

# **A STUDY ON THE CAPITAL STRUCTURE OF NEPALESE COMMERCIAL BANKS**

*By:*

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Tribhuvan University

*In partial fulfillment of the requirements for the Degree of  
**Master of Business Studies (M.B.S.)***

April 2009

Putalisadak, Kathmandu

# **RECOMMENDATION**

This is to certify that the thesis

*Submitted by:*  
**Rabin Bariya**

Entitled

**“A STUDY ON CAPITAL STRUCTURE OF NEPALESE COMMERCIAL  
BANKS”**

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

Supervisor:

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## **DECLARATION**

I hereby declare that the work reported in this thesis entitled “**A STUDY ON THE CAPITAL STRUCTURE OF NEPALESE COMMERCIAL BANKS**” submitted to Office of Dean, Faculty of Management, Tribhuvan University, is my original work done for the partial fulfillment of the requirement for the Master of Business Studies under the supervision of Mr Kailash Amatya, Lecturer of Shankar Dev Campus.

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Researcher

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Date: April, 2009

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I would like to convey my sincere thanks to my family members especially to my wife Ms Roshani Banepali who supported and encouraged me throughout the course of the study. My sincere thank also goes to all friends and well wishers who helped me directly and indirectly during this study.

Needless to say 'to err is human' and I cannot be the exception. For any error in the calculation and the description reported in this dissertation are, of course, entirely my responsibility. I hope the possible error and improvements needed would be covered by the subsequent studies in this field in the future.

Rabin Bariya

April 2009

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## ABBREVIATIONS

BOKL	= Bank of Katmandu Limited
CE	=Capital Employed
Contd.	= Continued
DFL	=Degree Of Financial Leverage
DPS	=Dividend Per Share
EBIT	=Earning Before Interest & Tax
EPS	=Earning Per Share
FY	= Fiscal Year
HBL	=Himalayan Bank Limited
LTD	=Long Term Debt
NIB	=Nepal Investment Bank Ltd
NEPSE	=Nepal Stock Exchange
NI	=Net Income
NOI	=Net Operating Income
Rs.	= Rupees
ROA	= Return On Assets
ROE	=Return On Equity
ROSHE	=Return On Shareholders' Equity
SHE	= Shareholders' Equity
TA	=Total Assets
TD	=Total Debt
WACC	=Weighted Average Cost of Capital

# CHAPTER 1

## 1. INTRODUCTION

### *1.1 Background of the Project*

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

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

In other words, banks are the institutions offering deposits subject to withdrawal on demand and making loans of a business nature. Banks offers wide range of financial services like credit, savings, payments services etc.

#### 1.1.1 Evolution of Banking Industry

The basis of banking is the expectation that the business will generate money at some time in the future to repay the amount lent or invested, plus a return to the owner of the funds.

Banking is nearly as old as civilization. The ancient Romans developed and advanced banking system to serve their vast trade network, which extended throughout Europe, Asia, and much of Africa.

According to historical sources, the goldsmiths and moneylenders contributed to a large extent in the growth of banking. In the early age, the goldsmiths used to store peoples gold charging nominal charges and issued receipts to the depositors, which was good for payments. At the time, this was done for security rather than interest. Later they started advancing the money charging interest. The goldsmith-moneylender started performing the functions of modern banking, i.e., accepting deposits and advancing loans.

However, the modern banking originated in Italy in 1157, with the establishment of the first bank “Bank of Venice” to finance the monarch in the wars. Following it were the establishments of Bank of Barcelona and the Bank of Genoa in 1401 AD and 1407 AD respectively. With large banking firms established in Florence, Rome, Venice, and other Italian cities banking activities spread throughout Europe and slowly spread throughout the world. Since the 1960’s, banking has become much more international because of the increase in the number of multinational companies and the spread of their operations worldwide.

### 1.1.2 Development of Banking Industry in Nepal

Nepal is a small landlocked nation hidden in the Himalayan Mountains nestled in between India and China. Both the countries have matured economics conditions where as Nepal is one of the under developed countries in the world with almost half the population living below the poverty line as it is ranked as one of the world's poorest.

