. Higher the ratio indicates higher capacity to bear the high volume of interest charge and vice versa.

**Table: 4.19**
**Interest coverage Ratio**

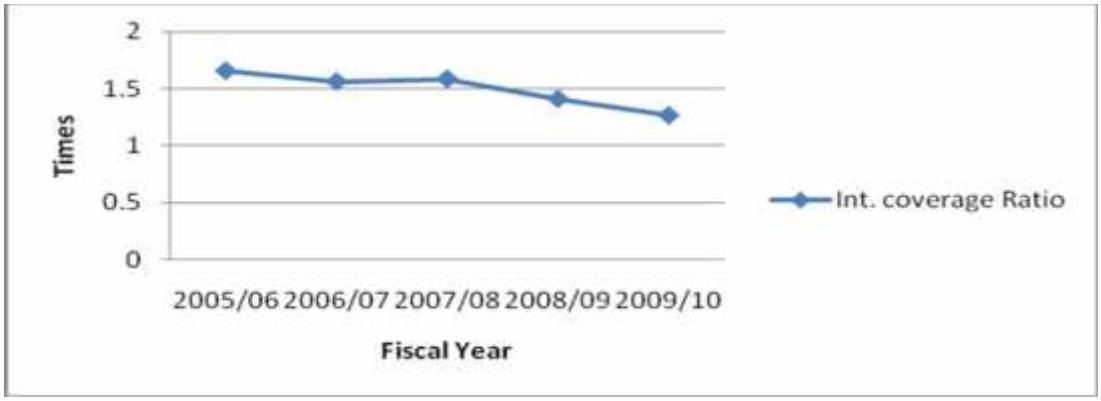
Amount in Million

| FY | EBIT | Interest | Ratio |
|---|---|---|---|
| 2005/06 | 255 | 154 | 1.656 |
| 2006/07 | 425 | 272 | 1.5625 |
| 2007/08 | 627 | 408 | 1.586 |
| 2008/09 | 1150 | 814 | 1.4128 |
| 2009/10 | 1790 | 1407 | 1.27 |
| **Average** | 849.4 | 611 | 1.46 |
| **Standard deviation** | | | 0.2404 |
| **Correlation Coefficient** | | | 0.995 |
| **PE(r)** | | | 0.00265 |

*Source: Annual Report of SBL 2009/10*

**Figure: 4.19**

**Interest coverage Ratio**




Interest coverage ratios of FY 2005/06, 2006/07, 2007/08, 2008/09 and FY 2009/10 are 1.656, 1.563, 1.586, 1.4128 times and 1.27 times respectively. Average interest coverage ratio is 1.46 times. The Standard deviation is 0.2404. Correlation coefficient is0.0095 and probable error is 0.00265. The interest coverage ratio is sufficient to pay interest to creditors.

### 4.3.3 Profitability Ratios

Profitability is important measure of a company's operating success. There are two areas for judging profitability (1) relationships in the income statement that indicate a Company's ability to recover the costs and expenses, (2) relationship of income to various balance sheet measures that indicate the company's relative ability to earn interest from the assets employed. The first measure is the profit margin and the second one is the return on investment.

#### 4.3.3.1 Net Profit Margin

Profit margin measure the relationship of net income and operating income.

**Table: 4.20**

**Net profit margin**

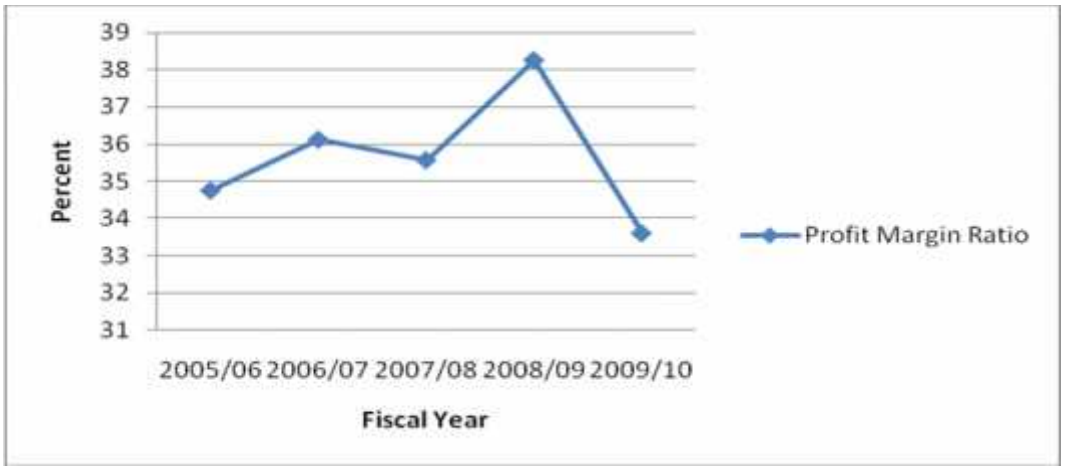
Amount in Million

| FY | Net income | Operating income | Ratio (%) | % Change |
|---|---|---|---|---|
| 2005/06 | 65 | 187 | 34.76 | _ |
| 2006/07 | 95 | 263 | 36.12 | 3.91 |
| 2007/08 | 143 | 402 | 35.57 | 1.52 |
| 2008/09 | 218 | 570 | 38.25 | 7.53 |
| 2009/10 | 241 | 717 | 33.61 | 12.13 |
| **Average** | 152.4 | 427.8 | 35.662 | 6.27 |
| **Standard deviation** | 63.7708 | 177.6 | 8.1904 | |
| **Correlation** | | | 0.984 | |
| **PE(r)** | | | 0.00958 | |

*Source: Annual Report of SBL 2009/10*

**Figure: 4.20**

**Net Profit Margin**




Net profit margin in FY 2005/06 is 34.76 percent, which is decreased by 34.35 percent. In FY 2006/07 is 36.12 percent, which is increased by 3.91 percent. in FY 2007/08 is 35.57 percent , this is decreased by 1.52 percent and in FY 2008/09 the profit margin is 38.25 percent this is increased by 7.53 percent, similarly in FY 2009/10, the net profit margin is 33.61 percent, it means increased by 12.13 percent. The average profit margin is 35.662 percent and average changing rate is 6.27 percent. The standard deviation is 8.1904. The correlation of coefficient is 0.984 and probable of error on correlation coefficient is 0.00958.

### 4.3.3.2 Return on Total Assets

Return on total assets ratio measures the profitability of bank that explains a firm to earn satisfactory return on all financial resources invested in the bank's assets; otherwise its survivable is threatened. The ratio explains net income for each unit of assets. Higher ratio indicates efficiency in utilizing its overall resources and vice versa. Rate return on total assets is major tool to judge the operational efficiency of a bank. The return on total assets of selected banks is as follows: Total capital and liabilities are all items included in liabilities side of balance sheet. The following table: 4.21 show the position of total capital and liabilities of SBL.

**Table: 4.21**

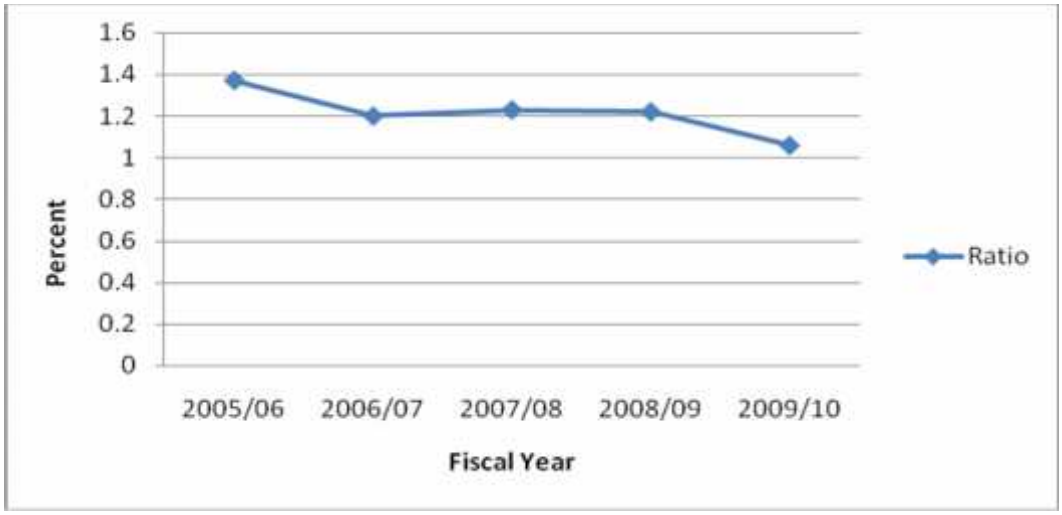
**Return on Total Assets**

| FY | Ratio | Change |
|---|---|---|
| 2005/06 | 1.37 | _ |
| 2006/07 | 1.20 | 12.40 |
| 2007/08 | 1.23 | 2.5 |
| 2008/09 | 1.22 | 0.813 |
| 2009/10 | 1.06 | 15.09 |
| Average | 1.274 | 7.7 |
| **Standard deviation** | 0.4589 | |

*Source: Annual Report of SBL 2009/10*

**Figure: 4.22**

**Return on Total Assets**




The ratio of Return on Total Assets is 1.37 percent, 1.20 percent, 1.23 percent, 1.22 percent and 1.06 percent in the FY 2005/06, 2006/07, 2007/08, 2008/09 and 2009/10 respectively. The smallest ration is in fiscal year 2006/07 i.e. 1.20 percent and the largest is in 2006/07 i.e. 1.37 percent. The average return on assets is 1.274 percent. The standard deviation is 0.4589.

#### 4.3.3.3 Return on Shareholder's Equity

A return on shareholder's equity is the measure of productivity of shareholder's funds. It carries the relationship of return on shareholder's equity. The shareholder's equity includes common share capital, preference share capital, reserve, and surplus. Management's objective is to generate the maximum return on shareholder's investment in the firm. ROE is therefore the best single measure of the company's success in fulfilling its goal. Thus, this ratio is of great interest and value to the present as well as the perspective shareholders and also the great concern to management, which has the responsibility of maximizing the owner's welfare. The ratio equals the net profit after taxes divided by the common stockholder's equity.

