# CHAPTER I INTRODUCTION

# **1.1 BACKGROUND OF THE STUDY**

Capital structure is the composition of the debt and equity securities and is considered as financing decision undertaken by the financial manager. The financial manager must strive to obtain the best financing mix or optimum capital structure for his firm. The firm attains capital structure where the debt-equity proportion maximizes the market value of the shares .the uses of debt affect the return and risk of the equity shareholder, it increases the return on equity fund and at the same time it also increases risk. A proper balance must be strike between the risk and return in order to maximize the market value of shares (Pandey, 1995:54).

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

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 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.

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# **1.2 STATEMENT OF THE PROBLEMS**

Nepalese companies are not taking Capital structure seriously. So, optimum capital structure does not exist at all. Companies are ruined by the excess burden of the cost of debt capital among the listed commercial bank.

Different companies have its own policy to operate business activities. Some business use only equity capital and others use only debt capital whereas some companies use both. So the determination of capital structure depends on company policy and cost of capital. In the beginning period of any companies they want to use only equity capital and do not want debt in their capital due to high interest.

In this situation, there might arise some question such as

- Why the commercial banks are not using optimum capital structure?
- Could there be any factors besides the capital structure that hinders the optimum capital structure and value of the firm as a whole?
- Are there any possibilities to reduce the cost of capital with change in leverage?
- To what extent, profitability has been raised?
- What is the relationship of capital structure and other variables?

# **1.3 OBJECTIVE OF STUDY**

The main objective of this study is to rest the relationship between capital structure and the value of the firm by analyzing the effect of financial leverage (debt-equity mix) on the return and risk. This study also attempts to find out the selected explanatory variables such as size, growth, risk, return dividend pay-out ratio, liquidity and earning variability.

- To examine the current capital structure of sample commercial banks.
- To analyze the capital of selected banks of mix of debt and equity.
- To analyze relationship between capital structure cost of capital and profitability.

# **1.4 SIGNIFICANCE OF THE STUDY**

The capital structure decision is a significant managerial decision. It influences the shareholders' return and risk. Consequently, the market value of the share is affected by capital structure decision

- The study compels the management of Joint Venture Banks Ltd. for self assessment of what they have done in the past and guides them in their future plans and program.
- The study enlightens the shareholders, depositors creditors about the financial performance of the bank
- Policy makers at the macro level that is government and NRB will also benefit regarding the formulation of further policies in regard to economic development.
- The customers, financing agencies, stock exchange and stock traders are interested in the performance of banks and the customers both can identity to which bank they could go. The financial agencies can understand where the funds are most secured and stock exchanges, stock broker can find the relative worth of stock of each bank

# **1.5 LIMITATION OF THE STUDY**

This study attempts to evaluate capital structure decision of Nepal's leading financial institution in the sector of banking transaction from 21 years. Following points can be considered as limitation for the study:

- This study is based on the secondary data like Balance Sheet, profit and loss account, other related journals.
- Only five year observation covering from F/Y 2003 to 2008. Different coverage of data limits the study, Conclusion is derived from above period of time
- The accuracy of study is based upon the record keeping of Joint Venture Banks and its accuracy.
- It only studies about capital structure and profitability where as ignores all other factors.
- Limited resources and time has been utilized for preparing thesis so micro analysis may not be available.

# **1.6 ORGANIZATION OF STUDY**

This study is divided into five chapters. Each of this chapter summarized and contents of each chapter of this study are mentioned here.

Chapter I- Introduction

Chapter II – Review of literature

Chapter III- Research Methodology

Chapter IV -Data presentation and interpretation

Chapter V – Summary, Conclusion and Recommedations

The first chapter deals with introduction, which includes general background, statement of the problem, objective of study, significance of study, Limitation of study, and Organization of study.

The second chapter deals with the review of the literature, which includes conceptual settings and major relevant studies with fund mobilization of a commercial joint venture bank.

The third chapter deals with the research methodology. It contains the research design, population and sample, source and types of data, data processing procedure and tools for analysis.

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

The fifth chapter or the last chapter presents the summary of the study and suggestion as well as recommendations. Besides this bibliography and appendices are incorporated at the end of the study.

# CHAPTER II REVIEW OF LITERATURE

This chapter deals with the basic concept of the factors, which are needed for capital structure such as Profit and loss and Balance sheet. Almost all the commercial banks have some kinds of capital structure and resources but also different management gives variety of outcomes.

For every study some past records like previously prepared thesis from some college and some books which are related and very helpful to the studies. Every records and thesis are sources foundation for study which I am making and surely for other in future.

# **2.1 CONCEPTUAL REVIEW**

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

# 2.1.1 MEANING OF CAPITAL STRUCTURE

The structure of capital formation in an organization is known as capital structure, Capital structure is a mixture of both debt and equity securities. Now a day almost in every company debt and equity are used. In some companies more amount is collected from the equity where as in other companies more amount is collected from debt capital. The ratio of collecting such amount varies from company to company.

## I) EQUITY CAPITAL :-

The amount of capital, which has been collected from the selling of shares, is known as Equity capital. There can be different types of shares as

- (a) Common Stock
- (b) Preference Stock
- (c) Bond
- (d) Retained Earning

In capital certain amount is provided to the shareholders who are regarded as a dividend. So, all the shareholders will receive dividend for investing their capital in the shares.

# II) DEBT CAPITAL

This is another source of money collection to run the company. Here the debt capital is used in the company and certain amount of interest is paid to the creditors. There can be various debt in terms of expire of time.

- (a) Short Term Debt
- (b) Long Term Debt

"Capital structure is the mix (or proportion ) of a firm's permanent long term financing represent by debt, preferred stock and common stock equity." (Van Horne, 2007).

"Capital structure is concerned with the analyzing the capital composition of the company." (Weston and Brigham, 1996).

"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,1981). "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, 1997).

Hence by all these definition it conclude to only one thing that is the mixture of debt and capital should be done in a optimal way from which we can get maximum result.

Although there are many more parts / components of capital structure but major component are

- (a) Common Stock
- (b) Debenture
- (c) Retained Earning



Figure 1. Capital Structure

Source: Pandey, Financial Management, Vikas Publishing House

As shown in the figure every organization will go through same process such as they have to collect some capital so they will get multiply choice either using the present capital structure, or use from the dividend or to Debt equity mix which will have later effect on Earning per share and risk, which after all effects the cost of capital and hence market value of firm.

# 2.1.2 PROFITABILITY

Each and every organization is established to earn some amount which is regarded as a profit. Therefore we can say that every organization's motive will be to maximize its profit. In a simple word the difference of total revenue and total expenses is considered to be profit.

Many people may argue that Governments Bank's first priority is service not profit, but they should not ignore the importance of profit, which ultimately makes the efficiency of any organization better.

Profitability is combination of two words "profit" and "ability". Here in an organization more way of increasing monetary value is considered to be profitability increment of that organization. In a Commercial bank, its more efficiency can be seen by more amount of profit gained by that bank. Profit can be considered as a measuring rod, which reflects to all aspects of entire business organization which all also includes quality output.

A profitable company is likely to offer not only security of employment but also promotion, prospects, job opportunities and the intense personnel motivation that comes from being associated with success. "Profit is the basic factor of any organization and the ability means the capacity of organization to earn more and more profit."(Argent 1968:34).

Profitability is relative measure; it is utilized to check the degree of efficiency of management of any organization. This measure helps the investor to calculate the amount of risk present in the business, what amount of interest can be expected or generated from such organization. Measure, or forecast of profitability is again prepared by the help of current profit and one trend line is prepared and for the next year profit is forecasted.

The main objective of profitability is to see whether the organization is using its resources effectively or not, if not which sector is lacking the attention everything should be analyses. Though there are two definitions regarding of profit but both relates to the good of the organization. Some reasons are given below which illustrate importance of profit.

#### I. MEASUREMENT OF PERFORMANCE

In any kind of business, profit is considered as a measuring rod of performance. Profit finalized what are the things, which the company should achieve and in which direction the company is going on in future.

# II. PREMIUM TO COVER COST OF STAYING IN BUSINESS

Risk and uncertainties always follows business environment. To grasp the globally challenging technologies to stay in the market uncertainties, to replace and acquire assets enhancing business scope etc. call for a profit margin for a long stay in the business.

#### III. TO ENSURE SUPPLY OF CAPITAL FOR FUTURE :-

Profit is necessary to plough back in the investments like innovations, business expansion and self-financing. It attracts investors for investment.

# **2.1.3 PROFITABILITY OF A COMMERCIAL BANK**

Commercial bank invests public deposits on those sectors that derive the maximum income or higher rate of return in their assets. Hence the investment or granting of loan and advance by them are highly influenced by profit margin. The profit of commercial banks depends upon the interest rate of the bank, volume of the loan provided, time period of loan and nature of investment in different securities. To cover all the expenses as interest to the depositors and other administrative cost, profit is required. Commercial bank also should pay dividend to the shareholders who have given their share to build the capital of bank.

Banks today are under great pressure to perform to meet the objective of their shareholders, employees, depositors and borrowing customers, while somehow keeping government regulators satisfied that the bank's policies, loans and investments are sound.

A successful bank is one who invests most of its fund in different earning assets standing safely from the problem of liquidity i.e. keeping cash reserve to met day to day requirement of the depositors. After all a commercial bank is simply a business corporation organized for the purpose of maximizing the value of the shareholders wealth invested in the firm at an acceptable level of risk. Profitability and liquidity maintain a highly negative co-relation. Since both are equaled important for commercial bank, banks cannot ignore any of them. So the crucial decision for the management of the bank is to trade off between them. The more liquidity the less will be profitability and vice versa.

# 2.1.4 ASSUMPTION OF CAPITAL STRUCTURE

Regarding capital structure different kinds of theories are propounded by different personalities. Some of the main types of theories are:

- Net Income Approach
- Net Operating Income Approach
- Traditional Approach
- The Modigliani-Miller Approach

#### Assumptions

- (i) Two types of capital are employed, long term debt and shareholder's equity.
- (ii) The firm's total assets are fixed but its capital structure can be changed immediately by selling debt to repurchase common stocks or vice versa.
- (iii) The net operating income (NOI or EBIT) is not expected to grow.
- (iv) All earning of the firm's are paid out in the form of cash dividend.
- (v) There is no corporate income tax.
- (vi) The firm's is expected to continue indefinitely.

# SOME BASIC FORMULAS

a) Cost of Equity (Ke) =  $\frac{\text{Dividend}}{\text{Current Price}} + \text{Growth Rate}$ 

$$=\frac{\mathbf{D}_1}{\mathbf{P}_0}+\mathbf{g}$$

When Dividend per Share= Earning per share and growth rate=0

$$Ke = \frac{EPS}{P_0}$$

b) Cost of Debt(Kd) = 
$$\frac{\text{Interest Charge}}{\text{Value of Debt}}$$
  
Kd =  $\frac{I}{D}$ 

 $Ko = Ke \times \frac{Equity}{Value \text{ of Firm}} + Kd \times \frac{Debt}{Value \text{ of Firm}}$ 

$$=\frac{\text{Net Operating Income (NOI)}}{\text{Value of Firm (V)}}$$

d) Total Value of Firm (V) = Total Market Value of Common Stock
 +Total Market Value of Debt

# **2.1.5 THEORIES OF CAPITAL STRUCTURE**

- [A] **Relevant Theory** (Capital structure affects the value of firm)
  - i) Net Income Approach
  - ii) Traditional Approach
- [B] Irrelevant Theory (Capital structure does not affects the value of the firm)
  - i) Net Operating Income Approach

ii) Modigliani and Miller Approach

# 2.1.5.1. NET INCOME APPROACH

The essence of net income approach is that the firm can increase its value or lower the overall cost of capital by increase the proportion of debt in the capital structure. Some assumptions for this approach are:-

Assumptions of Net Income Approach

- The use of debt does not change the risk perception of investors; as a result the equity capitalization rate (ke) and debt capitalization rate (kd) remain constant with changes in leverage.
- The debt capitalization rate is less than the equity capitalization rate (kd < ke)</p>
- The corporate income tax does not exist.