The development of banking is relatively recent in the context of Nepal. As in other countries goldsmiths and landlords were the ancient bankers of Nepal. The Nepali banking system is small and fragmented. History of banking in Nepal in the true sense started in the year 1994 BS with the establishment of Nepal Bank Limited, Nepal's first commercial bank, established as a joint venture between the government and private individuals.

Nepal Rastra Bank the central bank was set up on 2013 BS to make the banking system more systematic and dynamic and to help the government formulate monetary policies

and to develop the financial sector. As Nepal adopted planned development program in the mid fifties, the nation felt dearth of financial resources. Existing banking with only one commercial bank, were not sufficient to meet the growing needs of the country. Therefore, the need to establish another commercial bank was felt and Rastriya Banijya Bank was established as a milestone. The progress in the banking system in Nepal was felt after the establishment of the Rastriya Banijya Bank a state-owned commercial bank, with the authorized capital of Rs. 10 million was established in 2022 BS to play a major role not only in domestic banking services but also in the foreign trade. Agricultural Development Bank was established in 2024 BS, to develop agricultural sector and support it financially.

In 2041 BS, Nepal's first joint venture bank, Nepal Arab Bank Ltd (now known as Nabil Bank Ltd) was established which proved to be a milestone in the history of banking. In 2042, Nepal Indosuez Bank Ltd (now known as Nepal Investment Bank Ltd) and in 2043, Nepal Grindlays Bank Ltd (now known as Standard Chartered Bank Ltd) were established. After restoration of democracy in 2046, Himalayan Bank Ltd. was established in 2049. Since then number of other commercial banks have been established. Today, there are 22 commercial banks existing in Nepal so far.

1.1.3 Introduction to Bank Of Kathmandu Ltd., Himalayan Bank Ltd., and Nepal Investment Bank Ltd.

#### **Bank of Kathmandu Ltd.**

Incorporated in 1993, in collaboration with SIAM Commercial Bank PCC, Thailand, Bank of Kathmandu started operation in March 1995. Out of 30% holding diluted 25% holdings to the Nepalese citizens in 1998. It is a culmination of a comprehensive vision of the promoters to take the Nepalese economy to a newer realm in the global market. Promoters own 42% of total share of the bank and general public owns the other 58%.

### **Himalayan Bank Ltd.**

Himalayan Bank Ltd, the first commercial bank of Nepal with maximum shareholding by the Nepalese private sector, was incorporated in 1992 by a few distinguished business personalities of Nepal in partnership with Employees Provident Fund and Habib Bank Limited, one of the largest commercial bank of Pakistan started operation in 1993.

Besides commercial activities, the bank also offers industrial and merchant banking. The bank started its operation with the authorized capital of Rs. 100 million, issued capital of Rs. 65 million, and paid up capital of Rs. 42.9 million.

### **Nepal Investment Bank Ltd.**

Nepal Investment Bank Ltd, previously Nepal Indosuez Bank Ltd, was established in 1986 as a joint venture between Nepalese and French partners. The French partner (holding 50% of the capital) was Credit Agricole Indosuez, a subsidiary of one of the largest banking group in world. On April 2002, with the decision of French partner to divest, the 50% holding has been acquired by a group of companies comprising of bankers, professionals, industrialists and businessmen and the name has been changed to Nepal Investment Bank Ltd. Of the total shares of the bank the group of companies, 15% by Rastriya Banijya Bank, and 15% by Rastriya Beema Sansthan holds 50%, and the General Public holds the remaining 20%. The banks initial authorized capital stand at Rs. 59 million with the issued capital of Rs. 29.5293 million and paid up capital of Rs. 29.5293 million.



## ***1.2 Capital Structure of Commercial Banks***

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

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

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

Firstly, we must decide what we mean by a good capital structure. This would be a capital structure, which results in a low overall cost of capital for the company, that is, a low overall rate of return that needs to be paid on funds provided. If the cost of capital is low, then the discounted value of future cash flows generated by the company is high, resulting in a high overall company value. The objective is therefore to find the capital structure that gives the lowest overall cost of capital and, consequently, the highest company value.

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

proportion of debt and equity, minimizes the opportunity cost of capital and maximizes the shareholders' wealth.