**Table: 4.23**

**Return on Shareholder's Equity**

Amount in Million

| FY | Shareholder' Equity | Net Income | Ratio | % Change |
|---|---|---|---|---|
| 2005/06 | 668 | 65 | 9.73 | _ |
| 2006/07 | 889 | 95 | 10.69 | 9.87 |
| 2007/08 | 1211 | 143 | 11.81 | 10.48 |
| 2008/09 | 1496.755 | 218 | 14.565 | 23.33 |
| 2009/10 | 1603.543 | 241 | 15.03 | 3.2 |
| **Average** | 1177.6596 | 152.4 | 12.365 | 11.72 |
| **Standard Deviation** | | | 2.4178 | |
| **Correlation Coefficient** | | | 0.953 | |
| **PE ( r )** | | | 0.0277 | |

*Source: Annual Report of SBL 2009/10*

**Figure: 4.23**

**Shareholder's Equity**

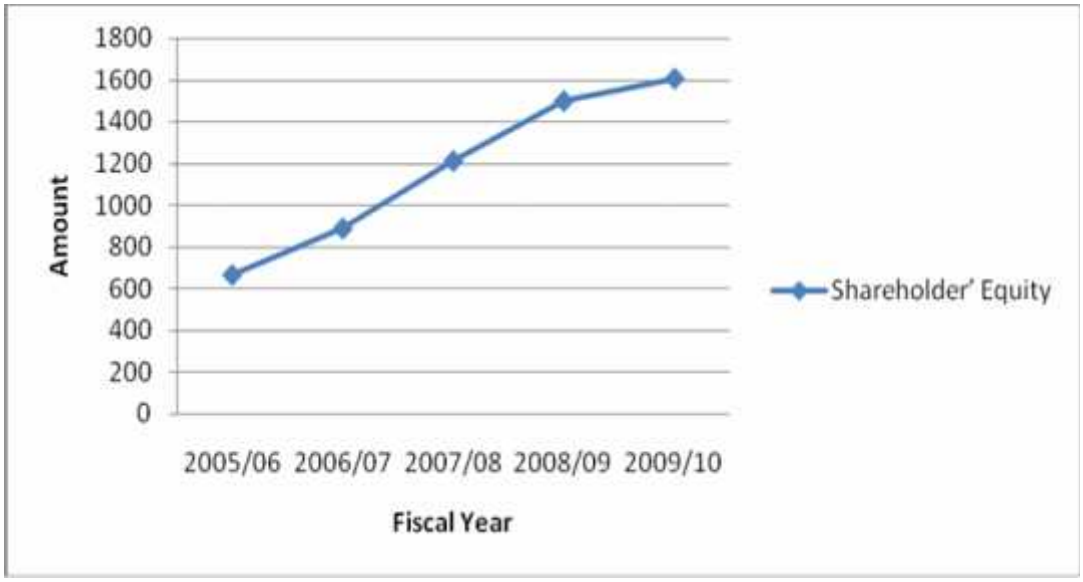
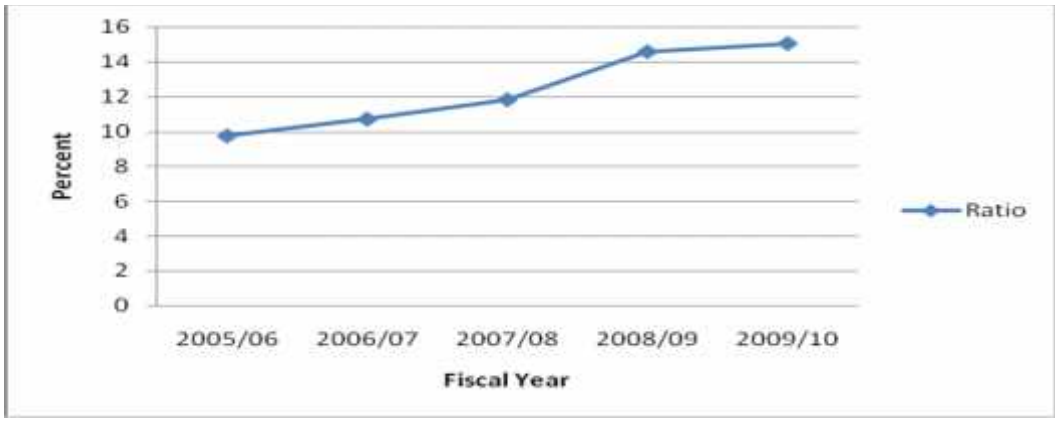



**Figure: 4.23***

**Return on Shareholder's Equity Ratio**




The shareholder's equity is Rs (in Millions) 668, 889, 1211, 1496.755 and 1603.543 in fiscal year 2005/06, 2006/07, 2007/08, 2008/09 and 2009/10 respectively. The average shareholders' equity in such five year is Rs (in Millions) 944.55. The average change rate is 34.33 percent.

The return on shareholder's ratio in fiscal year 2005/06 is 9.73 percent, in FY 2006/07 is percent 10.69, in FY 2007/08 is 11.81 percent, in FY 2008/09 is 14.565 percent and 15.03 percent in FY 2009/10. The average return on shareholder's equity is 12.365, and standard deviation is 2.41773. The correlation coefficient on net income and return on equity is 0.953 and probable of error on correlation coefficient is 0.0277.

#### 4.3.3.4 Return on Total Deposit

**Table: 4.24**

**Return on Total Deposit**

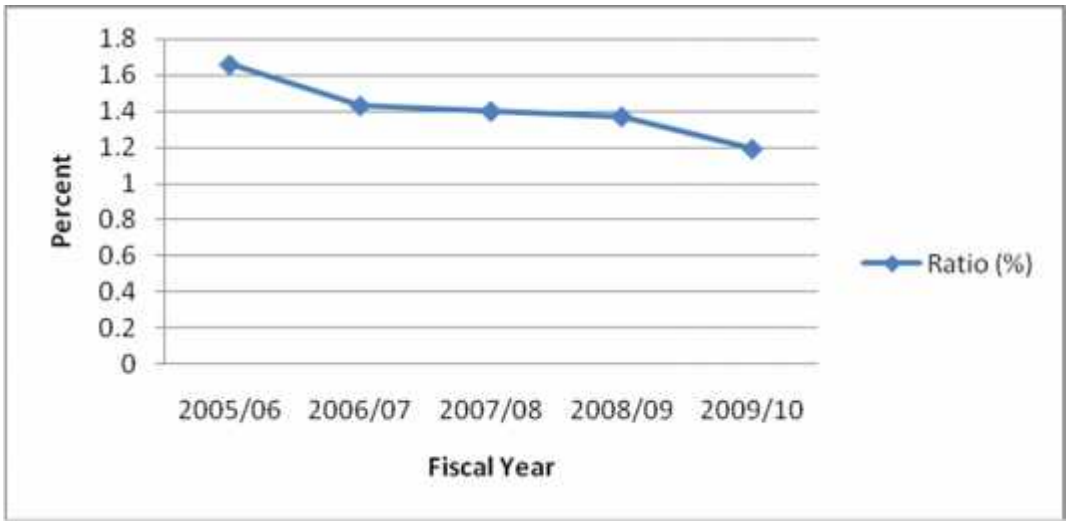
Amount in Million

| FY | Net Income | Total Deposit | Ratio (%) | % Change |
|---|---|---|---|---|
| 2005/06 | 65 | 3918 | 1.66 | _ |
| 2006/07 | 95 | 6625 | 1.43 | 13.85 |
| 2007/08 | 143 | 10191 | 1.40 | 2.1 |
| 2008/09 | 218 | 15855 | 1.37 | 2.14 |
| 2009/10 | 241 | 20197 | 1.19 | 13.1 |
| **Average** | 152.4 | 11357.2 | 3.558 | 197.222 |
| **Standard deviation** | | | 0.6255 | |
| **Correlation Coefficient** | | | 0.988 | |
| **PE(r)** | | | 0.0072 | |

*Source: Annual Report of SBL 2009/10*

**Figure: 4.24**

**Return on Total Deposit**



The return on Deposit at fiscal year in 2005/06 is 1.66 percent; it is decreased by 44.55 percent. In FY 2006/07 is 1.43 percent, which is decreased by 1.39 percent, in FY 2007/08 is 1.40 percent, which is decreased by 2.10 percent, in FY 2008/09 is 1.37 percent, which is decreased by 2.14 percent, as well as, in FY 2009/10 the return on deposit is 1.19 percent, which is decreased by 13.1 percent. In this year the return is increase because the deposit is increase highly than return. Average return on deposit is 3.558 percent .The standard deviation is 0.6255. The correlation coefficient is 0.988 and probable of error is 0.0072.

### 4.3.3.5 Interest Margin Analysis

Net interest margin measure the profitability of commercial bank. It is another most popular tool of profitability measurement. It is calculated as follows:

$$\text{Net interest Margine} = \frac{\text{Net interest Income}}{\text{Interest Earnigs Assets}}$$

(Interest Earning Assets = Loans + Investment)

**Table: 4.25**

**Interest Margin Analysis**

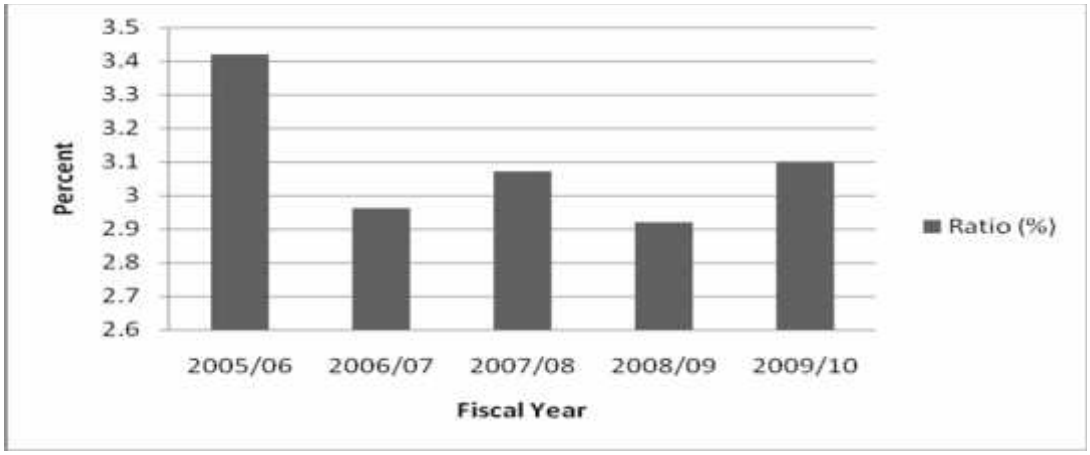
Amount is Million

| FY | Net Int. Earning | Int. Earning Assets | Ratio (%) | % Change |
|---|---|---|---|---|
| 2005/06 | 152 | 4440 | 3.42 | _ |
| 2006/07 | 210 | 7088 | 2.96 | 13.45 |
| 2007/08 | 322 | 10486 | 3.07 | 3.72 |
| 2008/09 | 452 | 15505 | 2.92 | 4.89 |
| 2009/10 | 612 | 19106.33 | 3.1 | 6.16 |
| **Average** | 349.6 | 11325.1 | 3.094 | 7.055 |
| **Standard Deviation** | 139.56647 | 5060.19523 | 0.33553 | |
| **Correlation** | | | 0.999 | |
| **PE ( r )** | | | 0.00062 | |

*Source: Annual Report of SBL 2009/10*

**Figure: 4.25**

**Interest margin Ratio**




Interest margin ratio in FY 2005/06 it is 3.42 percent, which, is decreased by 3.57 percent. In FY 2006/07 is 2.96 percent, which is decrease by 13.45 percent. In FY 2007/08 it is 3.07 which is increase by 3.72 percent and in FY 2008/09 it is 2.92 percent and it is increase by 4.89 percent, in the same way in FY 2009/10 the interest margin ratio3.1, it means increased by 6.16 percent. The average interest margin ratio is 3.094 percent. The standard deviation is 0.335553. The correlation of coefficient is 0.999 and probable of error is 0.00062.