As shown in the figure, the degree of leverage is shown horizontally where as cost of capital is shown in vertical way. Cost of equity (ke) and cost of debt (kd) remains constant as according to the assumption and cost of equity (ke) is more than cost if debt (kd). The capital structure will be optimum if value of firm is increased by maximizing the overall cost of capital; Under Net Income approach the firm will have the maximum value and the lowest cost of capital when it has more financing in debt. (Pandey, 1999:678).

Since there is no tax and no preferred stock

$$Ko = \frac{EBIT}{V} = Kd\left(\frac{D}{V}\right) + Ke\left(\frac{S}{V}\right)$$

$$D = \frac{I}{Kd}, S = \frac{NI}{Ke}$$

$$V = B + S$$

# 2.1.5.2. NET OPERATING INCOME APPROACH

Net operating income approach theory was propounded by Durand. In this approach any change in leverage will not lead to any leverage in the total value of the firm and the market price of share, as the overall cost of capital is independent of the degree of leverage.

The market value of firm = Debt value + Equity value

 $= \frac{\text{Net Operating Income}}{\text{Overall Cost of Capital}}$  $= \frac{\text{NOI}}{\text{Overall Cost of Capital}}$ 

Ko is overall cost of capitalization rate and it depends on the business risk of the firm. It is not affected from financial mix. If net operating income and overall cost of capital are independent of financial mix then value of the firm will be constant and independent of change of capital structure.

Assumptions Net operating income

- The market capitalizes the value of firm as a whole so splitting of debt and equity has no importance.
- Cost of debt remains constant.
- The market uses an overall capitalization risk (ko) to capitalize risk. If business risk is assumed to remain unchanged, ko will be constant.
- Cost of equity increase as leverage is increased.
- > The corporate income tax does not exist.

Other name for net operating income (NOI) is Earning before Interest and Taxes.

Value of Firm (V) = 
$$\frac{\text{Net Operating Income}}{\text{Overall Cost of Capital}}$$
  
=  $\frac{\text{NOI}}{\text{Ko}}$   
=  $\frac{\text{EBIT}}{\text{Ko}}$ 

We know,

Value of firm (V) = Debt value (D) + Equity value (S)

Or Equity value = V - D

The Cost of Equity (Ke) =  $\frac{\text{NOI} - \text{I}}{\text{V} - \text{D}}$ 

$$=\frac{\mathrm{NI}}{\mathrm{S}}$$

$$\mathrm{Ko} = \mathrm{Kdt}\left(\frac{\mathrm{D}}{\mathrm{T}}\right) + \mathrm{Ke}\left(\frac{\mathrm{S}}{\mathrm{T}}\right)$$

If tax rate is given,

Value of Unlevered firm

$$Vu = \frac{EBIT(1-T)}{Ke(u)}$$
 i.e.  $\frac{NI}{Ke}$ 

Thus value of firm is the value of equity.

Value of Levered firm

 $V_L = V_U + PV$  of debt tax shield.

If company use excess debt

 $V_L = V_U + PV$  of debt tax shield - PV of bankruptcy cost

PV of debt tax shield

(If there is corporate tax only)

PV of debt tax shield =  $D \times T_C$ 

i.e. = 
$$\frac{D \times i \times Tc}{i}$$
 = D × Tc

PV of debt tax shield

(If corporate and personnel tax rate is given)

PV of Debt Tax Sheild = 
$$D\left[1 - \frac{(1 - Tc)(1 - Tps)}{1 - Tpd}\right]$$

Where,

TC = Corporate tax rate

TPS = Personnel tax rate on stock income TPD = Personnel tax rate on debt income



Figure 3. Net operating income

This figure explains Ko and Ke are constant and Ke increases with leverage continuously. As the average and cost of capital k is constant this approach implies that there is not any unique optimum capital structure. In other words as the cost of capital is the same at all capital structure, every capital structure is optimum. (Pandey, 1999:683).

# 2.1.5.3. TRADITIONAL APPROACH

Traditional approach is the combination of net income approach and net operating approach. In this approach either value of a firm will be increased or cost of capital can be reduced by combination of debt and equity. This approach justifies cost of capital decreases with limitation of debt and hence increased with leverage. So we can say that optimum capital structure requires maximum cost of capital where as the maximum value of the firm. This kind of concept is propounded because debt is considered to be comparatively cheaper source of fund collection than from ordinary share. As we know cost of equity is higher than cost of debt and if we borrow funds from cost of debt more than overall cost of capital will decrease.

Traditional approach can be studied with respect to market situation in their stages.

#### First Stage

In the first stage, cost of equity remains constant or rises slightly with debt this increase will not have affect for low cost debt. Keeping these things in mind, use of debt can be good option. As a result the value of the firm will increase and overall cost of capital declines with increasing leverage.

Under this assumption, ke remains constant for some condition of debt then the value of firm will be

$$V = \frac{NOI}{Ke} + (Ke - Kd)\frac{D}{Kd}$$

As long as Ke and Kd are constant, the value of the firm increase at the constant rate when amount of debt increases.

#### Second Stage

Once the firm has reached a certain degree of leverage increase in leverage have a negative effect in the value or the cost of capital of the firm. The reason behind this is the increase in the cost of equity due to the added financial risk affects the advantages of low cost debt. Within the range at the specific point, the value of the firm will be maximized or the cost of capital will be minimized.(Pandey, 1999).

#### Third Stage

In this third and final stage, if the amount of debt is increased then now, overall cost of capital also increases where as it increases the risk factor also. This increment will be faster than the risk in the earnings from the introduction of the debt.



**Figure 4. Traditional approach** 

As shown in the figure the cost of capital depends upon degree of leverage. The cost of capital declines until and unless it reaches optimum value then it started rising. Here in the first stage cost if capital is decreased so Ko line is moving down. At second stage it reaches optimum state so decline of cost of capital is stopped here. Then after it started rising slowly in the beginning and then at a faster rate.

The cost of capital (Ko) makes U - shaped curve which represent incline and decline of cost. In that curve there is such a point at which cost of capital will be minimized and this point is known as optimum capital structure.

# 2.1.5.4. THE MODIGLIANI - MILLER APPROACH

Modigliani and Miller approach also relates with irrelevant theory which means capital structure of the firm will not affect the value of the firm so they came in one agreement that whatever rational choice of debt and equity will have same cost of capital. So in this approach we don't have optimum mix of debt and equity. As long as business risk remains the same the cost of capital will remain constant. As the firm increase the amount of leverage in its capital structure, the cost of debt capital remaining constant the cost of equity capital will rise just enough to affect the gains resulting from application of low cost of debt.

#### Assumption of Modigliani Miller approach

- Existence of perfect capital markets
- Information is cost less and readily available to all investor
- Absence of transaction cost and infinite divisibility of the securities.
- ➤ Investors are rational and behave accordingly.
- Homogenous expectation of investors.
- An individual can borrow or lend at the same rate at which a corporation borrow or lend.
- Dividend payout is 100percent.

Modigliani and Miller say that total cost does not change as it is divided into debt, equity and other securities. The sum of the parts must be equal to whole, so regardless of financing mix the total value of the firm stays the same. Proposition 1

Modigliani and Miller argue in the same risk, the overall cost of capital (Ko) and the value of the firm (V) are independent of its capital structure.

This first proposition can be express as

Where,

V = value of the firm
S = the market value of common stock
D = the market value of debt
Ko = the capitalization rate appropriate to the risk class of the firm.

Again,

$$V = Ke \times \frac{S}{S+D} + Kd \times \frac{D}{S+D}$$

Proposition 2

Proposition 2 explains cost of equity (Ke) is equal to the capitalization rate of pure equity plus a premium for financial risk.

Substituting the value of NOI from (iii) in equation (ii)

This relation explain that cost of equity (ke) is equal to the constant average cost of the capital (ko) plus premium for the financial risk which is equal to debt equity ratio times the difference between constant cost of capital and cost of debt  $\frac{(Ko - Kd)D}{S}$ 

As the cost of equity is measured by the market value of debt to equity so this fact will increase earning per share and cost of equity.

#### Arbitrage Process

M-M approach does not consider NI approach as valid approach. Their optimum clarify in two identical firms have market values arbitrage will take place to enable investors to engage personal or homemade leverage to restore equilibrium in the market except for the degree of leverage. (Pandey,1991).

The importance of Arbitrage is to purchase securities or assets whose price are undervalued and sell those securities whose price are higher in related market.

# ARBITRAGE PROCESS

From levered to Unlevered (	U -	Ľ	)
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Step 1 :-Investor sells% of share of leveled firm	×××
Step 2 :- Investors borrows an equal amount of share	
in debt capital of leverage firm.	<u>×××</u>
Total fund available of investment (A)	×××
Step 3 :- Investor purchases equal % shares of	
Unlevered firm (B)	<u>×××</u>
Reduction of Investment outlay (A - B)	XXX
From Unlevered to levered (U - L)	
Step 1:-Investor sells% of share of unleveled firm	×××
Total fund available of investment	<u>×××</u>
Step 2 :-Investors lends (to the same firm or else	where) an equal
amount of his/her share in debt of leverage firm. (A)	
	<u>×××</u>
Step 3 :- Investor purchases equal % shares of	
levered firm. (B)	<u>×××</u>
Reduction of Investment outlay (A - B)	×××

#### 2.1.6 SOME RELATED ITEMS TO CAPITAL STRUCTURE

#### A. EARNING PER SHARE:

Earning per share is the amount, which is separated from net profit to each and every shareholder.

# $EPS = \frac{Net Pr of it after Taxes - Pr efference Dividend}{Numbers of Common Shares Outs tanding}$

Earning per share is one of the most used measures of firm's performance. To maximize EPS the plant will chose the highest level of debt. Earning per share is calculated after different phase such as first there will be earning before interest and tax then interest will be reduce so that earning before tax is left. Again tax amount is remained which is earning to equity. Then we use above formula to find Earning per share.

#### B. 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" (Pandey,1981).

#### C. FLEXIBILITY:

It means the firm's ability to adopt its capital structure to the needs of changing conditions. The capital structure of a firm is flexible if it has no difficulty in changing its capitalization or sources of funds. The company should be able to raise funds, whenever needed to finance the profitability investment. The company should also in position to redeem its preference capital or debt whenever warranted by the future conditions. The financial plans of the company should be flexible enough to change the composition of the capital structure.

#### D. CASH FLOW ABILITY AND CONTROL:

A company should be always prepared for the future so it should manage its cash flow. Some amount of the company should be paid which are known as fixed charges like interest, preference dividends and principal. Whenever the company things to raise the funds it should calculates its expected future cash flow to meet fixed charges. If such fixed charges are not maintained than the company is dissolved.

Control in any company depends upon voting rights of shareholders so to manage the control debt capital can be used. But when a company use large amount of debt, lot of restriction are put by debt-holder on company to protected their interest. Large amount of debt can also cause bankrupt which means total loss of control.

#### E. SIZE OF THE COMPANY

In large companies, there is greater degree of flexibility for capital structure. The larger company is easy to make available long - term loan and easy selling of common shares, debentures etc. But this kind of flexibility cannot be seen in small - scale companies. Hence size of the company is an important consideration to make appropriate capital structure.