### ***1.3 Statement of the Problem***

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

Another problem faced by the banking industry is the lack of optimal capital structure in the commercial banks. The success and prosperity of a bank relies heavily on maximization of the wealth of the shareholders or return on equity. Nepalese banks do not take the capital structure concept seriously. The combination of debt and equity used in the capital structure is not proportionate which in turn affects the value maximization of the bank.

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

1. Whether or not the capital structure affects the growth of the bank?
2. To what extent the capital structure policy is followed by the commercial banks?
3. What are the main problems faced by the commercial banks in developing and implementing the capital structure policy?

### ***1.4 Objectives of the Study***

The basic objective of this study is to analyze the capital structure and its affects on the risk and returns of the commercial banks in context of Nepal. The specific objectives are given below:

1. To evaluate the role of capital structure on the growth of the commercial banks in Nepal.
2. To analyze the capital structure of the commercial banks in Nepal.
3. To analyze the relationship of capital structure with variables such as earning per share, dividend per share, and net worth.
4. To provide the suggestion on the basis of findings for further growth of the banks under study.

### ***1.5 Scope of the Study***

In the context of Nepal, there is less availability of research works, journals and articles in the field study concerning the capital structure of commercial banks as well as other financial institutions. As it is a well known fact that the commercial banks can affect the economic condition of the whole country, the effort is made to highlight the capital structure policy of commercial banks expecting that the study can balance the proportion of the equity and debt capital used by the commercial banks. On the other hand, the study would provide information to the management of the bank that would help them to take corrective action to optimize the value of the bank by using optimal capital structure. This study can provide information to the shareholders and the public on the proportion of equity and debt used as the fund by the bank.

### ***1.6 Organization of the Study***

The study has been organized into five chapters, each devoted to some aspects of the study of capital structure. Chapter One to five consists of introduction, review of literature, research methodology, and presentation and analysis of data, and summary, conclusions and recommendations of the study. The rationale behind this kind of approach is to follow a simple research methodology approach.

**Chapter One** deals with major issues to be investigated along with background of the study, statement of the problem, and objectives and scope of the study.

**Chapter Two** includes a discussion on the conceptual framework and review of the major empirical works as well as review of Nepalese studies. The conceptual considerations and review of related literature conducted in this chapter provides a framework with the help of which the study has been accomplished.

**Chapter Three** describes the research methodology employed in the study. This chapter deals with research design, nature and sources of data, and data analysis tools.

**Chapter Four** consists of presentation and analysis of data, which deal with the empirical analysis of the study.

Lastly, **Chapter Five** indicates the summary, conclusions and recommendations of the study.

### ***1.7 Limitations of the Study***

This study is simply a study for the partial fulfillment of MBS degree, which has to be finished within a short span of time. This is not far from several limitations, which weaken the objective of the study. Some of the limitations are given below:

1. The study is mainly based on secondary data. So the result depends on the availability and reliability of the secondary data.
2. The study covers the period of five fiscal years only.
3. Out of the numerous affecting factors only those factors related with capital structure are considered.
4. Out of 26 commercial banks, only 3 banks are taken into account to do the comparative study.

# CHAPTER 2

## 2. REVIEW OF LITERATURE

This chapter is about the review of literature. It is believed that the review of literature is helpful to show the needs of the research work and to justify the work. It gives more information and description of the related theoretical aspects. It tries to clear the conceptual thought and bank related terms. There might be different ways to present the review but I have presented it this way.

### *Conceptual Framework*

Capital structure is the mix (or proportion) of a firm's permanent long term financing represented by debt, preferred stock and common stock equity. (Van Horne, 1997:240)

The financial manager is concerned with determining the best financial mix or capital structure where the optimal financing mix would exist, in which market price per share could be maximized. (Pandey, 1988:203)

Capital structure of the firm is the permanent financing represented by long-term debt, preferred stock and shareholder's equity. Thus, a firm's capital structure is only part of its financial structure. (Weston and Brigham, 1978:565)

Capital structure analysis is the basis for analyzing the usefulness of accumulation from different sources of capital composition of capital is another factor, which affects the profitability. Loan capital dominant enterprises have less chance for prosperity despite of their huge profits. (Kuchhal, 1961:525)

Sound capital structure is required to operate Business smoothly and achieve the business goal. Capital structure is concerned with analyzing the capital composition of the company. (Weston & Brigham, 1978:555)

Capital structure is one of the most complex areas of financial decision making due to its interrelation with other financial decision variables. The success and failure of the enterprise depends on the ability of top management to make appropriate capital structure decision.