### 4.3.4 Market Related Ratios

These ratios show the banks performance in summary. By analysis these ratios we can easily know the banks position and compare the various banks each other. So that we can make buying and selling decision of the banks share.

**Table: 4.26**

**Common share information**

| Particulars | 2005/06 | 2006/07 | 2007/08 | 2008/09 | 2009/10 |
|---|---|---|---|---|---|
| EPS (Rs) | 13.05 | 15.88 | 17.29 | 22.89 | 21.99 |
| Return on Equity (%) | 10.82 | 12 | 13.4 | 17.04 | 15.02 |
| No of Share (Thousand) | 5000 | 6000 | 8280 | 9522 | 10950.3 |
| Market Capitalization ( Millions) | 1800 | 4668 | 9025 | 9522 | 4862 |

*Source: Annual Report of SBL 2009/10*

#### 4.3.4.1 Earning per Share (EPS)

Earning per share shows the profitability of the firm on a per share basis, it does not reflect how much is paid as dividend and how much is retained in the business. EPS is one of the most widely used measures of the bank's performance. It is an important index of the bank's performance and the investors rely heavily on it for their investment decisions. In order to see the strength of the share in the share in the market, EPS of selected banks are calculated as below:

**Table 4.27**

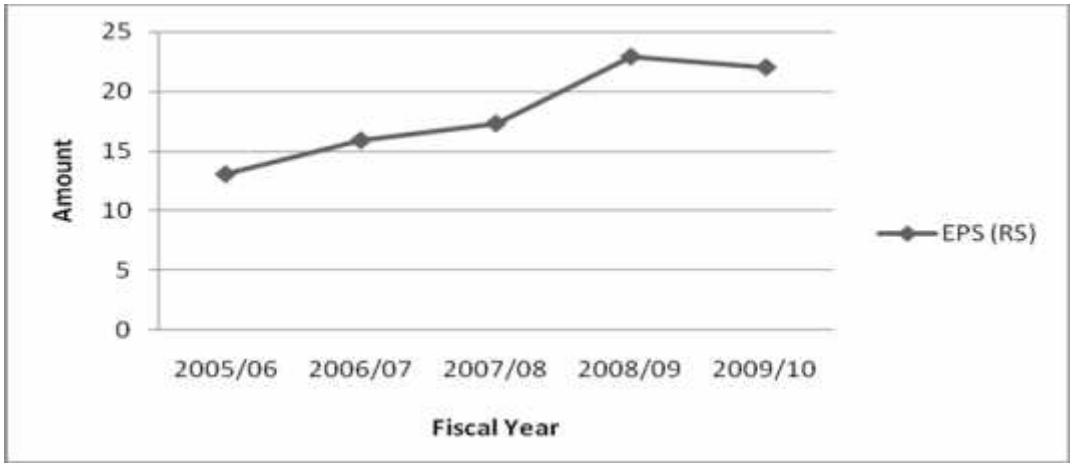
**Earning Per Share**

| FY | EPS (RS) | Change % |
|---|---|---|
| 2005/06 | 13.05 | _ |
| 2006/07 | 15.88 | 21.68 |
| 2007/08 | 17.29 | 8.88 |
| 2008/09 | 22.89 | 32.39 |
| 2009/10 | 21.99 | 24.49 |
| **Average** | 18.22 | 17.14 |
| **Standard deviation** | 3.79501 | |

*Source: Annual Report of SBL 2009/10*

**Figure 4.27**

**Earning Per Share**




Earning per share is one of the market related ratio to see market performance of the bank, market related ratios are computed. The EPS of SBL is Rs 13.05, Rs

15.88, Rs 17.29, Rs 22.89 and Rs 21.99 in the FY 2005/06, 2006/07, 2007/08 Rs 2008/09 and 2009/10 respectively. The average EPS is Rs.18.22. The standard deviation is 3.79501. The annual change rate of EPS is increased by 21.68 percent, from 2005/06 to 2006/07, increased by 8.88 percent, from 2006/07 to 2007/08 and decreased by 24.49 percent, from 2008/09 to 2009/10. The average change rate is 17.14 percent.

### 4.3.4.2 Market Value per Share (MVPS)

**Table 4.28**

**Market Value per Share**

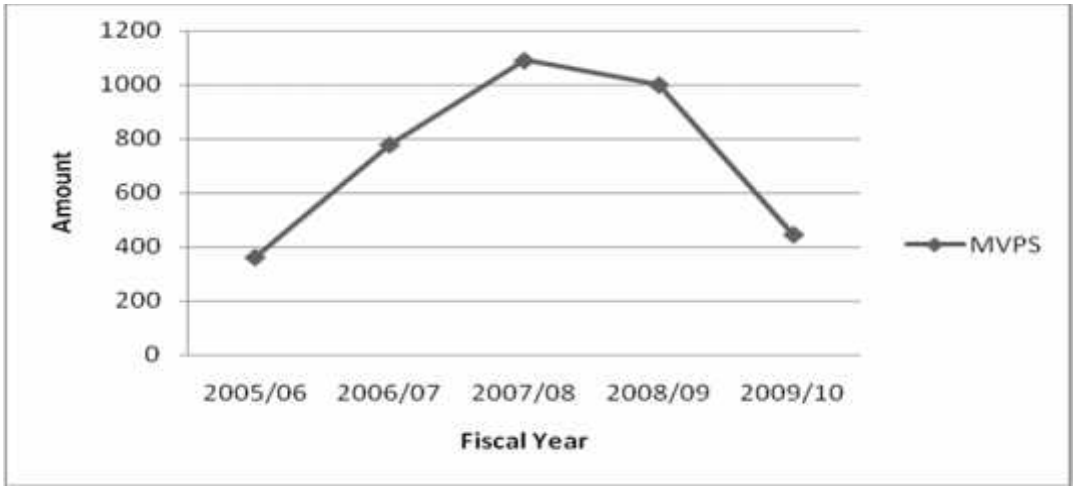
Amount in Million

| FY | MVPS | Change % |
|---|---|---|
| 2005/06 | 360 | _ |
| 2006/07 | 778 | 116.11 |
| 2007/08 | 1090 | 40.10 |
| 2008/09 | 1000 | 8.26 |
| 2009/10 | 444 | 55.6 |
| Average | 734.4 | 55.02 |
| **Standard deviation** | **378.91086** | |

*Source: Annual Report of SBL2009/10*

**Figure 4.28**

**Market Value per Share**




The market value of SBL is Rs. 360, Rs. 778, Rs. 1090, Rs 1000 and Rs 444 for FY 2005/06, 2006/07, 2007/08 2008/09 and 2009/10 respectively. The average

MVPS is Rs. 734.4.The market value change by 116.11 percent from 2005/06 to 2006/07, and 40.10 percent, from 2006/07 to 2007/08, 8.26 percent in FY 2008/09 and in FY 2010/11, it is decreased by 55.6 percent from previous year. The average change rate is 734.4 percent. The standard deviation is 378.91086.

### 4.3.4.3 Equity Market Capitalization Analysis

**Table: 4.29**

**Equity Market Capitalization Analysis**

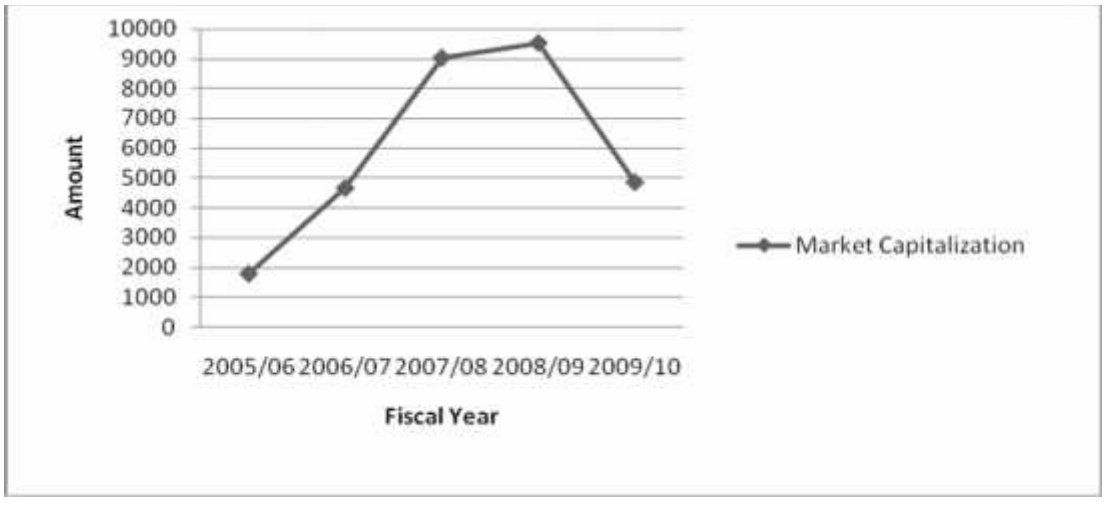
Amount in Million

| FY | Market Capitalization | % Changes |
|---|---|---|
| 2005/06 | 1800 | _ |
| 2006/07 | 4668 | 159.33 |
| 2007/08 | 9025 | 93.34 |
| 2008/09 | 9522 | 5.507 |
| 2009/10 | 4862 | 84.544 |
| **Average** | 5975.4 | 85.68 |
| **Standard deviation** | 6383.8285 | |

*Source: Annual Report of SBL 2009/10*

**Figure: 4.29**

**Market Capitalization**




The share is listed after the established of third year of the company. The equity market capitalization in year 2005/06 is Rs 1800 Million, in FY 2006/07 is Rs 4668 million which is increased by 62.76 percent, in FY 2007/08 is Rs 9025 which

is increased by 93.34 percent, in FY 2008/09 is 9522 it means increased by 5.507 and in FY 2009/10 the market capitalization is 4862, which is decreased by 84.544 percent, and its standard deviation is 6383.8285.