#### F. INTEREST RATES AND TAXES

Interest rates affect the choice of securities to be offered to investors. High interest rates make financing costly, when fund are obtained easily and cheaply.

The advantage of using debt will be greater if a firm's tax rate is higher. Financial statement means the statement, which have all financial matter of the company, just as trial balance, profit and loss a/c and balance sheet. In balance sheet we record assets and liabilities. In balance sheet total assets = total liabilities + equity capital. The balance sheet is just the mirror of the company. It reflects all assets, liabilities of company and also equity from shareholders.

#### G. OPERATING INCOME AND NON OPERATING INCOME:

Operating income for the business entity is the regular and prime source of revenue for the business; it is the main identity of a business regarding what a business stand for.

Non operating incomes are the casual source, not the regular source of revenue for business entity. These incomes are not from regular course of business but from other source where the business entity can be involved legally as prescribed by the directives if related government authority.

# **2.2 REVIEW OF ARTICLES**

Many companies have been following different kinds of capital structure and such cases have been studied and carefully sorted out by previous student in their thesis.

**Modigliani and Miller (1958):** they used the previous work of Allen 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 insignificant and positive in sign.teh regression line is "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 proposition 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.

**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.

**Pandey** (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 observation drawn from Cotton, Chemical ,Engineering and Electricity industries for the year 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) he 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.

**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 finding of study connected with financial management is given as:

- 1. The enterprises have a definite performance for bank loans at a lower level of debts.
- 2. Most enterprises do not borrow from one bank only and they do switch between banks which ever offer best interest rates.
- 3. Most enterprises find that banks are flexible in interest rates and convenience.

# **2.3 REVIEW OF THESIS**

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

**Prasai** (1999): In his MBA thesis "A Study of capital structure of Nepal Bank Limited". In this research has some issues, to accept deposit with or without interest under saving and fixed other, deposits schemes. To provide loans taking the securities such as government securities, moveable property, company shares or debenture, bill of exchange and

promissory notes. This study of specific objectives is 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, to analysis relationship between net profit and deposit. Describe the structure and trend of income and expenditure he has used of various financial and statistical tools such as ratio analysis, index, trend analysis and coefficient of correlation.

This study found that major contribution to the total liabilities is deposit, followed by the net worth and borrowing from other banks. The major proportions of the total assets are: bill loans and advances followed by investment in share and debenture, cash and other bank balance and other assets. During this study total assets and liabilities is in increasing trend. Its EPS is increasing trend. There is significant relationship between total assets and net profit. The bank needs to improve market price of the share reduce its expenses and control fluctuating is earning per share.

**Rajlawat** (1999) has written in his thesis titled "Capital Structure of Necon Air Ltd." There he has found debt amount was much more. Debt equity ratio is higher so risk is very high. Because of more debt, the company will lead to inflexibility. Necon Air has taken loans from different banks. Necon Air was unable to pay higher rate because of low profit or declining profit. He has suggested decreasing the debt. Now because of this reason, Necon Air has gone into liquidation.

**Pathak** (1999) the next thesis regarding capital structure is comparative of Nepal Indosuez Bank and Nepal Ginndlays Bank Limited which is prepared by Kamal Raj Pathak 1999. The capital structure of both bank are highly levered so it is difficult for them to pay interest and principal that will lead to liquidity. As these banks are privately establish to gain more profit they are following that path. Although they are moving ahead for their objectives they may feel uneasy in their management of capital structure because of high leverage.

**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, correlation coefficient, percentage, 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. He suggested from the Du point analysis, it is seen that the assets use efficiency but profit margin and equity multiplies is in decreasing trend.

**Siwakoti** (2003)"A study on an appraisal of financial position of Nepal Gindlays Bank Limited" concludes that the liquidity position of the bank is below the normal standard and the average ratio is affected by the large value of deposits which shows the financial risk if using debts. Covering ratio is low and fluctuating in nature over the analysis period that indicates high profitability of the bank is being unable to pay debt interest and may ultimately leads the bank to the worse situation.

**Baidya** (2004): His MBA research on title of "Capital Structure Management of Manufacturing Companies Listed in NEPSE". 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. The average ratio between shareholder equity and total assets for Arun Vanaspati Udyog and Jyoti Spinning Mill is negative. It shows the negative value of shareholder equity. In this study 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. At last he suggests increase the equity proportion financing its assets to be a safe mode against liquidation.teh debt amount is very huge and that is a need to reduce the debt capital.

**Subedi** (2005) has analyzed the capital of Nabil Bank Ltd to show financial position, examine the different profitability ratios and show overall trend analysis. He found and concluded that liabilities and capital item show the overall situation of bank in falling down. Deposit is the biggest amount in balance sheet. Fixed deposit is taken as long-term debt in the banking business. This study suggests, deposit is the major concern to the capital structure. It affects on investment policy. The more fixed deposit increase, the more the long term investment becomes possible.

# 2.4 Research Gap

This study is different in the sense that the selected companies are totally different form the above previous studies. The study totally revolves around the banking and the named of selected commercial banks. This study done considering the data of five year (2003/04-2007/08) all the selected banks. This study tried to analyze and evaluate the relationship of capital structure with various variable on like, leverage ratio, cost of capital, cost of equity and so on.

# CHAPTER III RESEARCH METHODOLOGY

# **3.1 RESEARCH DESIGN**

Research Design is strategy concept of investigation. The study is evaluative and analytical type of study regarding the effect of capital structure on cost of capital. The research design used in the study is descriptive and evaluative. The data related to topics are collected through financial statements of related companies and other available sources. The data for five years had collected and various financial and statistical tools had used to resolve the objective.

# **3.2 POPULATION AND SAMPLES**

The time limited and unavailability of the relevant data had forced me to make research on the few commercial banks functioning all over the country and most of their stocks are traded in the stock market out of them some commercial banks have been chosen. Sample commercial banks are as follows:

- ✤ EVEREST BANK LIMITED
- HIMALAYAN BANK LIMITED
- ✤ NABIL BANK LIMITED
- ✤ STANDARD CHARTERED BANK LIMITED

# 3.3 SOURCES OF DATA

The data used in the study is fully based on secondary data. The data are collected from annual reports of the bank and websites like http://www.nepalstock.com and also report published by Nepal Rastriya Bank Booklets, Documents other published and unpublished materials, thesis newspaper are the important source of data.

# **3.4 DATA PROCESSING**

All the data which are required are identified and selected. These data's are taken out from financial statement of Banks. These data are managed properly for the study. The data are collected from the balance sheet, profit and loss A/C, security board and Nepal Rastra bank.

# **3.5 TOOL AND TECHNIQUES APPLIED**

For the data processing and analysis technical tools can be used .thus for these two types of tools are taken

# **3.5.1. FINANCIAL TOOLS**

Ratio analysis is the major tools used to represent the relationship of the numerical values between two terms in financial statement. The relationship between two accounting figures, expressed mathematically is known as Financial Ratio (Ratio analysis) [Pandey, 1991:110]. Ratio helps to summarize large quantities of financial data and to make qualitative judgment about the firm's financial performance. We can calculate different kinds of ratios as:

- 1. Liquidity Ratio
- 2. Leverage Ratio
- 3. Activity Ratio
- 4. Profitability Ratio

Although there are four kinds of ratio but we are going to discuss two ratios: Leverage Ratio and Profitability Ratio

Leverage ratio explains about the capital structure of the banks where as profitability ratio explains about the financial condition of the company

#### LEVERAGE RATIO

The terms that are related with capital structure are studied within this ratio. Leverage ratio studies for the funds employed by the firms or from the lender. Financial leverage raises the expected rate of return to stock holders for two reasons (a) since interest is deductive, the debt financing lower the tax bill and leaves more of the firms operating income available to its investors. (b) If the rate of return on assets (EBIT/Total Assets) exceeds the interest rate on debt as it to finance assets pay the interest on the debt and have something left over as a "Bonus" for its shareholders. (Weston & Brigham 1982 Pg.290).

# (i.) Debt to Shareholder's fund Ratio

Here we can know the proportion of Debt holder's amount in respect to share holder's fund. Debt means the amount which bears interest and fund of shareholder has share capital and general reserves. If the ratio is higher than, it means creditors have more proportion than owners.

Debt – Shareholder's Fund Ratios =  $\frac{\text{Total Debt}}{\text{Shareholder's Fund}}$ 

#### (ii.) Debt to Total assets Ratio

This ratio shares the relationship between Debt and total assets of the firm.

$$Debt - Total Assets = \frac{Funded Debt}{Total Assets}$$

Lower ratio is better for the company.
#### (iii.) Interest Coverage Ratio

Debt ratios describe the static nature and fail to indicate the firm's ability to meet interest obligation. The interest coverage ratio used to test the firm's debt describing capacity.

Interest Coverage Ratios =  $\frac{\text{EBIT}}{\text{Annual Interest}}$ 

(iv.) Capital structure Analysis

Under NI and NOI approach we can sort out some formulae.

NI Approach (Overall Capitalization Rate)

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

Overall cost of Capital(
$$K_o$$
) =  $\frac{EBIT}{V_o}$ 

NOI 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 
$$(K_e) = \frac{(EBIT - I)}{S}$$

#### PROFITABILITY RATIO

The profitability ratio can be study in relation to sales and investment.

(i.) Return on Total Assets

This ratio is measures the productivity of the assets, higher ratio shows the higher return on the assets used in the business thereby indicating effective use of the business available and vice versa.

Return on Total Assets  $=\frac{\text{Net Profit after tax}}{\text{Total Assets}}$ 

(ii.) Return on Shareholder's fund

This ratio shows the return on the owner's investment. This ratio also indicates how profitability the owner funds have been utilized by the firm and high ratio reveals the efficient use of owner investment and vice versa.

Re turn on Shareholder's Equity =  $\frac{\text{Net Pr of it after tax}}{\text{Shareholder's Fund}}$ 

#### Earning Performance Ratios

(i.) Earning per Share

Ordinary shareholders want some return on their investment which is known as Earning per Share. This measure the profit available to equity shareholder's per share. Earning Per Share (EPS) =  $\frac{\text{Net Pr of it after tax} - \text{Pr eferred Dividend}}{\text{Number of Equity Share}}$ 

(ii.) Price Earning Ratio

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

P / E Ratio =  $\frac{Market Pr ice Per Share}{Earning Per Share}$ 

#### **3.5.2. STATISTICAL TOOLS**

Statistical and Research cannot be separated whenever research work is carried on statistics should have output of the research. In today's world there is hardly any research work which we can find complete without statistical data and statistical methods. The statistical tools used in the study are as follows:

(i.) Arithmetic Mean

Arithmetic mean can be expressed as the average value or sum of all values divide by number of value.

Arithmetic Mean 
$$(\overline{X}) = \frac{(x_1 + x_2 + x_3 + \dots + x_n)}{N}$$

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

Where,  $\sum_{X}$  = Sum of all values of the variables.

N = Number of observation

#### (ii.) Standard Deviation

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 the magnitude of the deviation of the values from their mean  $(\overline{x})$  and vice-versa.

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

(iii.) Correlation Coefficient (r)

Two variables are said to be correlated if change in the values of one variable appears to be related or linked with the change in the other variable. Correlation is an analysis of the covariance between two or more variables and correlation analysis deals to determine the degree of relationship between variables.

Between different processes of correlation, we use Karl Pearson's Coefficient of correlation method. The correlation coefficient between two variables X and Y for n observation is measure by:

$$r = \frac{\sum XY}{\sqrt{\sum x^2 \sum y^2}}$$

Where,  $x = x - \overline{x}$  and  $y = y - \overline{y}$ 

The correlation coefficient 'r' always varies from '-1' to '+1'. When r=+1, it reveals there is perfect positive correlation between the variables. When r=-1 is obtained, it reveals there is perfect negative correlation between the variables.