### ***Theories Of Capital Structure***

Capital structure is an important subject, especially for firms. A bad capital structure is more expensive than a good capital structure.

Firms raise investment funds in a number of different ways. A firm's mix of these different sources of capital is referred to as its capital structure.

Basically, the theories of capital structure are distinguished into 6 different groups.

- Traditional theory
- Modigliani - Miller theorem
- Trade off theory
- Free Cash Flow theory
- Pecking Order theory
- Stakeholder theory

#### Traditional theory

The first theory is called the "traditional theory". Supporters of this theory believe that the lowest weighted average cost of capital (WACC) will maximize the firms' market value. This means the existence of an optimum relation between debts and equity but it is very difficult to reach that point.

Although it is cheaper to finance with debt, this theory certainly rejects to finance all with debt because after a certain level of debt the risk of non-payment increases. In this case shareholders and debt financiers demand a higher compensation.

## Modigliani - Miller theorem

The next theory is the most important theory, although it is not a realistic theory. The Modigliani - Miller theorem states that if the capital structure decision has no effect on the cash flows generated by a firm, the decision also will have no effect - in absence of transaction costs - on the total value of the firm's debt and equity. This means that there is no relationship between a firm's market value and the capital structure. Profitability of a firm's activities is the only factor that determines the market value.

This theory is based on a perfect capital market. The only market imperfections they admit are corporate taxes. In short, the assumptions of the Modigliani - Miller theorem are (J.C. van Horne, 1995):

Capital markets are perfect

Information is free of costs and widely available.

No transaction costs

Investors behave rational

Every firm has perpetual flows of money with equal time values

Companies can be divided in homogeneous risk classes

There are no taxes

## Trade off theory

The third theory is called the (static) trade off theory. The trade off between the costs and returns of debt financing determines the optimum debt ratio. Firms consider this ratio as a target debt ratio, because this ratio will maximize the market value of a corporation. Myers assumes that firms need to adapt their capital structure to reach that ratio. But an adaptation of the capital structure needs time and costs money. Therefore, it is possible that present temporary debt ratios differ from the target ratios.

Or, as Myers formulated it:



"A static trade off framework, in which the firm is viewed as setting a target debt-to-value ratio and moving gradually towards to it, in much the same way that a firm adjusts dividends to move towards a target payout ratio" (Myers, 1984: 576).

#### Free Cash Flow theory

In the contrary of the trade off theory, in which a firm strives after a maximization of the market value, the free cash flow theory presumes that there are enormous conflicts of interest between shareholders and stakeholders. This implies that manager's decisions don't always maximize the market value of a firm (Jensen, 1986:324).

A free cash flow is the balance of money, when all projects (with positive net present values) are financed. Debt reduces the agency costs of free cash flow by reducing the cash flow available for spending at the discretion of managers (Jensen, 1986:324). Debt also reduces the freedom of decisions, because a firm is forced to pay at certain times interest and payoffs. There will always be risk that a firm won't be able to pay interest and payoffs in future times. This risk causes managers to lead and organize a firm more efficient.

#### Pecking Order theory

Myers also shows another view of capital structure, not the static trade off theory, but also the pecking order theory. This fifth theory assumes that firms have perforations by choosing a way to finance their projects. The sequence of investment resources is restricted by problems caused by asymmetrical information between managers and potential investors. The following assumptions are made by this theory (Myers, 1984):

Firms prefer internal ways to finance projects

Firms adapt their target dividend payout ratio's to available investment resources

Internal resources of a firm are fluctuating because of unpredictable fluctuations of profitability

When firms need extra resources, they prefer the safest way of getting funds; this means that firms prefer debt to convertible stocks and common stocks.