#### 4.3.4.4 Retention Ratio (1 - DPR)

**Table 4.30**

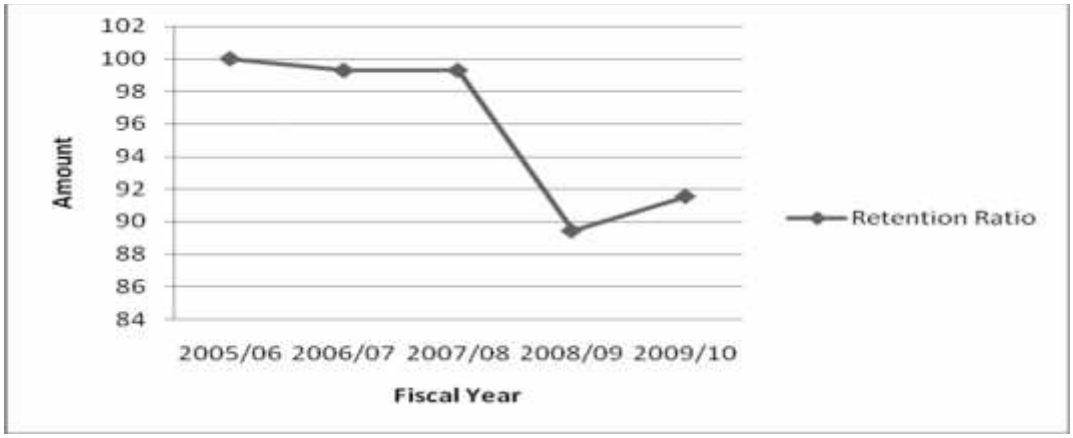
**Retention Ratio**

| FY | Retention Ratio | % Change |
|---|---|---|
| 2005/06 | 100 | _ |
| 2006/07 | 99.29 | 0.71 |
| 2007/08 | 99.29 | _ |
| 2008/09 | 89.47 | 9.82 |
| 2009/10 | 91.58 | 2.36 |

*Source: Annual Report of SBL 2009/10*

**Figure 4.30**

**Retention Ratio**




The Retention ratio of SBL is 100 percent 99.29 percent, 99.29 percent, 89.47 percent and91.58 percent in the FY 062/63, in FY 2006/07, in FY 2007/08 in FY 2008/09 and 2009/10 respectively.

### 4.3.4.5 Price Earning Ratio

Price earning ratio reflects the price currently being paid by the market for the each rupees of currently reported EPS. In other words, it measures investor expectations and the market appraisal of the performance of a firm. It is an indication of the way investors think that the banks would perform better in the future. Higher market price suggest that investor expect earning to grow and this gives a high P/E implies that investor feel that earning are not likely to rise. Price earning ratio is calculated as below:

$$\text{Price earning ratio} = \frac{\text{Market price per share}}{\text{Earning per share}}$$

**Table 4.31**

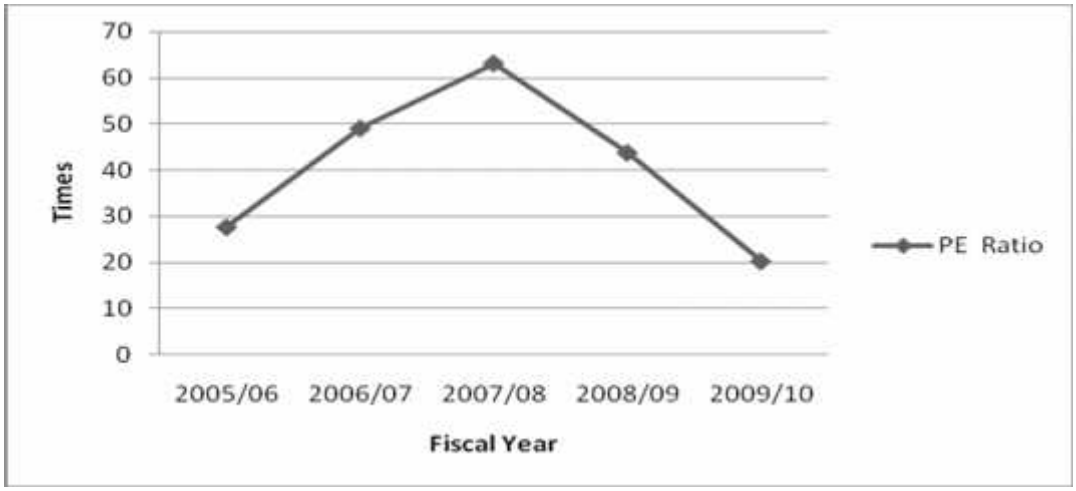
**Price Earnings Ratio**

| FY | PE Ratio | Change (Rs) |
|---|---|---|
| 2005/06 | 27.59 | _ |
| 2006/07 | 48.98 | 77.53 |
| 2007/08 | 63.04 | 28.7 |
| 2008/09 | 43.7 | 30.68 |
| 2009/10 | 20.19 | 53.8 |
| **Average** | 40.7 | 47.68 |
| **Standard deviation** | 14.64401 | |

*Source: Annual Report of SBL 2009/10*

**Figure 4.31**

**Piece Earning Ratio**




The Price Earning Ratio is 27.59 times, 48.98 times, 63.04 time 43.7 times and 20.19 times in FY 2005/06, FY 2006/07, FY 2007/08 FY 2008/09 and 2009/10 respectively. The average P/E ratio is 40.7 times. The P/E ration is in decreasing trained. It changed by 77.53 percent in 2006/07, 28.70 percent in year 2007/08, 30.68 percent in FY 2008/09 and 53.8 percent in FY 2009/10. The average change rate is 47.68 percent. Standard deviation is 14.64401.

### 4.3.5 Analysis of Capital Structure

The analysis of capital structure is a concept of vital importance for this study. Here, capital structure adequacy on risk weighted assets and both NI and NOI approach are considered to analyze the capital structure of the overall capitalization.

#### 4.3.5.1 Net Income Approach (overall Capitalization Rate-$K_o$)

The total market value of firm is simply obtained by adding the market value of debt to the market value of equity.

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

(Value of the firm V= Market value of Debt + Market Value of Equity)

**Table: 4.32**

**Overall Capitalization**

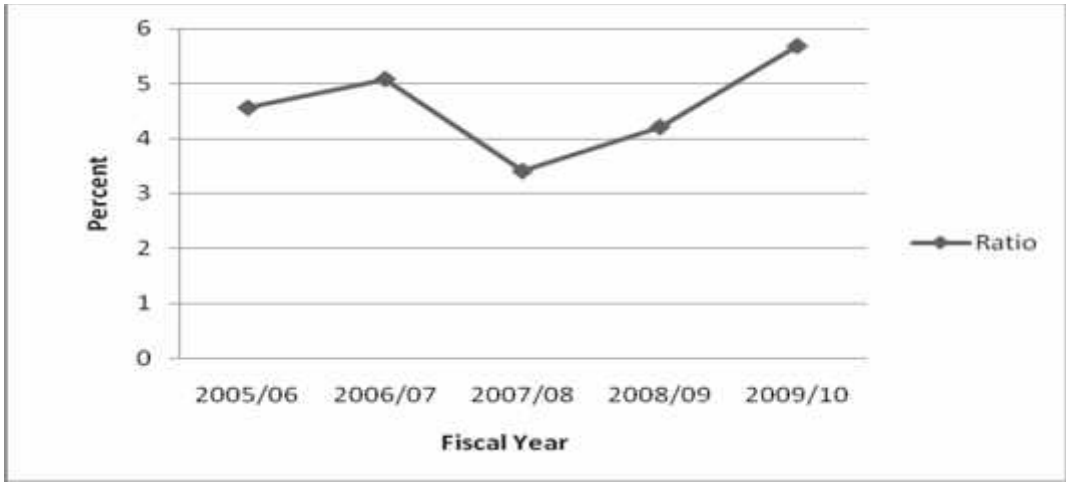
Amount in Million

| FY | Value of the Firm | EBIT | Ratio |
|---|---|---|---|
| 2005/06 | 5590 | 255 | 4.56 |
| 2006/07 | 8360 | 425 | 5.08 |
| 2007/08 | 18968 | 647 | 3.41 |
| 2008/09 | 24986 | 1050 | 4.21 |
| 2009/10 | 31498 | 1790 | 5.68 |
| **Average** | 17880.4 | 833.4 | 4.588 |
| **Standard deviation** | | | 0.8752 |
| **Correlation coeffi-cient** | | | 0.963 |
| **PE(r)** | | | 0.022 |

*Source: Annual Report of SBL 2009/10*

**Figure: 4.32**

**Overall Capitalization Rate**




According to the net income approach, the overall capitalization rate ($k_o$) in FY 2005/06 is 4.03 percent, in FY 2006/07 $k_o$ is 5.08 percent, in FY 2007/08 $k_o$ is 3.41 percent, in FY 2008/09 $k_o$ is 4.61 percent and in FY 2009/10 $k_o$ is 5.68 percent.

The average capitalization rate $k_o$ in net income approach is 4.488 percent. Standard deviation is 0.8752, correlation coefficient and PE is 0.963 and 0.022 of overall capitalization rate.