(iv.) Probable Error (PE)

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 conditions of random sampling. The Probable Error (PE) is defined by:

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

Where,

r=Coefficient of correlation

n=Number of observation

- 1. If r<PE, there is no evidence of correlation, i.e. r is not all significant.
- 2. If r > 6PE(r), then r is definitely significant.

The PE of correlation coefficient may be used to determine the limits within which the population correlation coefficient lies. By adding and subtracting the PE from the 'r' we get respectively the upper and lower limit within which 'r' in the population can be expected to lie. Therefore the limit of the population correlation coefficient is  $r \pm PE$ .

(V.) Simple Regression Analysis

Regression analysis shows how variables are related .Regression is the estimation of unknown values or prediction of one variable from known value of the other variables. The regression equation can be determined by:

$$y=a+bx$$

Where, a=Intercept or Regression Constant

b=Slope of Regression line or Regression coefficient.

#### Regression Constant (a)

It is known as numerical constant directly above or below the origin (i.e. y intercept) The value of the constant, which is intercept of the model, indicates the leverage level of dependent variable when independent variables is zero. In other words, it is between to understand that constant indicates mean or average effect on dependent variable if all the variables omitted from the mode

#### Regression Coefficient (b)

The regression coefficient of each independent variable (b) indicates the marginal relationship between that variables and value of dependent variable, holding constant effect of all other independent variable in the regression model. It is known that the slope of regression line. In other words the coefficient describes how changes in independent variable estimate. It is also known that the numerical constant change is independent variable.

#### (vi.) T-Statistics

In order to that whether the sample correlation coefficient is significant of any correlation between the variables in the population, T-test for significance of an observed sample correlation coefficient is applied. The T-statistics is calculated by following formula under  $H_0$ 

$$T = \frac{r}{\sqrt{1 - r^2}} \sqrt{n - 2}$$

Decision: T calculated ½ T tabulated at a level of significance, it is not significant.

#### **CHAPTER IV**

#### **Data presentation and interpretation**

This chapter is the heart of the research report in which an organized presentation of result and each major division of the problem had been presented. The chapter generally covers presentation of arguments, documentation, ideas or concept, interpretation and findings.

The basic objective of the study is to explore the effect of cost of capital on capital structure of sampled companies. In order to accomplish the mentioned objective both the descriptive and evaluate research methodologies had been employed. Various financial and statistical tools had been used to analyze the effect of cost of capital on the capital structure of sampled companies.

#### **4.1 Capital Structure Analysis**

The capital structure analysis of selected companies had been carried by analyzing funded debt and shareholder's fund. Net profit and total assets analysis, financial ratio and capitalization ratio.

#### 4.1.1 Calculation of Debt Ratio

The funded debt comprises of interest bearing debt (i.e., Bills payables, other liabilities and borrowing). In the same manner the shareholder's fund comprises paid up capital (equity and preference capital Profit capitalization, Reserve fund and profit and loss a\c.)

Table No.1	
Debt Ratio of Selected Ba	nks

YEAR							
BANK	2003/04	2004/05	2005/06	2006/07	2007/08	Mean	S.D
EBL							
	9	6.84	7.48	9.54	4.61	7.49	1.95
HBL							
	5.55	3.30	4.08	3.95	5.03	4.38	0.90
NABIL							
	6.84	5.48	4.96	6.80	7.49	6.31	1.05
SCBL							
	4.17	5.65	3.70	6.41	3.30	4.64	1.33

Source: Annual report and website of concerned bank



Figure 5 Debt Ratio of Selected Banks

**EBL:** The debt to total assets is 9% in 2003/04, 6.84% in 2004/05 and 7.48% in 2005/06, 9.54% in the year 2006/07 and 4.61% in the year

2007/08. The average ratio of debt to total assets is 7.49% and standard deviation is 1.95. The highest ratio was in 2006/07 and lowest ratio was in 2007/08.

**HBL:** The debt to total assets is 5.55% in 2003/04, 3.30% in 2004/05 and 4.08% in 2005/06, 3.95% in the year 2006/07 and 5.03% in the year 2007/08. The average ratio of debt to total assets is 4.38% and standard deviation is 0.90. The highest ratio was in 2003/04 and lowest ratio in 2004/05.

**NABIL:** The debt to total assets is 6.84% in 2003/04, 5.48% in 2004/05 and 4.96% in 2005/06, 6.80% in the year 2006/007 and 7.49% in the year 2007/08. The average ratio of debt to total assets is 6.31% and its standard deviation is 1.05. The highest ratio was in the year 2003/04 and lowest ratio was on the year 2005/06.

**SCBL**: The debt to total assets is 4.17% in 2003/04, 5.65% in 2004/05, 3.70 % in 2005/06, 6.41% in the year 2006/07 and 3.30% in the year 2007/08. The average ratio of debt to capital employed is 4.64% and standard deviation is 1.33. Fourth year shows highest ratio of debt to capital employed.

Comparatively, EBL has highest share of funded debt in total assets of 7.49% and HBL has less share of funded debt of 4.38%.EBL bank has higher changes in ratio so its standard deviation is higher than other banks, it is 1.95.

#### 4.1.2 Calculation of Debt-Equity Ratio

The debt equity ratio is the relationship between fund and owner's capital. It is determined to measure the firm's obligation to creditors in relation to the funds invested by owners. A high debt-equity ratio implies that a proportion of long term financing is from debt sources that are the firm us using a great deal of financing leverage. Total debt includes current accounts, saving accounts, calls and deposits.

Shareholders equity or net worth includes paid up capital reserve and surplus.

YEAR							
BANK	2003/04	2004/05	2005/06	2006/07	2007/08	Mean	S.D
EBL	127.05	96.35	124.02	170.19	65.16	116.55	39.03
HBL	62.28	58.68	68.13	61.69	72.41	64.64	5.53
NABIL	77.26	56.83	59.07	90.13	114.09	79.48	23.69
SCBL	65.85	79.19	54.28	86.63	44.10	66.01	17.44

Table No.2Debt to Equity Ratio of Selected Bank

Source: Annual report and website of concerned bank

180 EBL 160 HBL 140 120 NABIL 100 SCBL 80 60 40 20 0 2003/04 2004/05 2005/06 2006/07 2007/08

Figure 6 Debt to Equity Ratio of Selected Bank

**EBL**: The ratio of debt to shareholder's fund of EBL was 127.05% in 2003/04, 96.35% in 2004/05, 124.02% in 2005/06,170.19% in the year 2006/07 and 65.16% in the year 2007/08. The average debt to shareholder's fund ratio of EBL is 116.55% and its standard deviation is 39.03. In the duration of study the highest ratio was on 2006/07 and lowest ratio was on 2007/08.

**HBL**: The ratio of debt to shareholder's fund ratio of HBL was 62.28% in 2003/04, 58.68% in 2004/05, 68.13% in 2005/06, 61.69% in the year 2007/08 and 72.41% in the year 2007/08. The average debt to shareholder's fund ratio is 64.64% and standard deviation of it is 5.53. The highest ratio was found in 2007/08 and the lowest ratio was revealed in 2004/05.

**NABIL:** The ratio of debt to shareholder's fund ratio of NABIL bank was 77.26% in 2003/04, 56.83% in 2004/05, 59.07% in 2005/06, 90.13% in the year 2006/07 and 114.09 in the year 2007/08. The average ratio of debt to shareholder's fund is 79.48%. The standard deviation of NABIL

bank is 23.69. The highest ratio was on 2006/07 and lowest ratio was on 2004/05.

**SCBL:** The ratio of debt to shareholder's fund of SCBL was 65.85% in 2003/04, 79.19% in 2004/05, 54.28% in 2005/06, 86.63% in the year 2006/07 and 44.10% in the year 2007/08. Average debt to shareholder's fund is 66.01%. The standard deviation of SCBL is 17.44.

Comparatively, EBL has highest average D/S ratio of 116.55% then other banks which reveals EBL has employed more funded debt than other banks. EBL has high standard deviation which shows that there was higher change in ratio during the study period.

#### 4.1.3 Calculation of Interest coverage Ratio

Interest coverage ratio reflects the firm's ability to pay interest out of earnings. This ratio shows the number of times the interest charges are covered by funds that are ordinarily available for their payment. Too high ratio implies unused debt capacity or a firm's conservativeness in using debt to its best advantage, whereas low ratio imply a danger signal that the firm is using excessive debt and does not have the ability to offer assured payment of interest to the creditors.

YEAR							
BANK	2003/04	2004/05	2005/06	2006/07	2007/08	Mean	S.D
EBL	1.67	1.83	1.86	1.88	2.04	1.86	0.13
HBL	1.86	1.93	2.04	1.93	2.15	1.98	0.11
NABIL	3.32	3.13	3.51	2.79	2.44	3.04	0.43
SCBL	3.80	4.14	4.10	3.46	3.53	3.81	0.31

Table No.3Interest Coverage Ratio

Source: Annual report and website of concerned bank





**EBL:** The interest coverage ratios of EBL were 1.67 in 2003/04, 1.83 in 2004/05, 1.86 in 2005/06, 1.88 in 2006/07 and 2.04 in 2007/08. The average ratio of interest coverage is 1.86 and its standard deviation is 0.13. The highest ratio was in the year 2007/08 and lowest ratio was in the year 2003/04.

**HBL:** The interest coverage ratios of HBL were 1.86 in 2003/04, 1.93 in 2004/05, 2.04 in 2005/06, 1.93 in 2006/07 and 2.15 in 2007/08.The average ratio of interest coverage is 1.98 and its standard deviation is 0.11. The highest ratio was in the year 2007/08 and lowest ratio was in the year 2003/04.

**NABIL:** The interest coverage ratios of NABIL were 3.32 in 2003/04, 3.13 in 2004/05, 3.51 in 2005/06, 2.79 in 2006/07 and 2.44 in 2007/08. The average ratio interest coverage ratio of NABIL was 3.04 and standard deviation is 0.43. The highest ratio of interest coverage is in the year 2005/06 and lowest ratio is in the year 2007/08.

**SCBL:** The interest coverage ratios of SCBL were 3.80 in 2003/04, and 4.14 in 2004/05, 4.10 in 2005/06, 3.46 in 2006/07 and 3.53 in 2007/08. The average ratio of interest coverage ratio of SCBL is 3.81 and its standard deviation is 0.31. The highest ratio is in the year 2004/05 and lowest ratio was in the year 2006/07.

Above information is a proof of highest debt servicing capacity of 3.81 times of SCBL.NABIL bank has higher standard deviation which indicates highly changes in the ratio during study period.

#### 4.1.4 Degree of financial leverage

The degree of financial leverage indicates the degree of financial risk, i.e. higher the value of degree of financial leverage, higher the degree of financial risk and vice-versa.the degree of financial leverage can be calculated as:

DFL= Percentage Change in EBT/Percentage change in EBIT Or DFL= EBIT / EBT

YEAR							
BANK	2003/04	2004/05	2005/06	2006/07	2007/08	Mean	S.D
EBL	2.50	2.20	2.17	2.14	1.96	2.19	0.19
HBL	2.17	2.08	1.96	2.07	1.87	2.03	0.12
NABIL	1.43	1.47	1.40	1.56	1.70	1.51	0.12
SCBL	1.36	1.32	1.32	1.41	1.40	1.36	0.04

Table No.4Degree of Financial Leverage

Source: Annual report and website of concerned bank





**EBL:** The DFL of EBL was 2.50 in 2003/04, 2.20 in 2004/05, 2.17 in 2005/06, 2.14 in 2006/07 and 1.96 in 2007/08. The average ratio of DFL is 2.19 and its standard deviation is 0.19. The highest ratio was in the year 2003/04 and lowest ratio was in the year 2007/08.