The result of this pecking order theory is that a firm doesn't have a certain target debt ratio. The target ratio is dependant on the way a firm financed its projects in the past. This theory also pays attention to costs of asymmetrical information and costs of bankruptcy.

When these costs exist, a firm doesn't always choose to finance projects with a positive net present value. Not a positive net present value determines whether a firm finance a project or not, but the way in which a firm is able to finance their projects.

Baskin researched the validity of this theory in 1989. He made the following conclusion:

The accumulated evidence in favor of the pecking order hypotheses is now substantial. Now it is possible to provide pecking order behavior with a rational theoretical basis, and there seems no longer any reason to ignore the manifest empirical evidence.

#### Stakeholder theory

Cornell and Shapiro (1987) assume that not only investors have an interest in a firm. There are different groups of non-investor stakeholders, and some of them have a lot of influence in the financial policy of a firm. Or, as Cornell and Shapiro wrote: Financial structure may also depend on a firm's net organizational capital and on the nature of its stakeholders (Cornell and Shapiro, 1987). Examples of non-investor stakeholders are customers, employees and suppliers.

Non-investor stakeholders hold implicit claims. Implicit claims are non-written promises and rights, such as the right to provide service to customers or job-security for employees.

## *Approaches to capital structure*

Traditional approach

Net income approach

Net operating income approach

Modigliani-Miller's approach

All the above approaches are based on some common assumptions, which are as follows:

### **Basic Assumptions and Definitions : ( Weston and Brigham, 1992: 741)**

Only two types of capital are employed, **long-term debt and common stock**.

There is **no tax** on corporate income.

The firm's total assets are fixed, but its capital structure can be changed immediately by selling debt to repurchase common stock, or stock to retire debt.

All earnings are paid out **as dividends**.

All investors have the same subjective probability distributions of expected future operating earnings (EBIT) for a given firm; that is, investors have **homogeneous expectations**.

The operating earnings of the firm are not expected to grow; that is, the firm's **expected EBIT is same** in all future periods.

The firm's business **risk is constant** over time and is independent of its capital structure and financial risk.

The firm is expected to **continue indefinitely**.

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

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

B = total market value of the bonds (Debt)

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

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

I = Interest payments

## Debt

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

$$\text{Value of Debt } (B) = \frac{\text{Interest}}{K_d} = \frac{I}{K_d}$$

## Equity or common stock

$$\text{Cost of Equity Capital } (K_s) = \frac{d_1}{P_o} + g$$

Where,

$d_1$  = Next dividend

$P_o$  = Current price per share

$g$  = Expected growth rate

## Overall or Weighted Average cost of capital

$$K = K_d \left(\frac{B}{V}\right) + K_s \left(\frac{S}{V}\right)$$

$$= \frac{K_d(B)}{B+S} + \frac{K_s(S)}{B+S}$$

The total value of the firm is thus,

$$V = B + S$$
$$= \frac{I}{K_d} + \frac{EBIT - I}{K_s}$$

#### Traditional approach

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

According to this view, the value of firm can be increased or the cost of capital can be reduced by a judicious mix of debt and equity capital, and that an optimum capital structure exists for every firm. This approach very clearly implies that the cost of capital decreases within the reasonable limit of debt and then increases with leverage. Thus, an optimum capital structure exists, and it occurs when the cost of capital is minimum or the value of firm is maximum.

The statement that debt funds are cheaper than equity funds carries the clear implication that the interest rate of debt plus the increased yield on the common stock, together on the weighted basis will be less than yield (cost of equity) which existed on the common stock

before debt financing (Barges, Alexander, 1963:11). That is the weighted average cost of capital will decrease with the use of debt up to a limit.

According to the traditional position, the manner in which the overall cost of capital reacts to changes in capital structure can be divided into three stages. (Soloman, Ezra, 1963:94)

### **First stage: Increasing Value**

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

During this stage cost of debt ( $K_d$ ) remains constant or rises only modestly. The combined effect of all these will be reflected in increase in market value of the firm and decline in overall cost of capital ( $K$ ).