### 4.3.5.2 Net Operating Income (NOI) Approach (Equity Capitalization Rate – $K_e$)

The net operating income approach focus on the equity capitalization rate and appears as irrelevancy theory of capital structure, as already explained in detail in chapter II. According to this approach, overall capitalization rate ($K_o$), as well as the debt capitalization rate ($K_d$), independent of degree of leverage. However, the equity capitalization rate, increase linearly with 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 is computed as follows:

$$K_e = \frac{\text{Earning Before Tax}}{\text{Market value of Equity}}$$

**Table: 4.33**

**Equity Capitalization Rate**

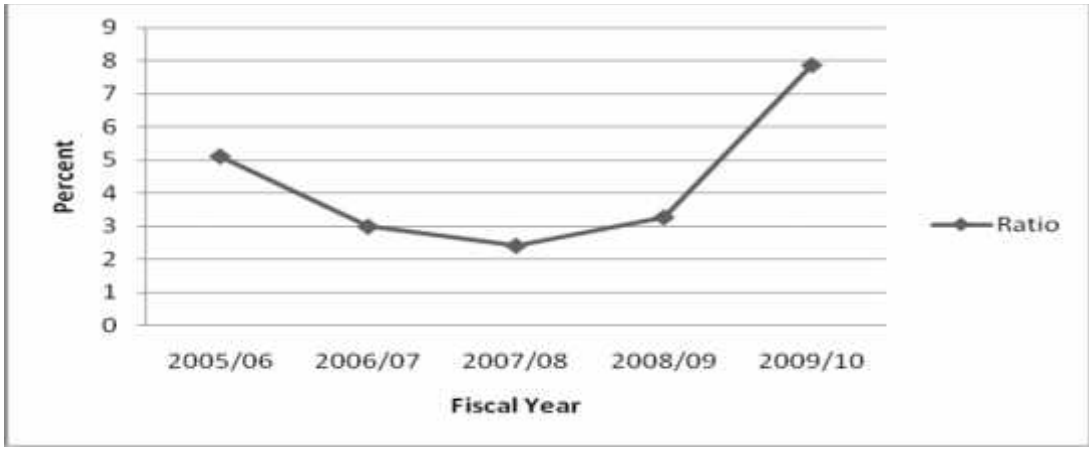
Amount in Thousand

| FY | MV Equity | EBT | Ratio |
|---|---|---|---|
| 2005/06 | 1800 | 92 | 5.11 |
| 2006/07 | 4668 | 139 | 2.98 |
| 2007/08 | 9025 | 217 | 2.4 |
| 2008/09 | 9522 | 310 | 3.26 |
| 2009/10 | 4862 | 383 | 7.87 |
| **Average** | 5975.4 | 228.2 | 4.324 |
| **Standard deviation** | | | 2.56269 |

*Source: Annual Report of SBL 2009/10*

**Figure: 4.33**

**Equity Capitalization Rate**




According to the net operating income approach the equity capitalization rate ($k_e$) in FY 2005/06 is 5.11 percent, in FY 2006/07 $k_e$ is 2.98 percent, in FY 2007/08 is 2.40 percent, in FY 2008/09 is 3.26 percent and in FY 2009/10 $k_e$ is 7.87. The average capitalization rate $k_e$ in net operating income approach is 4.324 percent. The standard deviation of capitalization rate is 2.56269.

## 4.4 Statistical Analysis

### 4.4.1 Correlation coefficient analysis

Two variables are said to have "correlation" when they are so related that the change in the value of once variable is accomplished by the change in the value of the other. The measure of correlation is called correlation coefficient summarized in one figure, the degree and direction of movement. But the important things that is to be noted here is that correlation analysis only help s in determining the extent to which the two variables are considered but does not tell us about cause and effect relationship. Though, there is a high degree of correlation between two variable one cannot say which one is the cause and which one the effect.

**Table: 4.34**

**Correlation coefficient**

| S.N. | Particulars | r | $r^2$ | PE (r) | 6 x PE | Level of Signific-ance |
|---|---|---|---|---|---|---|
| 1 | Equity capital & Debt capital | 0.938 | 0.8798 | 0.0362 | 0.2172 | Significant |
| 2 | Total Assets & Equity | 0.942 | 0.8874 | 0.034 | 0.204 | Significant |
| 3 | Net Income & Operating Income | 0.984 | 0.968 | 0.00958 | 0.05748 | Significant |
| 4 | NI & Shareholders' Equity | 0.953 | 0.908 | 0.0277 | 0.1662 | Significant |
| 5 | Net Income & Total Deposit | 0.988 | 0.976 | 0.0072 | 0.0432 | Significant |
| 6 | Net interest margin | 0.999 | 0.998 | 0.00062 | 0.00372 | Significant |
| 7 | Total assets and Total deposit | 0.984 | 0.968 | 0.0096 | 0.00576 | Significant |
| 8 | ROE & Cr to Deposit | 0.247 | 0.610 | 0.4199 | 2.520 | Insignificant |
| 9 | Cr. To dep. & ROA | 0.921 | 0.848 | 0.0687 | 0.407 | Significant |
| 10 | EBIT & Int. Expenses | 0.995 | 0.990 | 0.00265 | 0.0001 | Significant |
| 11 | Value of the firm & EBIT | 0.963 | 0.9274 | 0.022 | 0.132 | Insignificant |

### 4.4.1.1 Coefficient of Correlation between Equity capital & debt capital

It shows the clear evidence of significant association between these variables. The computed value of 'r' indicates a cause and affect relation, because 6 x PE is 0.2172. r < 6 x PE, so its level of significant is positive.

### 4.4.1.2 Coefficient of Correlation between Total assets and Total equity

The correlation coefficient between Total assets and equity is 0.942. Coefficient of correlation determinations ($r^2$) is 0.8874, whose PE is 0.0340 and 6 x PE is 0.214 r > 6 x PE, so its level of significant is positive. Or it is significant. When, the bank increases the equity the total assets will be increases, and vice versa.

#### 4.4.1.3 Coefficient Of Correlation between Net Income and Operating Income

The correlation coefficient between net income and operating income is 0.984. Coefficient of correlation determinations ($r^2$) are 0.968, which PE is 0.00968 and 6 x PE is 0.05748. r > 6 x PE, so its level of significant is positive. Or it is significant. When, the operating income is increase the net income is increases and vice versa.

#### 4.4.1.4 Coefficient of Correlation between net income and share holders equity.

Coefficient of Correlation between net income and share holders equity is 0.953, which PE is 0.0277 and 6 x PE is 0.1662. r > 6 x PE, so its level of significant is positive. When the bank increases the shareholders equity, the net income will increases and vice versa. It means a cause and affects relation

#### 4.4.1.5 Coefficient of Correlation between net income and total deposit

Coefficient of Correlation between net income and total deposit is 0.988. A coefficient of correlation determination ($r^2$) is 0.976, which PE is 0.0072 and 6 x PE is 0.0432. r > 6 x PE, so its level of significant is positive. It indicates that, net income and total deposit is that of a cause and affects one.

#### 4.4.1.6 Coefficient of Correlation between net interest earning and int. earning assets

Coefficient of Correlation between net interest earning and interest earnings assets is 0.999, which PE is 0.0.0062 and 6 x PE is 0.00372. r > 6 x PE, so its level of significant is positive. Or it is significant. It says that a cause and affect relation.

#### 4.4.1.7 Coefficient of Correlation between Total assets and total Deposit

According to table 4.34, which PE is 0.0096 and 6 x PE is 0.0576. r > 6 x PE, so its level of significant is positive. Or it is significant. Hence the relationship between total assets and total debt is that of a cause and effect relationship.

#### 4.4.1.8 Coefficient of Correlation between ROE and Cr. To Deposit

According to table 4.34, ROE and Credit to deposit is not that of a cause and affect relation, because which PE is 0.4199 and 6 x PE is 2.520. r < 6 PE, so its level of significant is negative. Or it is insignificant.

#### 4.4.1.9 Coefficient of Correlation between ROA and Cr. To Deposit

Coefficient of Correlation between ROA and Credit to Deposit is 0.921, which PE is 0.0687 and 6 x PE is 0.407. r > 6 x PE, so its level of significant is positive. It means, there is a clear evidence of significant association between two variables or cause and effect relationship.

#### 4.4.1.10 Coefficient of Correlation between EBIT and Interest Expenses

Coefficient of Correlation between EBIT and Interest Expenses is a 0.995. There is a significant relationship. It means that the relation between two variables is cause and effect.

#### 4.4.1.11 Coefficient of Correlation between Value of the firm and EBIT

A coefficient of correlation determination ($r^2$) is 0.9274, which PE is 0.022 and 6 x PE is 0.132. r > 6 x PE, so its level of significant is positive. Hence the relation between $v_o$ and EBIT is that of a cause and affect one.

### 4.5 Major Finding Of the study

- The bank increased authorized capital from 1000 million to 3000 million in FY 2008/09, and increases its issue capital. The bank has a paid capital of Rs 952.2 million.
- On total paid up capital the bank maintain 7:3 up to FY 2007/08 from public issue and in FY 2008/09 ,the bank maintain 51: 49 between promoters and public share holders.
- The bank collects capital from different sources like deposit and borrowing, shareholders equity, debenture and other sources. The bank collect maxi mum fund from deposit and borrowings. The bank issues debenture in FY 2008/09.
- The bank is able to collect the highest amount of deposit in the year 2008/09. The proportion over total liabilities and capital is 84.216 percent in average.

- The bank has various schemes on deposit: fixed, Call, Saving, and non-interest bearing deposit. The bank uses the maximum fund from fixed, call, saving and non-interest bearing deposit respectively.
- Total liabilities and capital among the five study years, the maximum is in 2009/10. The proportion of share capital to liabilities is in decreasing and increasing trend. The average of share capital to total liabilities is 17.6.
- The reserve and surplus is in increasing trend in FY 2009/10 it has decreased. Its proportion with the total liabilities is also increasing. The average proportion of reserve and surplus is 1.9571 percent. The highest Reserve and Surplus is in FY 2008/09.
- The Borrowing is in increasing trend. Its proportion with the total liabilities is also increasing. The average proportion of Borrowing is 2.7386 percent. The highest borrowing is in FY 2006/07.
- The Bills Payable is in increasing trend. Its proportion with the total liabilities is also increasing. The average proportion of Bills Payable is 0.1143 percent. The highest Bills Payable is in FY 2009/10.
- The bank issues SBL debenture 2072 BS at 8.5 percent p.a. at par 1000. This debenture is matured at 2072 BS. The total amount collected from issue of debenture is Rs 22, 77, 70,000.
- The average debt ratio is 90.13 percent, which indicate the ratio of debt on assets. Debt to equity ratio measure the ratio of debt on equity. The average debt to equity ratio is 170.314 percent.
- Credit to deposit ratio is important ratio. Credit to debt ratio measure the efficiency of credit creation through the investment of fund received by the customer. The average ratio of credit to debt ratio is 91.0 percent. This ratio is good for the company. The ratio is decrease every year because the deposit is increased. SBL last year C/D ratio is 83.65 percent.
- The net income of SBL in FY 2009/10 is Rs 241 million. Total net income of all 'A' class commercial bank is Rs 14142.6922 as on 15-Jul-2010. Average return of all 'A' class commercial bank is Rs 565.72 million.