**HBL:** The DFL of HBL was 2.17 in 2003/04, 2.08 in 2004/05, 1.96 in 2005/06, 2.07 in 2006/07 and 1.87 in 2007/08. The average ratio of DFL

is 2.03 and its standard deviation is 0.12. The highest ratio was in the year 2003/04 and lowest ratio was in the year 2007/08.

**NABIL:** The DFL of NABIL was 1.43 in 2003/04, 1.47 in 2004/05, 1.40 in 2005/06, 1.56 in 2006/07 and 1.70 in 2007/08. The average ratio DFL of NABIL was 1.51 and standard deviation is 0.12. The highest ratio of interest coverage is in the year 2007/08 and lowest ratio is in the year 2005/06.

**SCBL:** The DFL of SCBL was 1.36 in 2003/04, and 1.32 in 2004/05, 1.32 in 2005/06, 1.41 in 2006/07 and 1.40 in 2007/08. The average ratio of DFL of SCBL is 1.36 and its standard deviation is 0.04. The highest ratio is in the year 2006/07 and lowest ratio was in the year 2004/05.

Above information is a proof of highest DFL of 2.19 of EBL.EBL bank has higher standard deviation which indicates highly changes in the ratio during study period.

#### **4.1.5 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 assets; otherwise its survivable is threatened. Higher ratio indicates efficiency in utilizing its overall resources and vice-versa.

YEAR							
BANK	2003/04	2004/05	2005/06	2006/07	2007/08	Mean	S.D
EBL	1.49	1.43	1.49	1.38	1.66	1.49	0.11
HBL	1.02	1.12	1.55	1.47	1.76	1.38	0.31
NABIL	2.72	3.02	2.84	2.47	2.01	2.61	0.39
SCBL	2.27	2.43	2.56	2.42	2.46	2.43	0.10

### Table No.5 **Return on Total Assets**

Source: Annual report and website of concerned bank



Figure 9

**EBL:** The ROA was 1.49%, 1.43%, 1.49%, 1.38% and 1.66% in 2003/04, 2004/05, 2005/06, 2006/07 and 2007/08 respectively. The return was highest in the year 2007/08 whereas lowest return was in the year 2006/07. The average return was in the year 1.49% and standard deviation is 0.11.

**HBL:** The ROA was 1.02%, 1.12% and 1.55%, 1.47% and 1.76 in 2003/04, 2004/05, 2005/06, 2006/07 and 2007/08 respectively. The return was highest in the year 2007/08 and lowest return is in the year 2002/03. The average return was in the year 1.38% and standard deviation is 0.31.

**NABIL:** The ROA was 2.72%, 3.02%, 2.84%, 2.47% and 2.01% in 2003/04, 2004/05, 2005/06, 2006/07 and 2007/08 respectively. The return was highest in the year 2004/05 and lowest return was in the year 2007/08. The average return is 2.61% and standard deviation is 0.39.

**SCBL:** The ROA was 2.27%, 2.43% and 2.56%, 2.42% and 2.46% in 2003/04, 2004/05, 2005/06, 2006/07 and 2007/08 respectively. The return was highest in the year 2005/06 and lowest return in the year 2003/04. The average ROA is 2.43% and standard deviation is 0.10.

NABIL bank has higher ROA of 2.61% and HBL has lower ROA of 1.38%. NABIL bank has higher standard deviation of 0.39 which reflects greater change in the ratio during the study period.

#### **4.1.6 RETURN ON SHAREHOLDER'S EQUITY**

The shareholder's equity consists of common share, preference share and reserve and surplus. ROE is the best single measure of the company's success in fulfilling its goal. The ratio equals the net profit after tax divided by the common stockholder's equity.

YEAR							
BANK	2003/04	2004/05	2005/06	2006/07	2007/08	Mean	S.D
EBL	21.10	20.20	24.65	24.67	23.49	22.82	02.06
HBL	11.48	20.00	25.90	22.91	25.30	21.12	05.87
NABIL	30.73	31.29	33.88	32.76	30.63	31.86	01.42
SCBL	35.96	34.07	37.55	32.68	32.85	34.62	02.10

# Table No.6Return On Shareholder's Equity

Source: Annual report and website of concerned bank



Figure 10

**EBL:** The ROS of EBL was 21.10%, 20.20%, 24.65%, 24.67% and 23.49% in the year 2003/04, 2004/05, 2005/06, 2006/07 and 2007/08 respectively. The average return is 22.82% and standard deviation is 2.06. The highest return was in the year 2006/07 and lowest return was in the year 2003/04.

**HBL:** The ROS of HBL was 11.48%, 20.00%, 25.90%, 22.91% and 25.30% in the year 2003/04, 2004/05, 2005/06, 2006/07 and 2007/08 respectively. The average return is 21.12% and standard deviation is 5.87. The highest return was in the year 2005/06 and lowest return was in the year 2003/04.

**NABIL:** The ROS of NABIL was 30.73%, 31.29%, 33.88%, 32.76% and 30.63% in the year 2003/04, 2004/05, 2005/06, 2006/07 and 2007/08 respectively. The average return is 31.86% and standard deviation is 1.42. The highest return was in the year 2005/06 and lowest return was in the year 2007/08.

**SCBL:** The ROS of SCBL was 35.96%, 34.07%, 37.55%, 32.68% and 32.85% in the year 2003/04, 2004/05, 2005/06, 2006/07 and 2007/08 respectively. The average return is 34.62% and standard deviation is 2.10. The highest return was in the year 2005/06 and lowest return was in the year 2006/07.

SCBL has highest average of ROS of 34.62% and HBL has lowest of 21.12% ROS.SCBL was found to be efficient to provide higher return to shareholder. HBL has higher standard deviation of 5.87 which represents higher change during study period.

#### **4.1.7 EARNING PER SHARE**

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 market, EPS of selected banks are calculated as below:

#### Table No.7

#### **Earning Per Share**

YEAR							
BANK	2003/04	2004/05	2005/06	2006/07	2007/08	Mean	S.D
EBL	45.58	54.22	62.78	78.4	91.82	66.40	18.75
HBL	49.05	47.91	59.24	60.66	62.74	55.92	6.92
NABIL	92.61	105.49	129.21	137.08	108.31	114.54	18.20
SCBL	143.55	143.14	175.84	167.37	131.32	152.52	18.32

Source: Annual report and website of concerned bank





**EBL:** The earning per share of EBL was Rs 45.58 in 2003/04, Rs 54.22 in 2004/05, Rs 62.78 in 2005/06, Rs 78.40 in 2006/07 and Rs 91.82 in 2007/08. The average earning per share is Rs 66.40 and standard deviation is 18.75. The highest earning was in the year 2007/08 and lowest earning was in the year 2003/04.

**HBL:** The earning per share of HBL was Rs 49.05 in 2003/04, Rs 47.91 in 2004/05, Rs 59.24 in 2005/06, Rs60.66 in 2006/07 and Rs 62.74 in 2007/08. The average earning per share is Rs 55.92 and standard deviation is 6.92. The highest earning was in the year 2007/08 and lowest earning was in the year 2004/05.

**NABIL:** The earning per share of NABIL was Rs 92.61 in 2003/04, Rs 105.49 in 2004/05, Rs 129.21 in 2005/06, Rs137.08 in 2006/07 and Rs 108.31 in 2007/08. The average earning per share is Rs 114.54 and standard deviation is 18.20. The highest earning was in the year 2006/07 and lowest earning was in the year 2003/04.

**SCBL:** The earning per share of SCBL was Rs 143.55 in 2003/04, Rs 143.14 in 2004/05, Rs 175.84 in 2005/06, Rs167.37 in 2006/07 and Rs 131.32 in 2007/08. The average earning per share is Rs 152.52 and standard deviation is 18.32. The highest earning was in the year 2005/06 and lowest earning was in the year 2007/08.

Comparison among selected banks, SCBL has average highest earning per share of Rs.152.52 and lowest average earning per share is Rs. 55.92 of HBL. It shows EBL is more efficient to provide higher return to their shareholders than any other banks.

#### **4.1.8 DIVIDEND PER SHARE**

Companies like to follow a stable dividend policy since investors generally prefer such policy for certainly reason a stable divided policy does not constitute constant DPS, but a reasonable predicable dividend policy.

#### Table No.8

Divic	lend	Per	Shar	e	

YEAR							
BANK	2003/04	2004/05	2005/06	2006/07	2007/08	Mean	S.D
EBL		20		30	30	26.67	5.77
HBL	20	31.58	35	40	45	34.32	9.48
NABIL	65	70	85	140	100	92	30.12
SCBL	110	120	140	130	130	126	11.40

Source: Annual report and website of concerned bank





**EBL:** The dividend per share of EBL was Rs 20 in 2004/05, Rs30 in 2006/07 and Rs 30 in 2007/08. The average dividend per share is Rs 26.67 and standard deviation is 5.77. The highest dividend was in the year 2006/07and2007/08 and lowest dividend was in the year 2004/05.

**HBL:** The dividend per share of HBL was Rs 20 in 2003/04, Rs 31.58 in 2004/05, Rs 35 in 2005/06, Rs 40 in 2006/07 and Rs 45 in 2007/08. The average dividend per share is Rs 34.32 and standard deviation is 9.48. The highest dividend was in the year 2007/08 and lowest dividend was in the year 2003/04.

**NABIL:** The dividend per share of NABIL was Rs 65 in 2003/04, Rs 70 in 2004/05, Rs 85 in 2005/06, Rs140 in 2006/07 and Rs 100 in 2007/08. The average dividend per share is Rs 92 and standard deviation is 30.12. The highest dividend was in the year 2006/07 and lowest dividend was in the year 2003/04.

**SCBL:** The dividend per share of SCBL was Rs 110 in 2003/04, Rs 120 in 2004/05, Rs 140 in 2005/06, Rs130 in 2006/07 and Rs 130 in 2007/08. The average dividend per share is Rs 126 and standard deviation is 11.40. The highest dividend was in the year 2005/06 and lowest dividend was in the year 2003/04.

Comparison among selected banks, SCBL has average highest dividend per share of Rs.126 and lowest average dividend per share is Rs. 26.67 of EBL. It shows NABIL is more efficient to provide higher return to their shareholders than any other banks.

#### **4.1.9 PRICE EARNING RATIO**

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

P/E ratio= market price of a share/ Earning per share

#### Table No.9

Price Earning Rat	<u>io</u>
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YEAR							
BANK	2003/04	2004/05	2005/06	2006/07	2007/08	Mean	S.D
EBL	14.93	16.04	21.97	31	34.11	23.61	8.66
HBL	17.12	19.2	18.97	28.69	31.56	23.03	6.60
NABIL	10.80	14.27	17.34	36.84	48.7	25.59	16.40
SCBL	12.16	16.38	21.47	35.25	51.77	27.45	16.25

Source: Annual report and website of concerned bank



#### **Price Earning Ratio**

Figure13

**EBL:** The price earnings ratio (P/E) of EBL was 14.93, 16.04, 21.97, 31, 34.11 in the year 2003/04, 2004/05, 2005/06, 2006/07 and 2007/08 respectively. The average ratio of price earning is 23.61 and standard

deviation is 8.66. The highest ratio is in the year 2007/08 and lowest ratio is in the year 2003/04.

**HBL:** The price earning ratio (P/E) of HBL was 17.12, 19.20, 18.97 in the year 2003/04, 2004/05, 2005/06, 2006/07 and 2007/08 respectively. The average ratio of price earning is 23.03 and standard deviation is 6.60. The highest ratio is in the year 2007/08 and lowest ratio is in the year 2003/04.