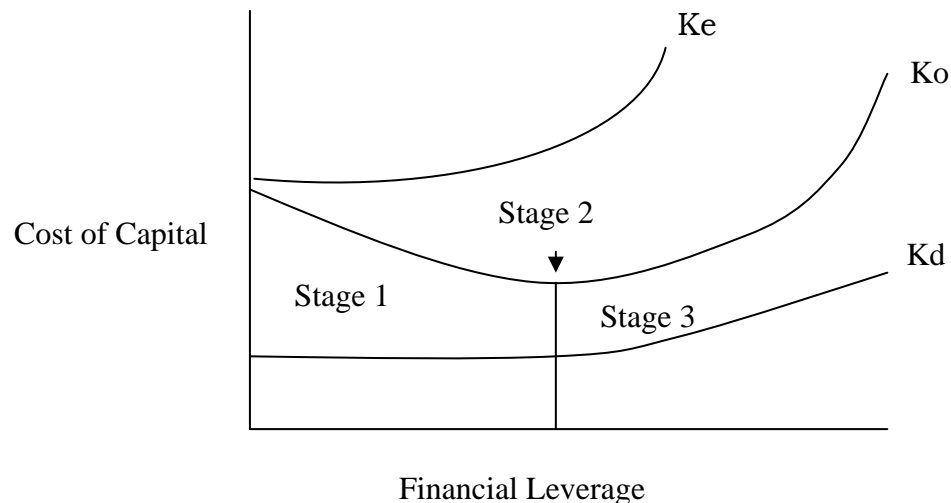
### **Second Stage: Optimum Value**

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

### Third Stage: Declining Value

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

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



**Figure 1: Effect of leverage on cost of capital under traditional theory**

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

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

#### Net Income Approach

David Durand proposed the Net Income Approach. This approach states that firm can increase its value or lower the cost of capital by using the debt capital. According to NI approach, there exists positive relationship between capital structure and valuation of firm and change in the pattern of capitalization bring about corresponding change in the overall cost of capital and total value of the firm. Thus, with an increase in the ratio of debt to equity, overall cost of capital will decline and market price of equity stock as well as value of firm will rise (David Durand, 1959: 91-116). The converse will hold true if ratio of debt to equity tends to decline. The approach assumes no change in the behavior of both stockholders and debt holders as to the required rate of return in response to a change in the debt-equity ratio of the firm. They want to invest since debt holder are exposed to lesser degree of risk, assumed of a fixed rate of interest and are given preferential claim over the profit and assets, the debt holders' required rate of return is relatively lower than that of equity holders. So, the debt financing is relatively cheaper than equity. For this reason, at constant cost of equity ( $K_s$ ) and cost of debt ( $K_d$ ), the overall cost of capital ( $K$ ) declines with the increased proportion of the debt in the capital structure. This suggests that higher the level of debt, lower the overall cost of capital and higher the value of firm.

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

In sum, as per NI approach, increase in ratio of debt to total capitalization brings about corresponding increase in total value of firm and decline in cost of capital. On the contrary, decrease in ratio of debt to total capitalization causes decline in total value of



firm and increase cost of capital. Thus, this approach is appeared as relevancy theory. This approach is based on the following assumptions:

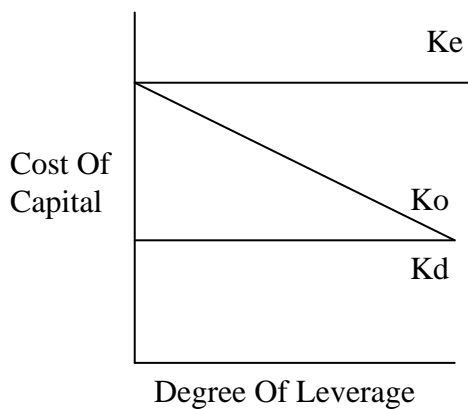
The cost of equity and debt remain constant to the acceptable range of leverage.

The corporate income taxes do not exist.