- The equity multiplier ratio is amount of assets for each amount of equity. It is the relationship between total assets and equity. The average equity multiplier is 2.44 times. This ratio is increase every year.
- Profit margin measure the relationship of net income and operating income. The average profit margin is 35.662 percent. This margin rate is decrease every year but increase in FY 2009/10.Although, the ratio during the five year is good.
- The average return on assets is 1.274 percent, average return on equity is 12.3654 percent, and average interest margin ratio is 3.094 percent. Return on deposit describe in the return on total deposit analysis. The profit is sufficient or not and what strategy to be implemented for profit is described by this ratio. The ratio is in decreasing trend.
- Theoretical how much earning per share is calculated by earning per share formula. The average EPS is Rs 18.22. The maximum EPS is in FY 2008/09, which is Rs 22.89. This is help to maximize the shareholders wealth.
- The Retention ratio of SBL is 100 percent, 99.29 percent 99.29 percent, 89.47 percent and 91.58 in the FY 2005/06, in FY 2006/07, in FY 2007/08 in FY 2008/09 and in FY 2009/10 respectively.
- Market value per share is in increasing and decreasing trend. The average change rate is 55.02 percent and average value of market per share is Rs 734.4.
- The equity market capitalization in year 2005/06 is Rs 1800 Million, in FY 2006/07 is Rs 4668 million which is increased by 62.76 percent, in FY 2007/08 is Rs 9025 which is increased by 93.34 percent and in FY 2009/10 is 4862 it means decreased by 84.544 percent.
- Price earning ratio reflects the price currently being paid by the market for each rupee of currently reported EPS. The trend is increasing on till FY 2007/08 after than decreased. The average P/E ratio is 40.7 times and average change rate is 47.68 percent. Overall trend of price earning ratio shows the fluctuating trend.

- The interest margin measures the profitability of the bank. It differentiates between interest earning and interest expenses. The average ratio is 3.094 percent and the highest ratio is 3.42 percent at FY 2005/06. Average changing rate is 7.055 percent.
- The correlation coefficient between equity capital and debt capital, total assets and Total Equity, net income and operating income and net income and shareholders equity's level of significant is positive. Or they have positive relation.
- Net income and total deposit, total assets and total debt, Cr. to deposit and ROA's level of significant is also positive. They have positive relation.
- The correlation coefficient between EBIT and Interest expenses is also positive. It means the bank is able to pay its interest to its depositors.
- The correlation coefficient of net interest margin, ROE and Cr. to Deposit and value of the firm and EBIT are insignificant. They have not any significant relation between them.
- The composition of total capital is made by core capital and supplementary capital. Adequacy of capital fund on weighted assets in FY2005/06, adequacy of the capital fund on weighted assets is 14.16 which is above than the NRB standard, In FY 2006/07, 2007/08 in FY 2008/09 and FY 2009/10 are 11.84 percent, 11.14, 10.69 and 10.04 percent respectively. All the period the standard adequacy under NRB rule is sufficient.
- According to the net income approach the average overall capitalization rate ($k_o$) in net income approach is 4.588 percent. The standard deviation is 0.8752.
- According to the net operating income approach the average equity capitalization rate ($k_e$) in net operating income approach is 4.324 percent. The standard deviation of capitalization rate is 2.5627. The average capitalization rate ($k_e$) in net operating income approach is 4.324 percent. The standard deviation of capitalization rate is 2.5627. The average equity capitalization rate is 7.87 percent in FY 2008/09.

# CHAPTER-V

# SUMMARY, CONCLUSION AND RECOMMENDTION

This chapter focuses on finding and recommendation, which are derived from the analysis of capital structure of SBL.

## 5.1 Summary

Capital structure represents the combination of long sources of capital. It is the left hand side part of the balance sheet. So it is also called liabilities part. Nepal is developing country financially it has been highly poor. The main concept of the study is to show the banking industry in Nepal and the role of SBL and the capital structure part of the SBL.

The main objectives are to examine the existing financial position regarding capital structure, describe the relationship between deposit capitalizations of SBL, to analyze the composition as well as the mixture of debt and equity, and to examine the different profitability ratio.

This study covers only five years data. This study is based on secondary collected from annual report, financial statements etc. The study is concern about the capital structure of SBL. Capital structure is influenced by various factors, but this study excludes those factors. For our convenience, annual data has been taken which becomes easy for us to perform the study.

## 5.2 Conclusion

The growth and increasing integration of the word's economy has been parallel by expansion of global banking activities. Nepal though a developing country, couldn't identify the fact that commercial banking which is responded by extending loan and developing new highly innovative financial techniques that laid the foundation for totally new approaches to the provision of banking services on the basis of entire research study, the analysis of capital structure is very significant in project appraisal of shift competition. Most of the banks cannot manage the cur-

rent assets. Because of the inefficient current management company cannot fulfill the organizational objective, i.e. to earn maximum profit and maximizing the shareholder equity. The banks performance can be seen by various ways. Different analysis gives different recommendation and suggestion to the bank. On the basis of above analysis and description the recommendation has been made for:

- The capital and liabilities analysis says that the overall condition and position of capital and liabilities is better.
- Capital structure position analysis says that the proportion of debt and equity is in normal position as like others. Equity capitalization and overall capitalization both analysis demand the higher profit of the firm.
- Return on total deposit seems better. But in case of fixed deposit, because of other deposits have been properly mobilized but fixed deposit is not mobilized in that manner. Study demands for letter investment of fixed deposit.
- The bank has been able to show satisfactory ratio of return on total assets, return on equity ratio and better. Earnings per share should be in increasing trend, although EPS decreased in FY 2009/10. Continuous progress in EPS will prosper the firm in share market. It means, dividend per share is also optimum. Because in crises condition more reserve are needed than in past. Market value of the firm is not satisfactory.
- from the study of the bank is found to be highly levered. The company's financial mix accounts a higher proportion of debt and it is increasing every year.
- The correlation coefficients of the variable of selected bank for the statistical analysis are found positive to each other. The coefficients are all statistically significant in more than average banks. A positive correlation means both of the variables are moving toward the same direction.
- The bank major indicator such as: Total deposit, total capital and liabilities, equity capitalization and net profit are less than average of all 'A' class commercial banks but the bank is increases these all variables than previous year.

- In brief, it is found that the bank is performing well. The bank is performing well among all commercial banks. SBL should open all the doors to make it more competent. Especially it should invest properly and profit should be generated more than in past. The study's main demand is to invest in well manner and increase profit than two times.

Studies “A case study on capital structure of Siddhartha bank ltd.” specifies the specific objective were analyze the capital of Siddhartha bank ltd. To show the financial position, examine the different tools such as graph, percentage, diagram, mean, standard deviation and PE of correlation. It means, total capital and liabilities is increase. Deposit is the highest, amount of the bank. Among the various deposits: fixed deposit is the highest contribution in deposit, than called deposit, saving deposit and non-interest paying deposit respectively. This suggests the deposit is the main concern to the capital structure, it affects an investment policy. If the bank can increase more fixed deposit as a long term debt investment became more possible and 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. The bank issues SBL debenture 2072 BS at 8.5 percent p.a. at par Rs 1000. This debenture is matured at 2072 BS. The total amount collected from issue of debenture is Rs 22, 77, 70,000. Debt and equity are properly mixed. The bank has a sound capital increase policy under the NRB rule. The bank is willing to offer the bonus share and right share offering to their existing shareholder to fulfill the requirement. Even though, there is cut throat competition in this industry and the country's whole economy is down streaming, this bank is rated as a successful bank and running well among about three dozen competitors. It does not need other square of fund. It is satisfactory symbol for all the stakeholders of the bank.

### 5.3 Recommendation

Giving recommendations to such huge organizations at this age and with experience just few weeks old itself is amazing. However as per the requirements of the report, there are some recommendation to the Bank and expect that the Bank would take these comments positively. If these comments are taken positively, it is

sure that they would contribute something in achieving the very objectives and mission of the Bank. On the basis of above observation and field work study some recommendation are implemented which may be helpful for further progress of SBL.

- Firstly, the Bank needs to become more selective in its idea of cost consciousness. No doubts, the idea of cost consciousness is instrumental for the success of any organization but it should be implemented on a selective basis that it does not harm the other needful aspects. It is believed that if organizations become too much cost conscious, they might become unconscious. In longer terms, overly cost conscious organizations destroy the creative skills of its members as they will become reluctant to present their ideas due to the fear of being turned down.
- The Bank seems to be only slightly interested in maintaining a formal information system regarding its competitors. The importance of competitor Information System is immense in present context to make one self proactive to the deeds of the competitors, and becoming proactive serves in more than one ways than being reactive.
- The bank should also arrange the frequent training program to the employee for professional development that makes them to provide quality services to the customers, which increase efficiency.
- The Bank should design new deposit products to improve its deposit position by targeting those segments of markets that have not been previously targeted. Such target groups may be aged people, rural people, working class, etc. These areas may be good source of low cost funds.
- SBL is still fighting with its old banking software. The software seems to be outdated due to the introduction of advanced one.

Finally, it can be said that the study of a capital structure cannot be neglected by selected commercial banks. Otherwise it can seriously ride their financial viability. Thus, managers should understand the factors determining capital structure. Some of the Nepalese joint venture banks are suffering from the huge losses due to their administrative negligence in day to day operation and lack of specific Analysis of capital structure policy.

## BIBLIOGRAPHY

### Books


Bhattarai Rabindra, (2002), *Capital Structure Management*, Second edition, Buddha Academic publishers and distributors, Kathmandu.

Cooper, Donald R. and Schindler, Pamela S. (1998), *Business Research Methods*, Sixth edition, a division of the IRWIN/MCGRAW-HILL SERIES company, New York.

Joshi Puspa Raj, (2061), *Research Methodology*, Second edition, Buddha Academic publishers and distributors, Kathmandu.

Pandey, I.M, (1992), *Financial Management*, Vikash Publishing House (Pvt.) Ltd., New Delhi.

Pant, P.R. and Wolff, H.K. (1999), *A Hands Book for Social Science Research and Thesis Writing*, Kathmandu: Buddha Academy publishers and distributors, Kathmandu.