**NABIL:** The price earning ratio (P/E) of NABIL was 10.80, 14.27, 17.34, 36.84 and 48.7 in the year 2003/04, 2004/05, 2005/06, 2006/07 and 2007/08 respectively. The average ratio of price earning is 25.59 and standard deviation is 16.40. The highest ratio is in the year 2007/08 and lowest ratio is in the year 2003/04.

**SCBL:** The price earning ratio (P/E) of SCBL was 12.16, 16.38, 21.47, 35.25 and 51.77 in the year 2003/04, 2004/05, 2005/06, 2006/07 and 2007/08 respectively. The average ratio of price earning is 27.45 and standard deviation is 16.25. The highest ratio is in the year 2007/08 and lowest ratio is in the year 2003/04.

The average P/E ratio of SCBL is the highest among all the selected banks which is 27.45 and lowest average of P/E ratio is of HBL which 23.03. The ratio varies due to the variation among the EPS of different banks and market value of it

#### 4.1.10 OVERALL CAPITALIZATON RATE (K<sub>0</sub>)

Overall cost of capital reflects the total cost of capital collected from various sources by the company. The overall capitalization rate was calculated on the basis of NI approach. This approach assumes the cost of debt is less than the cost of equity. Based on this approach the overall capitalization rate of the firm can be lower by increasing the amount of debt in capital structure.

# Table No.10Overall Capitalization Rate

YEAR							
BANK	2003/04	2004/05	2005/06	2006/07	2007/08	Mean	S.D
EBL	17.55	15.52	11.64	08.65	07.76	12.22	04.25
HBL	15.38	15.89	13.62	09.62	08.10	12.52	03.49
NABIL	15.51	09.14	10.36	05.81	04.72	09.11	04.26
SCBL	13.95	10.48	08.23	05.45	03.83	08.39	04.02

Source: Annual report and website of concerned bank



Figure 14

# **EBL:** The overall cost of capital of EBL was 17.55% in the year 2003/04, 15.52% in the year 2004/05, 11.64% in the year 2005/06,

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8.65% in the year 2006/07, 7.76% in the year 2007/08. The highest ratio was in the year 2003/04 and lowest ratio was in the year2007/08. The average overall cost of capital is 12.22% and standard deviation is 4.25.

**HBL:** The overall cost of capital of HBL was 15.38% in the year 2003/04, 15.89% in the year 2004/05, 13.62% in the year 2005/06, 9.62% in the year 2006/07and 8.10% in the year2007/08. The highest overall cost of capital is in the year 2004/05 and lowest overall cost of capital in the year 2007/08. The average overall cost of capital is 12.52% and standard deviation is 3.49.

**NABIL:** The overall cost of capital of NABIL was 15.51% in the year 2003/04, 9.14% in the year 2004/05, 10.36% in the year 2005/06, 5.81% in the year 2006/07, 4.72% in the year 2007/08. The highest ratio of overall cost of capital is in the year 2003/04 and lowest ratio of overall cost of capital is in the year 2007/08. The average overall cost of capital is 9.11% and standard deviation is 4.26.

**SCBL:** The overall cost of capital of SCBL was 13.95% in the year 2003/04, 10.48% in the year 2004/05, 8.23% in the year 2005/06, 5.45% in the year 2006/07 and 3.83% in the year 2007/08. The highest overall cost of capital was in the year2003/04 and lowest overall cost of capital was in the year 2007/08. The average overall cost of capital is 8.39% and standard deviation is 4.002.

HBL has higher highest overall cost of capital of 12.52% and SCBL has lowest overall cost of capital of 8.39%.NABIL has more standard deviation of 4.26 which shows higher changes in the ratio.

### 4.1.11 EQUITY CAPITALIZATON RATE (Ke)

The equity capitalization rate was calculated based on NOI approach. This approach argues that the value of the firm remains constant to the degree of leverage and equity capitalization rate trends to increase with the degree and vice versa.

YEAR							
BANK	2003/04	2004/05	2005/06	2006/07	2007/08	Mean	S.D
EBL	9.86	9.13	6.60	4.95	4.28	6.96	2.47
HBL	9.34	8.83	7.92	5.09	4.73	7.18	2.14
NABIL	13.36	7.01	8.15	4.01	3.00	7.11	4.09
SCBL	11.83	9.09	6.64	4.17	2.81	6.91	3.65

Table No.11

**Equity Capitalization Rate** 

Source: Annual report and website of concerned bank



**EBL:** The equity capitalization rate of EBL was 9.86% in the year 2003/04, 9.13% in the year 2004/05, 6.60% in the year 2005/06, 4.95 in the year 2006/07 and 4.28 in the year 2007/08. The highest rate is in the year 2003/04 and lowest rate was in the year 2007/08. The average equity capitalization rate is 6.96% and standard deviation is 2.47.

**HBL:** The equity capitalization rate of HBL was 9.34 % in the year 2003/04, 8.83% in the year 2004/05, 7.92% in the year 2005/06, 5.09% in the year 2006/07 and 4.73% in the year 2007/08. The average equity capitalization rate of HBL is 7.18% and standard deviation is 2.14. The highest rate is in the year 2003/04 and lowest rate is in the year 2007/08.

**NABIL:** The equity capitalization rate of NABIL was 13.36% in the year 2003/04, 7.01% in the year 2004/05, 8.15% in the year 2005/06, 4.01% in the year 2006/07 and 3% in the year 2007/08. The average equity capitalization rate is 7.11% and standard deviation is 4.09. The highest rate is in the year 2003/04 and lowest rate is in the year 2007/08.

**SCBL:** The equity capitalization rate of SCBL was 11.83% in the year 2003/04, 9.09% in the year 2004/05, 6.64% in the year 2005/06, 4.17% in the year 2006/07 and 2.81 in the year 2007/08. The average equity capitalization rate is 6.91% and standard deviation is 3.65. The highest equity capitalization rate is in the year 2003/04 and lowest equity capitalization rate was in the year 2007/08.

HBL has higher equity capitalization rate of 7.18% and SCBL has lower equity capitalization rate of 6.91%. NABIL has higher standard deviation of 4.09 which reveals higher changes in rate during study period.

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#### **4.2 Statistical Analysis**

The statistical analysis incorporates various techniques for measuring the relationship between two or more than two variables as well as significance. In this study, simple regression, Karl Pearson's coefficient and Probable error had been used for measuring significance.

#### 4.2.1 Coefficient of Correlation between EBIT and Interest Payment

The relation between EBIT and interest payment is evaluated in order to measure debt-servicing capacity of the banks. It is assumed that there is significant relationship between EBIT and interest payment. Here interest payment (X) is dependent variable and EBIT (Y) is independent variable. Positive values show the positive relation and negative values shows the negative relation.

Table no 12Correlation between EBIT and Interest Payment

Banks	r	$\mathbf{r}^2$	PE	6PE	Level of significant
EBL	0.995	0.991	0.0026	0.0158	SIGNIFICANT
HBL	0.985	0.971	0.0086	0.051	SIGNIFICANT
NABIL	0.972	0.945	0.0163	0.097	SIGNIFICANT
SCBL	0.981	0.963	0.0112	0.067	SIGNIFICANT

Source: Annual report and website of concerned bank

The correlations between EBIT and Interest Payment in case of all the banks have positive relationship. It shows that increase in EBIT, increases interest payment. On the other hand, the correlation between EBIT and interest payment of bank which shows higher positive. Considering the probable error (P.E.), the value of "r" is greater than six times of the probable error. Therefore, it is depicted that the value of "r" in banks is significant relationship between EBIT and interest payment. It shows that the selected banks are significantly able to service their debt.

# **4.2.2** Coefficient of Correlation between Overall capitalization rate (X) and Debt Equity ratio(Y)

Correlation of coefficient between overall capitalization rate (X) and debt equity ratio (Y) in terms of total debt to net worth is calculated in order to measure whether increase in the debt equity ratio decreases overall capitalization of the banks. Applying Karl Pearson's correlation coefficient, following result is obtained.

#### Table no 13

Correlation between Overall capitalization rate and Debt

Banks	r	r <sup>2</sup>	PE	6PE	Level of significant
EBL	0.346	0.0012	0.3012	1.807	INSIGNIFICANT
HBL	-0.6320	0.3994	0.1811	1.0869	INSIGNIFICANT
NABIL	-0.5627	0.3166	0.2061	1.237	INSIGNIFICANT
SCBL	0.2419	0.0585	0.284	1.704	INSIGNIFICANT

equity ratio

Source: Annual report and website of concerned bank

Above table shows the correlation between overall capitalization and debt equity of selected banks over the period. The correlation coefficient of HBL and NABIL is -0.6320 and -0.5627.they have negative relationship i.e. increase in debt capital will decrease overall capitalization rate. Correlation coefficient of selected banks i.e. 'r' is less than six times P.E. of these banks so the relationship of  $k_0$  and D/E ratio is insignificant.

### **4.2.3** Coefficient of Correlation between Return on Equity (X) and Debt Equity ratio(Y)

The correlation coefficient between ROE (Y) and D/E ratio (X) will gives us information on increase debt capital portion in the capital structure increase return on equity. Positive values show the positive relation and negative values shows the negative relation.

#### Table no 14

Correlation between Return on Equity and Debt equity ratio

Banks	r	$r^2$	PE	6PE	Level of significant
EBL	0.3527	0.1244	0.2641	1.5847	INSIGNIFICANT
HBL	0.5647	0.3188	0.2054	1.2327	INSIGNIFICANT
NABIL	-0.4379	0.1917	0.2438	1.4628	INSIGNIFICANT
SCBL	-0.2949	0.0869	0.2754	1.6524	INSIGNIFICANT

Source: Annual report and website of concerned bank

This table shows relationship between the return on equity and equity ratio of four banks over the study period. Correlation of coefficient of NABIL and SCBL is -0.4379 and -0.2949.Here relation of EBL and HBL is positive. Considering the probable error (P.E) the value of r is greater than six times of the probable error of HBL. Therefore the values of all the banks are insignificant.

### 4.2.4 Coefficient of Correlation between Debt Equity ratio (X) and Return on Assets (Y)

The correlation of Coefficient between Debt equity ratio and return on assets of selected banks are analyzed in order to examine which debt capital is significant in generating more return. It is assumed that there is significant relationship between return and debt capital. Positive values show the positive relation and negative values shows the negative relation.

Correlation between Debt equity ratio and Return on Assets								
Banks	r	$r^2$	PE	6PE	Level of significant			
EBL	-0.8178	0.6687	0.0999	0.5994	INSIGNIFICANT			
HBL	0.8357	0.6983	0.0909	0.5458	SIGNIFICANT			
NABIL	-0.9844	0.9690	0.0093	0.0560	INSIGNIFICANT			
SCBL	-0.3186	0.1015	0.2710	1.6261	INSIGNIFICANT			

Table no 15

Source: Annual report and website of concerned bank

The correlation coefficient between debt equity ratio and return on assets of EBL, HBL, NABIL and SCBL is -0.8178, 0.8357, -0.9844 and -0.3186 respectively. Here correlation of coefficient of EBL, NABIL and SCBL shows negative relationship whereas HBL show positive relationship. Value of r is less than 6 times probable error of given banks, which shows the value of r is insignificant i.e. there is not significant relationship between debt to equity and return on assets except for the case of HBL. It shows that the selected banks are insignificant in terms of debt to equity on assets. It is clear that the debt to equity ratio increase return on assets will also increase and vice versa.

#### 4.3 Simple Regression Analysis

The simple regression helps to determine relationship between different variable considering one as dependent variable and other as independent variables. With the help of known variable one known variable one unknown variable can be estimated and it also determined the relation between each dependent and independent variables. For the study only regression analysis had been considered.