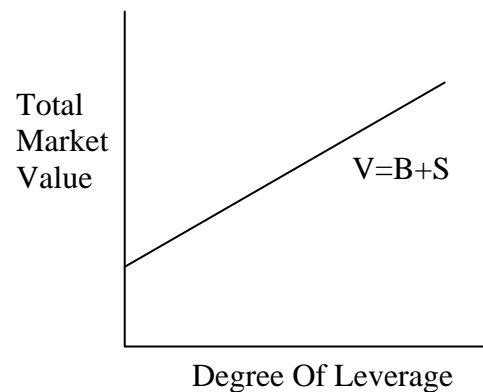
The cost of debt rate is less than the cost of equity.

The increasing leverage brings about no deterioration in the equity of net earnings so long as borrowing is consigned to the amount below the acceptable limits.

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



**Figure 2: The Effect of Leverage On the Capital Structure**



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

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

In brief, the essence of the net income approach is that the firm can lower its cost of capital by using debt. The approach is based on the assumption that the use of debt does not change the risk perception of the investor. Consequently, the interest rate of debt ( $K_d$ ) and the equity capitalization rate ( $K_s$ ) remain constant to debt. Therefore, the increased use of debt results in higher market value of shares and as a result, lower overall cost of capital ( $K$ ).

#### Net Operating Income Approach (NOI)

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

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

The NOI approach is based on following assumptions:

The market capitalizes the value of the firm as a whole. Thus, the split between debt and equity is not important.

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

The use of less costly debt funds increases the risk of shareholders. This causes the equity-capitalization rate to increase. Thus, the advantages of debt are offset exactly by the increase in the equity capitalization rate,  $K_s$ .

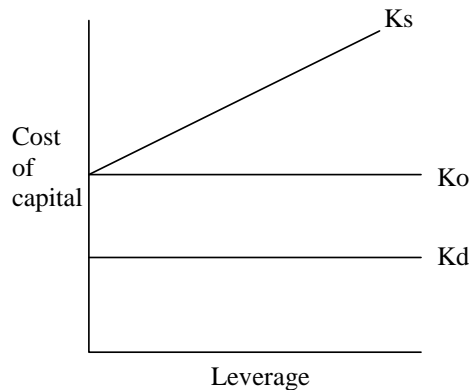
The debt-capitalization rate,  $K_d$  is constant.

The corporate income taxes do not exist.

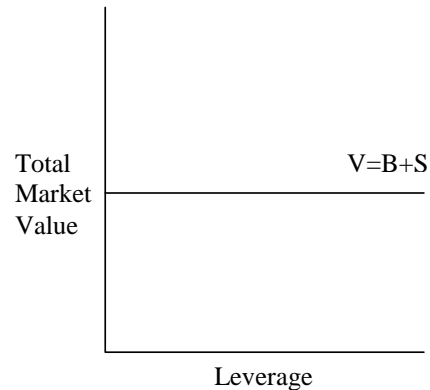
The function of  $K_s$  under NOI approach can be expressed in equation as follows;

$$K_s = K + (K - K_d) B / S$$

The relationship between financial leverage and  $K$ ,  $K_s$ , and  $K_b$  has been graphically depicted in following figures.



**Figure 4: The Effect of Leverage On Cost of Capital**



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

In the figure 4 above, it is shown that the curve  $K$  and  $K_d$  are parallel to the horizontal X-axis and  $K_s$  is increasing continuously. This is because  $K$  and  $K_d$  remain constant under all the circumstances but the  $K_s$  increases with the degree of increase in the leverage. Thus, there is no single point or range where the capital structure is optimum. We know obviously from the figure 4 that under the NOI approach, as low cost of debt is used, its

advantage is exactly offset by increase in cost of equity in such a way that the cost of capital remains constant. By this, value of the firm also remains constant. At the extreme degree of financial leverage, hidden cost becomes very high hence the firm's cost of capital and its market value are not influenced by the use of additional cheap debt fund (Gitman Lawrence, 1988: 791).