Sapkota Rajendra, (2001), *Capital Structure Management theory and practice*, First edition, Vidyarthi Pustak Bhandar Publishers and distributors, Bhotahity, Kathmandu.

Shrestha, Manohar Krishna and Bhandari, Dipak. (2008), *Financial Markets and Institutions,* Asmita Books publishers and distributors (Pvt.), Putalisadak-31, Kathmandu.

Wolff, H.K. & Pant, P.R., (1975), *A Handbook for Social Science Research and Thesis Writing***,** Kathmandu: Research Division, Tribhuvan University.


### Journals


Manandhar, K B (2008), "Management Challenges in Nepalese Banking Sector, Byavasthapan", *Nepalese Journal of Management*, year 27, Vol 27.

Pant,Radhesh (2008), "Financial Sector: Challanges and Oppertunities, Byavasthapan," *Nepalese Journal of Management*, year 27, Vol 27.

Shrestha, Manohar Krishna (1985), "Analysis of Capital Structure in Selected Enterprises". *Nepalese Journal of Public Administration.* 42nd Issue, Yr 16.

Shrestha, R.D. (2003), “Focus on Capital Structure Selected and Listed Public Company.” *Pravaha, Journal of Management*, Nepal Commerce Campus, vol.10(1):40, Kathmandu.

Modigliani, F. and Miller, M.H. (June 1958), “The Cost of Capital Corporate Finance and Theory of Investment**.”** *American Economic Review*. Vol. (II).12.

Mishra, Sarbendra (August 2007), “Evaluating New Monetary Policy,” *New Business Age*, Vol 6, No. 12.

Pandey, Siddhant Raj (December 2007), “Finance Companies Past Present and Future,” *New Business Age*, Vol 7, No. 4

**Thesis**

Baidya, Nibedan (2004), "*Capital Structure Management of Manufacturing Companies Listed in NEPSE"*. An unpublished Masters Degree Thesis, Submitted to Shanker Dev Campus.

Dhakal, Rajendra (2008), *“A study on capital structure management of selected commercial banks (with special reference to Himalayan Bank, Nepal SBI Bank, Everest Bank And Nepal Investment Bank Ltd.),”* An unpublished Masters Degree Thesis, Submitted to Shanker Dev Campus.

Mishra, Niraj (2005), *"A Study of Capital Structure Management of Selected Manufacturing Companies".* An unpublished Masters Degree Thesis, Submitted to Shanker Dev Campus.

Parajuli, Shambhu Prasad (2001), "*Capital Ownership Structure and its Impact onProfitability of Nepal Lever Ltd.*" An unpublished Masters Degree Thesis, Submitted to Shanker Dev Campus.

Pradhan, Rima (2007), *“A comparative analysis of capital structure Management between Nepal Bangladesh Bank Ltd. and Himalayan Bank Ltd.”* An unpublished Masters Degree Thesis, Submitted to Shanker Dev Campus.

Prasai, Shanti Rai (1999): "*A Study on Capital Structure of Nepal Bank limited"*. An unpublished Masters Degree Thesis, Submitted to Shanker Dev Campus.

Rajwlawat, Kamal (1999), "*A Study on Capital Structure of Necon Air Ltd."* An unpublished Masters Degree Thesis, Submitted to Shanker Dev Campus.

Sapkota, D. R. (2006), "*Capital Structure Management of Nabil Bank Ltd*." An unpublished Masters Degree Thesis, Submitted to Shanker Dev Campus.

Sapkota, Dinesh Raj (2011), "*Capital Structure of Nabil Bank Limited*." An Unpublished Master Degree Dissertation, Kathmandu: Shanker Dev Campus, Tribhuvan University.

Subedi, Susil Dev (2005), *"A Study on Capital Structure of Nabil Bank Ltd.*" An unpublished Masters Degree Thesis, Submitted to Shanker Dev Campus.

Thapa, Pratima (2010), "*Analysis of Capital Structure of Joint Venture Banks in Nepal*," An Unpublished Master Degree Dissertation, Kathmandu: Central Department of Management, Tribhuvan University.

**Others**

Naya Patrika Daily, Tuesday 15, December, 2010

Siddhartha Bank Ltd, Annual Report 2062/2063 to 2066/2067.

**Websites**

www.nepalstock.com

www.nrb.org.np

www.siddharthabanks.com

## APPEDIX -1

**Calculation of (r) and (PE) between Total assets and total debt**

| Year | Assets (X) | Debt (Y) | $\sum x(X-\bar{X})$ | $\sum y(Y-\bar{Y})$ | $\sum x(X-\bar{X})^2$ | $\sum y(Y-\bar{Y})^2$ | $\sum x(X-\bar{X})\sum y(Y-\bar{Y})$ |
|---|---|---|---|---|---|---|---|
| 2005-2006 | 4757 | 4089 | -8256 | -7792 | 68161536 | 60715264 | 64330752 |
| 2006-2007 | 7955 | 7066 | -5058 | -4815 | 25583364 | 23184225 | 24354270 |
| 2007-2008 | 11669 | 10458 | -1344 | -1423 | 1806336 | 2024929 | 1912512 |
| 2008-2009 | 17882 | 16385 | 4869 | 4504 | 23707161 | 20286016 | 21929976 |
| 2009-2010 | 22803 | 21409 | 9789 | 9528 | 95824521 | 90782784 | 93269592 |
| | ∑X=65065 | ∑Y=59407 | | | $\sum\sum x(X-\bar{X})^2$=15082918 | $\sum\sum y(Y-\bar{Y})^2$=196993218 | $\sum x(X-\bar{X})\sum y(Y-\bar{Y})$ = 205797102 |

$$\bar{X} = \frac{\sum X}{N} \qquad \bar{Y} = \frac{\sum Y}{N}$$

$$\bar{X} = \frac{65035}{5} \qquad \frac{59407}{5}$$

=13013 =11881

Correlation coefficient (r) = $\dfrac{\sum x(X-\bar{X})\sum y(Y-\bar{Y})}{\sqrt{(x(X-\bar{X})^2} \mid \sqrt{(y(Y-\bar{Y})^2}}$

$$= \frac{205797102}{\sqrt{215082918 \mid 196993218}}$$

$$= 0.984$$

(Probable error) PE = $\dfrac{0.6745(1-r^2)}{\sqrt{N}}$

$$= \frac{0.6745\{1-(0.984)^2\}}{\sqrt{5}}$$

$$= \frac{0.021411}{2.24}$$

= 0.0096

## APPENDIX -2

### Calculation of (r) and (PE) between Equity Capital and Debt Capital

| Year | Equity (X) | Debt (Y) | $f_x Z\bar{x}$ | $f_y Z\bar{y}$ | $f_x Z\bar{x}^2$ | $f_y Z\bar{y}^2$ | $f_x Z\bar{x} f_y Z\bar{y}$ |
|---|---|---|---|---|---|---|---|
| 2005-2006 | 1800 | 4089 | -4175 | -7792 | 17430625 | 60715264 | 23531600 |
| 2006-2007 | 4668 | 7066 | -1307 | -4815 | 1708249 | 23154225 | 6293205 |
| 2007-2008 | 9025 | 10458 | 3050 | -1423 | 9302500 | 2024929 | -4340150 |
| 2008-2009 | 9522 | 16385 | 3547 | 4504 | 12581209 | 20286016 | 15975688 |
| 2009-2010 | 4862 | 21409 | -1113 | 9528 | 1238769 | 90782784 | -10604664 |
| | ∑X=29877 | ∑Y=59407 | | | $\sum f_x Z\bar{x}^2$= 42261352 | $\sum f_y Z\bar{y}^2$= 196993218 | $f_x Z\bar{x} f_y Z\bar{y}$ = 30855679 |

$\bar{X} = \frac{\sum X}{N}$ Or $\bar{Y} = \frac{\sum Y}{N}$ or

$\frac{29877}{5}$ = 5975 $\frac{17581}{5}$ = 11881

Correlation coefficient (r) = $\frac{f_x Z\bar{x} f_y Z\bar{y}}{\sqrt{(x Z\bar{x})^2} \mid \sqrt{(y Z\bar{y})^2}}$

$= \frac{30855679}{\sqrt{42261352} \mid 16993218}$

= 0.938

Probable error (PE) = $\frac{0.6745(1-r^2)}{\sqrt{N}}$

$= \frac{0.6745\{1-(0.938)^2\}}{\sqrt{5}}$

$= \frac{0.08104}{2.24}$

= 0.0362

## APPENDIX-3

### Calculation between (r) and (PE) of EBIT and Interest

| Year | EBIT (X) | Interest (Y) | $dx = X - \bar{X}$ | $dy = Y - \bar{Y}$ | $dx^2$ | $dy^2$ | $dx \cdot dy$ |
|---|---|---|---|---|---|---|---|
| 2005-2006 | 255 | 154 | -634 | -457 | 401956 | 208849 | 289738 |
| 2006-2007 | 425 | 272 | -464 | -339 | 215296 | 114921 | 157296 |
| 2007-2008 | 627 | 408 | -262 | -203 | 68644 | 41209 | 53186 |
| 2008-2009 | 1150 | 814 | 261 | 203 | 68121 | 41209 | 52983 |
| 2009-2010 | 1790 | 1407 | 901 | 796 | 811801 | 633616 | 717196 |
| | $\sum X = 4447$ | $\sum Y = 3055$ | | | $\sum dx^2 = 1565818$ | $\sum dy^2 = 1039804$ | $\sum dx \cdot dy = 1270399$ |

$$\bar{X} = \frac{\sum X}{N} \qquad \bar{Y} = \frac{\sum Y}{N}$$

$$= \frac{4447}{5} = 889 \qquad = \frac{3055}{5} = 611$$

$$\text{Correlation coefficient (r)} = \frac{\sum dx \cdot dy}{\sqrt{(\sum dx^2)} \times \sqrt{(\sum dy^2)}}$$

$$= \frac{1270399}{\sqrt{1565818} \times \sqrt{1039804}}$$

$$= 0.995$$

$$\text{Probable error (PE)} = \frac{0.6745(1-r^2)}{\sqrt{N}}$$

$$= \frac{0.6745\{1-(0.995)^2\}}{\sqrt{5}}$$

$$= 0.00265$$

**APPENDIX-4**

**Calculation of (r) and (PE) between Net income and operating income**

| Year | NI (X) | Ope. Income (Y) | $f_x Z\bar{x}$ | $f_y Z\bar{y}$ | $f_x Z\bar{x}^2$ | $f_y Z\bar{y}^2$ | $f_x Z\bar{x} f_y Z\bar{y}$ |
|---|---|---|---|---|---|---|---|
| 2005-2006 | 65 | 187 | -87 | -241 | 7569 | 58081 | 20967 |
| 2006-2007 | 95 | 263 | -57 | -165 | 3249 | 27225 | 9405 |
| 2007-2008 | 143 | 402 | -9 | -26 | 81 | 676 | 234 |
| 2008-2009 | 218 | 570 | 66 | 142 | 4356 | 20164 | 9372 |
| 2009-2010 | 241 | 717 | 89 | 289 | 7921 | 83521 | 25721 |
| | ∑X =762 | ∑Y=2139 | | | $\sum f_x Z\bar{X}^2$ =23176 | $\sum f_y Z\bar{y}^2$ =189667 | $f_x Z\bar{x} f_y Z\bar{y}$ =65699 |