#### 4.3.1 Relationship between Cost of Equity (Ke) and Leverage (D/S)

The main objective of this section is to determine the relationship between leverage and cost of equity of the selected companies. Based on the traditional view Ke either remain constant or raises slightly with moderate level of debt and increases with leverage at increasing rate. Beside, the MM proposition argues that the cost of equity increases linearly with leverage. Above stated view hold the equity decreases or remains constant up to a point with the leverage. The relation between Ke and D/S can be present mathematically as below:

Ke = a + b D/S

Where,  $K_e = Cost of equity$ 

D/S= Leverage

### Table no. 16Relationship between (Ke) and D/S

Companies	Intercepts	Regression	Correlation	T- statistic
		Coefficient	Coefficient	
EBL	6.70	0.002282	0.04	0.69
HBL	20.49	-0.2059	-0.53	-1.0820
NABIL	14.48	-0.09278	-0.54	-1.111
SCBL	3.43	0.052768	0.25	0.4470

Source: Annual report and website of concerned bank

The regression coefficient of  $K_e$  on D/S was negatively related so this indicates that decrease in funded debt to shareholder's fund leads to increases in  $K_e$  Regarding correlation coefficient NABIL had highest negative correlation in negative sign. In same way HBL and NABIL had negative correlation which meant the increase in leverage leads to

decrease in the  $K_e$  . But T-statistics is not significance in case of all banks.

# 4.3.2 Relationship between Return on shareholder's fund (ROS) and Leverage (D/S)

The relationship between ROS and D/S of the selected companies reveals whether the ROS changes linearly or not with change in D/S. ROS was taken as dependent variable upon D/S which is independent variable. The relation between ROS and D/S are shown below:

ROS = a + b D/S Where, ROS= Return on Shareholder's fund D/S= Leverage

### Table no 17Relationship between ROS and D/S

Companies	Intercepts	Regression	Correlation	T- statistic
		Coefficient	Coefficient	
EBL	20.65	0.0186	0.35	0.647
HBL	-17.61	0.599	0.56	1.17
NABIL	33.94	-0.0261	-0.44	-0.848
SCBL	36.96	-0.0354	-0.29	-0.524

Source: Annual report and website of concerned bank

The regression coefficient of ROS on D/S shows positive relationship in EBL and HBL where as negative relationship in NABIL and SCBL. The correlation coefficient is also same as regression coefficient; positive indicates the leverage increased the Return on Shareholders and vice versa. T- Statistics for the variables was not significant in all the banks.
# **4.3.3 Relationship between Earning Per Share (EPS) and Leverage** (D/S)

In this section using simple regression the relation between the EPS and D/S for selected companies had been calculated. The impact of Leverage upon EPS of selected companies had been explored by taking EPS as dependent variable and D/S as independent variable.

EPS = a + b D/S Where, EPS= Earning Per Share D/S= Leverage

#### Table no 18

#### **Relationship between EPS and D/S**

Companies	Intercepts	Regression	Correlation	T- statistic
		Coefficient	Coefficient	
EBL	79.22	-0.1085	-0.23	-0.409
HBL	-4.58	0.9359	0.75	1.9630
NABIL	115.29	-0.0094	-0.01	-0.017
SCBL	131.89	0.3082	0.29	0.5248

Source: Annual report and website of concerned bank

The regression coefficient of EPS on D/S was negative for EBL and NABIL banks where as other banks has positive regression coefficient .This increased in leverage decreases the EPS of the companies. The correlation coefficient was higher for HBL but shows negligible relation incase of EBL, SCBL and NABIL. T-statistics shows correlation coefficient of all the banks to be significance at 5 percent level of

significant. So regression result concludes that increase in D/S leads to decrease EPS of selected companies except for the EBL and NABIL.

# 4.3.4 Relationship between Price Earning Ratio (P/E) and Leverage (D/S)

The objective of this section was to determine the empirical relationship between D/S and P/E ratio. The study tried to find out whether P/E ratio changes proportionately or not with the change in leverage. The result is calculated by using simple regression model in which P/E ratio was taken as dependent variable and D/S as independent variable.

> P/E = a +b D/S Where, P/E = Price Earning ratio D/S= Leverage

# Table no 19Relationship between P/E ratio and D/S

Companies	Intercepts	Regression	Correlation	T- statistic
		Coefficient	Coefficient	
EBL	25.41	-0.01547	-0.07	-0.1215
HBL	-14.35	0.5782	0.48	0.9476
NABIL	-23.15	0.6133	0.89	3.3807
SCBL	51.57	-0.3661	-0.40	-0.7559

Source: Annual report and website of concerned bank

The regression coefficient of P/E ratio on D/S was found to be positive for all selected companies except in case of EBL and SCBL. This indicates there was linear relationship P/E ratio and D/S this means increase in D/S leads to increase in P/E ratio. The correlation coefficient was positive for HBL and NABIL where as other banks has negative correlation coefficient. This indicates that increase in D/S leads to increase in P/E ratio in case of HBL and NABIL bank where as other a bank seems to be insignificance at the 5% level of significance at (5-1) degree of freedom.

#### 4.4 Major Findings

- In terms of total debt to total assets revels that the selected banks are low leveraged on five year time horizon. It means the assets of selected banks have been financed more funds collected from shareholders. HBL has average lower than other banks.
- EBL has an average 116.55 times of D/E ratio which means debt capital financing is 116.55 times higher than equity financing.HBL has an average of 64.64 times D/E ratio. It means debt capital financing is more than 64.64 times higher than equity financing. In same way NABIL has 79.48 and SCBL has 66.01.
- SCBL able to maintain highest interest coverage ratio than other banks. Its average interest coverage ratio during five years period is 3.81 times. Whereas EBL has interest coverage ratio of 1.86, HBL has 1.98 and NABIL has 3.04 times during five years. Ratio the computed interest coverage ratio of all banks in above shows how many times the interest changes are covered by funds that the ordinary available to pay interest charge.
- The degree of financial leverage of SCBL has the lowest ratio of 1.36 times on an average, which reflects the bank has lower degree of financial risk. EBL constitutes higher degree of financial leverage,

which represents higher financial risks for the bank. Average DFL of EBL is 2.19, HBL has 2.03 and NABIL has 1.51.

- Average ROA of NABIL is more than other banks which is 2.61.other banks has comparatively less ROA which is EBL has 1.49 average ROA,HBL has 1.38 average ROA and SCBL has 2.43 average ROA over the study period.
- Average ROE of SCBL has highest 34.62 percent of return than other banks.EBL has ROE of 22.82 percent, HBL has 21.12 percent of ROE and NABIL has 31.86 percent of ROE. Less ROE shows the weak performance of banks, in the maximizing the shareholder's equity.
- Average earning per share of SCBL is more than other banks. It has 152.52 whereas EBL has 66.40, HBL has 55.92 and NABIL has 114.54 over the study period. Earning per share of SCBL is high than other banks which help to maximize the shareholder's wealth.
- SCBL found to be paying relatively more dividend in an average of Rs.126.EBL has DPS of 26.67, HBL has DPS of 34.32 and NABIL has DPS of 92. In comparison to all banks SCBL has highest and EBL has lowest dividend per share.
- Trend of price earning ratio shows the fluctuating trend. Average price earning ratio of EBL has 23.61, HBL has 23.03 price earning ratio, NABIL has 25.59 price earning ratio and SCBL has 27.45 price earning ratio over the study period.
- ➤ Average overall capitalization rate of SCBL has 8.39 which are less than other banks.EBL has average of 12.22 overall capitalization

rates, HBL has average of 12.52 overall capitalization rate and NABIL has average of 9.11 overall capitalization rate.

- Equity capitalization ratio of banks was fluctuating is active. Average capitalization of EBL has average of 6.96 which is in decreasing trend and market values above the par value in all bonus.HBL has 7.18 average equity capitalization rate, NABIL has 7.11 average equity capitalization rate and SCBL has 6.91 average equity capitalization rate over the study period.
- Correlation coefficient between EBIT and interest payment of all the banks are positive relationship. It shows increase in EBIT, increase interest payment. The value of 'r' is significant i.e. there is significant relationship between EBIT and interest payment. It shows that the all banks are significantly able to service their debt. EBL has 0.995, HBL has 0.985, NABIL has 0.972 and SCBL has 0.981.
- Correlation coefficient between overall capitalization rate and debt equity of HBL and NABIL is -0.632 and -0.5627 which showed negative relationship. Correlation coefficient of these banks i.e. 'r' is less than P.E. so the value of 'r' is insignificant i.e. there is insignificant relationship between overall capitalization rate and debt equity. Hence we can finalize that there is no proper relationship between overall capitalization rate and debt equity ratio.
- Relationship between the return on equity and debt to equity ratio of these banks over the study period are as follows. Correlation coefficient of EBL is 0.3527, HBL is 0.5647, NABIL is -0.4379 and SCBL is -0.2949.Here the relationship of EBL and HBL is positive and NABIL and SCBL have negative relationship. Considering the probable error (P.E.) the value of 'r' is greater than six times of the probable error. Therefore it is depicted that the value of r in all banks

is insignificant. This means that there is insignificant relationship between return on equity and debt to equity in all the banks.

- Correlation between debts to equity ratio and return on assets. Correlation coefficient EBL is -0.8178, HBL is 0.8357, NABIL is -0.9844 and SCBL is -0.3186. Here correlation coefficient of HBL shows the positive relationship. Value of 'r' is less than six times probable error of selected banks which shows the value of 'r' is insignificant i.e. there is not significant relationship between debt to equity and return on assets. It shows that the selected banks are insignificant in terms of debt to equity and return on assets except of HBL which is significant.
- Regression analysis based on the cost of equity and debt equity ratio. Regression coefficient of EBL is 0.00228, HBL is -0.2059, NABIL is -0.09278 and 0.05276. Its T-statistics values are 0.69,-1.0820,-1.111 and 0.4470 respectively. T-statistics determines the significant of regression analysis 5% level of significance with (5-1) degree of freedom.
- Regression analysis based on the return of shareholder's fund and debt equity ratio. Regression coefficient of EBL is 0.0186, HBL is 0.599, NABIL is -0.0261 and SCBL is -0.0354. Its T-statistics values are 0.647, 1.17,-0.848 and -0.524 respectively. T-statistics determines the significant of regression analysis 5% level of significance with (5-1) degree of freedom.
- Regression analysis based on the earning per share and debt equity ratio. Regression coefficient of EBL is -0.1085, HBL is 0.9359, NABIL is -0.0094 and SCBL is 0.3082. Its T-statistics values are -0.409, 1.9630,-0.017 and 0.5248 respectively. T-statistics determines

the significant of regression analysis 5% level of significance with (5-1) degree of freedom.

Regression analysis based on the P/E ratio and debt equity ratio. Regression coefficient of EBL is -0.01547, HBL is 0.5782, NABIL is 0.6133 and SCBL is -0.3661. Its T-statistics values are -0.1215, 0.9476, 0.3807 and -0.75598 respectively. T-statistics determines the significant of regression analysis 5% level of significance with (5-1) degree of freedom.

## CHAPTER V SUMMARY, CONCLUSION AND RECOMMENDATIONS

Capital structure plays the vital role in the profitability of he shareholders. A capital structure with a reasonable proportion of debt and equity capital is called optimum capital structure. The main function of manager is to determine the proportion of equity capital debt capital. If a company can increase its total valuation by varying its capital structure, an optimal financing mix would be in increase

#### **5.1 Summary**

Basically, concerned on the various aspect of the study on capital structure of selected commercial banks in Nepal, It covers five fiscal years starting from 2003/04 to 2007/08. It includes the data of four commercial banks.