$\bar{X} = \frac{\sum X}{N}$ or, $\bar{Y} = \frac{\sum Y}{N}$ or,

$= \frac{762}{5}$ =152 $= \frac{2139}{5}$ = 428

Correlation coefficient (r) = $\frac{f_x Z\bar{x} f_y Z\bar{y}}{\sqrt{(x Z\bar{x})^2} \sqrt{(y Z\bar{y})^2}}$

$= \frac{65699}{\sqrt{23176} \sqrt{189667}}$

= 0.984

Probable error (PE) = $\frac{0.6745(1-r^2)}{\sqrt{N}}$

$= \frac{0.6745\{1-(0.984)^2\}}{\sqrt{5}}$

= 0.00958

## APPENDIX-5

### Calculation of (r) and PE between Value of the firm ($V_0$) and EBIT

| Year | $V_0$ (X) | EBIT (Y) | $\sum x\,(x-\bar{x})$ | $\sum y\,(y-\bar{y})$ | $\sum x\,(x-\bar{x})^2$ | $\sum y\,(y-\bar{y})^2$ | $\sum x\,(x-\bar{x}) \sum y\,(y-\bar{y})$ |
|---|---|---|---|---|---|---|---|
| 2005-2006 | 5590 | 255 | -12290 | -578 | 151044100 | 334084 | 7103620 |
| 2006-2007 | 8360 | 425 | -9520 | -408 | 90630400 | 166464 | 3884160 |
| 2007-2008 | 18968 | 647 | 1088 | -186 | 1183744 | 34596 | 202368 |
| 2008-2009 | 24986 | 1050 | 7106 | 217 | 50495236 | 47089 | 1542002 |
| 2009-2010 | 31498 | 1790 | 13618 | 957 | 185449924 | 915849 | 13032426 |
| | ∑X = 89402 | ∑Y=4167 | | | $\sum \sum x\,(x-\bar{x})^2$= 478803404 | $\sum \sum y\,(y-\bar{y})^2$ =1498082 | $\sum x\,(x-\bar{x}) \sum y\,(y-\bar{y})$ =25764576 |

$$\bar{X} = \frac{\sum X}{N} \qquad \bar{Y} = \frac{\sum Y}{N}$$

$$= \frac{89402}{5} = 17880 \qquad = \frac{4167}{5} = 833$$

$$\text{Correlation coefficient (r)} = \frac{\sum x\,(x-\bar{x}) \sum y\,(y-\bar{y})}{\sqrt{(x-\bar{x})^2} \times \sqrt{(y-\bar{y})^2}}$$

$$= \frac{25764576}{\sqrt{478803404} \times 1498082}$$

$$= 0.963$$

$$\text{Probable error (PE)} = \frac{0.6745\,(1-r^2)}{\sqrt{N}}$$

$$= \frac{0.6745\,\{1-(0.963)^2\}}{\sqrt{5}}$$

$$= 0.022$$

**APPENDIX -6**

**Calculation of Average, Standard Deviation and C.V. of credit to deposit ratio**

| Year | Cr. To deposit. Ratio(X) | $X - \bar{X}$ | $(X - \bar{X})^2$ |
|---|---|---|---|
| 2005-2006 | 98.75 | 7.75 | 60.0625 |
| 2006-2007 | 95.35 | 4.35 | 18.9225 |
| 2007-2008 | 93.03 | 2.03 | 4.1209 |
| 2008-2009 | 85.18 | -5.82 | 33.8724 |
| 2009-2010 | 83.65 | -7.35 | 54.0225 |
| | $\sum X = 456$ | | $\sum (X - \bar{X})^2 = 171$ |

$$\bar{X} = \frac{X}{n} = \frac{456}{5} = 91$$

$$\text{Standard Déviation } (\pm) = \sqrt{\frac{\sum (X - \bar{X})^2}{n}} = \sqrt{\frac{171}{5}} = 5.85$$

$$\pm = 5.85$$

$$\text{Coefficient variance (CV)} = \frac{\sigma}{\bar{X}}$$

$$= \frac{5.85}{91} = 0.0643 = 6.43\%$$

## Appendix-7
## List of Commercial Banks

| S.N. | Name of Commercial Bank | Operation Date | Head office |
|---|---|---|---|
| 1 | Nepal Bank Ltd. | 1937/11/15 | Kathmandu |
| 2 | Rastriya Banijaya Bank | 1966/01/23 | Kathmandu |
| 3 | Agriculture Bank Ltd. | 1968/01/02 | Kathmandu |
| 4 | Nabil Bank Ltd. | 1984/07/16 | Kathmandu |
| 5 | Nepal investment Bank Ltd. | 1986/02/27 | Kathmandu |
| 6 | Standard Chartered Bank Ltd. | 1987/01/30 | Kathmandu |
| 7 | Himalayan Bank Ltd. | 1993/01/18 | Kathmandu |
| 8 | Nepal SBI Bank Ltd. | 1993/07/07 | Kathmandu |
| 9 | Nepal Bangladesh Bank Ltd. | 1993/06/05 | Kathmandu |
| 10 | Everest Bank Ltd. | 1994/10/18 | Kathmandu |
| 11 | Bank of Kathmandu Ltd. | 1995/03/12 | Kathmandu |
| 12 | Nepal credit & commercial Bank Ltd. | 1996/10/14 | Siddharthanagar |
| 13 | Lumbini Bank Ltd. | 1998/07/17 | Narayangadh |
| 14 | Nepal Industrial & commercial Bank Ltd. | 1998/07/21 | Biratnagar |
| 15 | Machapuchhre Bank Ltd. | 2000/10/03 | Pokhara |
| 16 | Kumari Bank Ltd. | 2001/04/03 | Kathmandu |
| 17 | Laxmi Bank Ltd. | 2002/04/03 | Birgunj |
| 18 | Siddhartha Bank Ltd. | 2002/12/24 | Kathmandu |
| 19 | Kist Bank Ltd. | 2003/2/21 | Kathmandu |
| 20 | Citizens Bank International Ltd. | 2007/06/21 | Kathmandu |
| 21 | Prime Commercial Bank Ltd. | 2007/09/24 | Kathmandu |
| 22 | Bank of Asia Ltd. | 2007/10/12 | Kathmandu |
| 23 | Sunrise Bank Ltd. | 2007/10/12 | Kathmandu |
| 24 | Development Bank Ltd. | 2001/01/23 | Kathmandu |
| 25 | NMB Bank Ltd. | 1996/11/26 | Kathmandu |
| 26 | Global Bank Ltd. | 2007/01/02 | Birgunj |
| 27 | Megha Bank Ltd. | 2010/07/23 | Kathmandu |
| 28 | Commerze & Trust Bank Ltd. | 2010/09/20 | Kathmandu |
| 29 | Civil Bank Ltd. | 2010/1215 | Kathmandu |
| 30 | Century Bank Ltd. | 2011/03/10 | Kathmandu |
| 31 | Janata Bank Ltd. | 2010/04/05 | Kathmandu |

*Source: (www.nrb.org.np).*

## APPENDIX -8

## Balance Sheet (FY 2005/06 to FY 2009/10)

Amount in Millions

| Particular | Fiscal Year | | | | |
|---|---|---|---|---|---|
| | **2005/06** | **2006/07** | **2007/08** | **2008/09** | **2009/10** |
| Paid up capital | 500 | 600 | 828 | 952.2 | 1310.5 |
| Reserve & Surplus | 103 | 194 | 240 | 327 | 291.1 |
| Debenture & Bond | _ | _ | _ | 227.77 | 227.77 |
| Borrowing | 181 | 430 | 205 | 328 | 345 |
| Deposit | 3918 | 6625 | 10191 | 15855 | 20197 |
| Other Liabilities | 55 | 106 | 204 | 192.03 | 429.1 |
| **Total capital & Liabilities** | **4757** | **7955** | **11669** | **17882** | **22803** |
| | | | | | |
| Cash & Bank balance | 116 | 517 | 437 | 271 | 327 |
| Money & short notice | 100 | 229 | 585 | 485 | 2778 |
| Investment | 651 | 865 | 1150 | 2176 | 2453 |
| Loan & Advance | 3789 | 6223 | 9336 | 13329 | 16654 |
| Fixed deposit | 40 | 47 | 72 | 172 | 360 |
| Other assets | 61 | 73 | 89 | 172 | 230 |
| **Total assets** | **4757** | **7955** | **11669** | **17882** | **22803** |
| | | | | | |
| **Profit and Loss account** | | | | | |
| Interest Income | 306 | 482 | 730 | 1265 | 2018 |
| Interest Expenses | 154 | 272 | 408 | 814 | 1406 |
| A. Net Interest Income | 152 | 210 | 322 | 451 | 612 |
| Fees, Commission and Discount | 14 | 20 | 21 | 33 | 43 |
| Other Income | 10 | 19 | 36 | 46 | 51 |
| Foreign Exchange Gain/ Loss | 12 | 14 | 27 | 39 | 12 |
| B. Total Operating Income | 187 | 263 | 407 | 569 | 714 |
| Staff Expenses | 26 | 34 | 48 | 79 | 103 |
| Other Operating Expenses | 44 | 56 | 71 | 113 | 175 |
| C. Operating Profit Before provision | 117 | 174 | 287 | 376 | 438 |
| Provision for Possible Losses (Net) | 16 | 21 | 48 | 40 | 65 |
| D. Operating Profit | 101 | 153 | 239 | 335 | 373 |
| Provision for Bonus | 9 | 14 | 22 | 31 | 35 |
| Provision For Taxes | 26 | 44 | 74 | 92 | 105 |
| E. net Profit / Loss | 65 | 95 | 143 | 216 | 241 |