To accomplish the setting objectives in first chapter, the necessary data and other various information or collected from the financial statements of each individual bank. Similarly, the requirement of data is mostly fulfilled from "The annual report of selected banks." In some year, some of the required figures or data are available from the inquiry with relevant staff of the concern banks.

The capital structure position has been analyzed by calculating various ratios. The ratio of debt is slightly fluctuating trend; the creditor's margin of safety is very low, which shows high risk. SCBL is able to maintain highest interest coverage ratio than other banks. Its average ratio during the five year's period is 3.81 times. Degree of financial

leverage of SCBL has low ratio of 1.36 times which shows low risk and EBL has highest degree of financial coverage which shows high financial risk to the creditor. Leverage ratio measure the long term solvency of firm.ROA ratio of selected banks has mixed trends.ROA of NABIL is 2.61 over the study period.ROE of HBL is least among the selected banks, which shows the weak performance of banks.

Earning per share of SCBL is higher among the selected bank. Here SCBL progress strength on earning per share, which help to maximize the share holder's wealth. In the study period, earning per share of the banks have a fluctuating trend. Dividend per share of EBL, HBL and NABIL is the lower than SCBL. HBL distributes bonus share for the issue of bonus share is advantageous is same case. It reduces the market price per share and it's more attractive to investor. Overall price earning ratio shows the fluctuating trend in the study period.

The NI approach implies that proportion of high leverage consequently increase the value of the firm. The approach is well acquainted with this study as the value of the banks has increased in accordance to the increasing portion of leverage. The  $K_0$  of selected banks are positive. SCBL has the less overall capitalization and HBL has higher overall capitalization rate in the study period.

The correlation coefficient of NABIL and SCBL has negative value of 'r' in ROE and debt to equity ratio. All banks have insignificant relationship between ROE and debt to equity ratio. The ROA will increase by the regression analysis net profit function i.e. net profit is the function of interest, exchange and other income.

#### **5.2 CONCLUSION**

From the study, banks are found to be highly leveraged. The company's financial mix account a higher proportion of debt and it is increasing every year. The growth and increasing integration of the world'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 technique 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 competition. Most of the banks cannot manage the current assets. Because of the inefficient current management company cannot fulfill the organizational objective i.e. to earn maximum profit and maximizing the share holder equity.

The debt shareholder's fund ratio calculated is relation to the proportion of funded debt to shareholder fund which shows percentage of fund is many times greater than shareholder's fund in the bank. The interest coverage ratio during the study period was positive for all selected bank. The average EPS of SCBL is high than other banks. In Nepalese banking trend of profit is not increasing, profit level is less than the standard level of return on investment. Cost of existing condition, bank may not be run in long term. 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 banks for the statistical analysis is found positive to each other. The coefficient is all statistically significant in more than average banks. A positive correlation means both of the variables are moving towards the same direction and vice versa.

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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.

#### **5.3 RECOMMENDATIONS**

The sound capital structure enhances the profitability and growth of any company and it also indicates sound financial position of the company. The capital structure decision in term of banking is very much different from other industry. Bank enjoyed by using outsider's fund by various measures in variety of assets in order to provide good return to their shareholder. As the outsider's fund is very higher than owner's fund financial manager must be very much sensible in each step of investing and lending the fund in various assets. If bank fail to make handsome return, it may bring worse period for the bank. Based on finding following recommendation are proved financial position of EBL, HBL, NABIL and SCBL.

The capital structure of selected banks is highly leveraged. HBL has lower leverage ratio in compared to other banks. It is good making handsome return by employing outsider's fund but at same time it also brings risk to the bank. The proportion of debt and equity capital should be decided keeping in mind that effort of tax advantage and financial distress. The banks, when in difficulty to pay interest and principal, ultimately lead to liquidation or bankruptcy. For such the bank should reduce the high use of debt capital.

- The ROS, ROA and EPS of HBL and EBL are very low in comparison to NABIL and SCBL. So they need to seek more profitable area in order to increase profit of the bank. And they also need to maintain optimal capital structure considering cost of capital so that it helps to enhance the ROS and profitability of the banks.
- Dividend payout ratio should be determined considering the shareholder's expectation and the growth requirements of the banks. A higher payment attracts both the existing and potential investors leading to increase in market price of the share, which consequently leads to the strength of financial capacity. Hence EBL and HBL banks are recommended to maintain consistent dividend payout ratio.
- The earnings of all the selected banks are fluctuating. Yearly this may be due to the providing economic, political condition of the country. But the banks need to enhance their profitability by increasing efficiency in their productivity and decreasing the cost.
- The central bank as a regulating supervising and directing bank mandates all the commercial banks to increase their capital fund to Rs. one billion and also needed to maintain sufficient capital adequacy ratio as per NRB directives. So all selected banks need to adopt the guidance of the central bank to maintain appropriate capital structure so safe guard the depositor's money.
- All the selected banks need to review and monitor leverage ratio regularly so that risk to the bank may not increase which may effect in efficient operation of the banks and it is basically not concerned to mobility their deposit fund to productive areas. So they are proposed to come forward to match government obligation by financing the priority sector development program.

High risk to make high profit. Thus the management should not consider it as danger. It is the ability to manage the current assets properly and efficiently for the efficient utilization of current assets. The management should identify its strength and weak points. To develop the managerial ability there should be trained, participating in management, conferences, foreign enterprises tour and need of the changing time and situation for the managerial level employees.

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#### **Debt Ratio**

#### **Everest Bank Limited**

Fiscal year	2003/04	2004/05	2005/06	2006/07	2007/08
Total Debt	864350232	802208064	1194031398	2044805493	1251806769
Total Assets	960857086 1	1173251641 8	15959284687	2143257430 0	27149342884
Ratio (%)	0.09	0.07	0.07	0.10	0.05

## Himalayan Bank Limited

Fiscal year	2003/04	2004/05	2005/06	2006/07	2007/08
Total Debt	1427525650	904630165	1203362416	1324223700	1819750679
Total Assets	2572978700 0	2741815787 3	29460389672	33519141111	36175531637
Ratio (%)	0.05	0.03	0.04	0.04	0.05

#### **NABIL Bank Limited**

Fiscal year	2003/04	2004/05	2005/06	2006/07	2007/08
Total Debt	1144771000	942083000	1107577221	1854057966	2780512693
Total Assets	16745486000	17186330000	22329971078	27253393008	37132759149
Ratio (%)	0.07	0.05	0.05	0.07	0.07

#### Standard Chartered Bank Limited

Fiscal year	2003/04	2004/05	2005/06	2006/07	2007/08
Total Debt	984878000	1253102000	952181210	1833315335	1099241536

Total Assets	23642059000	22171240000	25767352068	28596689451	33335788326
Ratio (%)	0.04	0.06	0.04	0.06	0.03

### **Debt to Equity Ratio**

#### **Everest Bank Limited**

Fiscal year	2003/04	2004/05	2005/06	2006/07	2007/08
Total Debt	864350232	802208064	1194031398	2044805493	1251806769
Total Equity	680318543	832617365	962808301	1201515266	1921237580
Ratio (%)	1.27	0.96	1.24	1.70	0.65

### Himalayan Bank Limited

Fiscal year	2003/04	2004/05	2005/06	2006/07	2007/08
Total Debt	1427525650	904630165	1203362416	1324223700	1819750679
Total Equity	2291928000	1541746461	1766175616	2146499655	2512991602
Ratio (%)	0.62	0.58	0.68	0.62	0.72

## NABIL Bank Limited

Fiscal year	2003/04	2004/05	2005/06	2006/07	2007/08
Total Debt	1144771000	942083000	1107577221	1854057966	2780512693
Total Equity	1481682400	1657638400	1874994417	2057049715	2437198989
Ratio (%)	0.77	0.56	0.59	0.90	1.14

### Standard Chartered Bank Limited

Fiscal year	2003/04	2004/05	2005/06	2006/07	2007/08
Total Debt	984878000	1253102000	952181210	1833315335	1099241536
Total Equity	1495739000	1582415000	1754138777	2116353361	2492547996
Ratio (%)	0.65	0.79	0.54	0.86	0.44

#### Interest Coverage Ratio

**Everest Bank Limited** 

Fiscal year	2003/04	2004/05	2005/06	2006/07	2007/08
EBIT	527483741	54969435 7	745441598	97187469 8	1291296064
Interest	316366263	29956526 9	401397351	51716624 1	632609264
Ratio (%)	1.66	1.83	1.85	1.87	2.04

## Himalayan Bank Limited

Fiscal year	2003/04	2004/05	2005/06	2006/07	2007/0
					8
EBIT	912117000	1084504337	1321240757	148481430 6	1772583689
Interest	491543000	561963770	648841818	767411247	823744838
Ratio (%)	1.85	1.93	2.03	1.93	2.15

#### NABIL Bank Limited

Fiscal year	2003/04	2004/05	2005/06	2006/07	2007/08
EBIT	940022000	762181000	1255165097	1550756070	1847426216
Interest	282948000	243544000	357161304	555710109	758436212
Ratio (%)	3.32	3.12	3.51	2.79	2.43

## Standard Chartered Bank Limited

Fiscal year	2003/04	2004/05	2005/06	2006/07	2007/08
EBIT	1049402000	1052274000	1242572950	1429150366	1665102660
Interest	275809000	254126000	303198419	413055152	471729700
Ratio (%)	3.80	4.14	4.09	3.45	3.53

## Return on Shareholder's Equity

#### **Everest Bank Limited**

Fiscal year	2003/04	2004/05	2005/06	2006/07	2007/08
Total Equity	680318543	832617365	962808301	1201515266	1921237580

Net Profit	143580000	168214611	237290936	296409281	451218613
Ratio (%)	0.21	0.20	0.24	0.24	0.23

#### Himalayan Bank Limited

Fiscal year	2003/04	2004/05	2005/06	2006/07	2007/08
Total Equity	2291928000	1541746461	1766175616	2146499655	2512991602
Net Profit	263052000	308275171	457457696	491822905	635868519
Ratio (%)	0.11	0.19	0.25	0.22	0.25

#### NABIL Bank Limited

Fiscal year	2003/04	2004/05	2005/06	2006/07	2007/08
Total Equity	1481682400	1657638400	1874994417	2057049715	2437198989
Net Profit	455311000	518637000	635266650	673959698	746468394
Ratio (%)	0.30	0.31	0.33	0.32	0.30

#### Standard Chartered Bank Limited

Fiscal year	2003/04	2004/05	2005/06	2006/07	2007/08
Total Equity	1495739000	1582415000	1754138777	2116353361	2492547996
Net Profit	537800000	539204000	658755881	691668064	818921008
Ratio (%)	0.21	0.19	0.24	0.17	0.39

## **Earning Per Share**

Bank	Fiscal year	2003/04	2004/05	2005/06	2006/07	2007/08
EBL	J	45.58	54.22	62.78	78.4	91.82
HBL		49.05	47.91	59.24	60.66	62.74
NABIL		92.61	105.49	129.21	137.08	108.31
SCBL		143.55	143.14	175.84	167.37	131.32

### **Dividend Per Share**

Bank	Fiscal year	2003/04	2004/05	2005/06	2006/07	2007/08
EBL			20		30	30
HBL		20	31.58	35	40	45
NABIL		65	70	85	140	100
SCBL		110	120	140	130	130

## Price Earning Ratio (%)

Bank	Fiscal year	2003/04	2004/05	2005/06	2006/07	2007/08
EBL	<u>]                                    </u>	14.93	16.04	21.97	31	34.11
HBL		17.12	19.2	18.97	28.69	31.56
NABIL		10.80	14.27	17.34	36.84	48.7
SCBL		12.16	16.38	21.47	35.25	51.77