#### Modigliani-Miller Approach (MM approach)

The Modigliani-Miller thesis (Modigliani F. and M. H. Miller, "The Cost of Capital, Corporate Finance, and The Theory of Investments", American Economic Review, XLVIII June 1958) relating to the relation is a kin to net operating income approach. MM approach, supporting the net operating income approach, argues that, in the absence of taxes, total market value and cost of capital of the firm remain invariant to the capital structure changes. They make a formidable attack on the transitional position by offering behavioral justification for having the cost of capital,  $K$ , remain constant through all degree of leverage (ibid, 272). MM contend that cost of capital is equal to the capitalization rate of a pure equity stream of income and the market value is ascertained by capitalizing its expected income at the appropriate discount rate of its risk class. MM position is based on the idea that no matter how you divide up the capital structure of a firm among debt, equity and other claims, there is a conservation of investment value (ibid:273). However, the following assumptions regarding the behavior of the investors and the capital market, the actions of the firms and the tax environment are crucial for the validity of the MM hypothesis.

Perfect capital markets: The implication of perfect capital market is that securities are infinitely divisible, investors are free to buy and sell securities, investors can borrow without restrictions on the same terms and conditions as firms can, there are no transaction costs and investors are rational and behave accordingly.

Firms can be grouped into homogenous risk classes. Firms would be considered to belong to a homogeneous risk class as their expected earnings, adjust for scale differences have identical risk characteristics. The share of the homogeneous firm would be perfect substitute for one another.

Firms distribute all net earning to the shareholders, i.e., divided payout ration is 100 percent.

There are no taxes. (This assumption is removed later.)

The assumption of perfect information and rationality all investors have the same exception of firm's net operating income with which to evaluate the value of any firm.

The MM cost of capital hypothesis can be best expressed in terms of their proposition I and II. (Modigliani and Miller, 1969:261-279)

### **Proposition I**

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

$$\begin{aligned} \text{Value of the Firm} &= \text{Market Value of Debt (B)} + \text{Market Value of Equity (S)} \\ &= \frac{\text{Expected net operating income}}{\text{Expected overall capitalization rate}} \\ &= \frac{EBIT}{K} \end{aligned}$$

For an unlevered firm,

$$V_u = \frac{EBIT}{K_s}$$

Where  $K = K_s$  in case of unlevered firm.

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

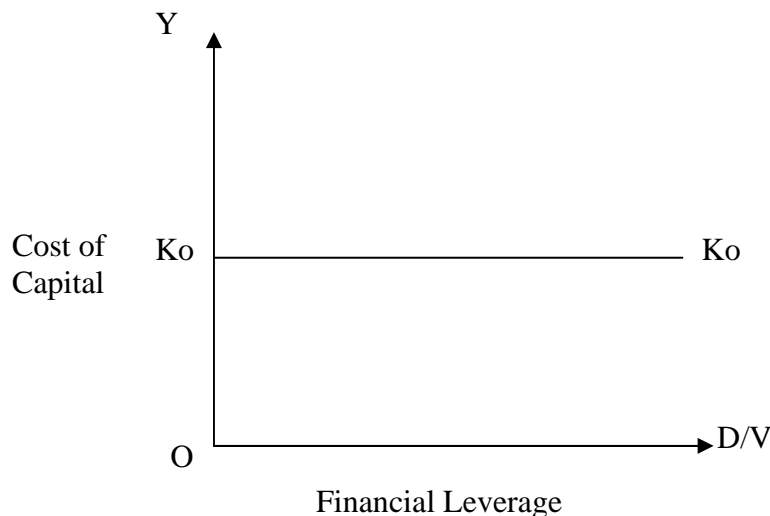
$$\begin{aligned} K &= \frac{NOI}{S + B} \\ &= \frac{NOI}{V} \end{aligned}$$

K can also be expressed as

$$K = \frac{K_s(S)}{S+B} + \frac{K_d(B)}{S+B}$$

It means K is the weighted average of the expected rate of return of equity and debt capital of the firm since the cost of capital is defined as the expected net operating income divided by the total market value of the firm and since MM conclude that the total market value of the firm is unaffected by the financing mix, it follows that the cost of capital is independent of the capital structure and is equal to the capitalization rate of a pure equity stream of its class (Pandey, I.M., 1981:35).

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



**Fig: 6 The Cost of Capital under the MM hypothesis**

Thus two firms identical in all respects except for their capital structure cannot command different market values nor have different cost of capital. But if there is a discrepancy in the market values or the cost of capital, arbitrage will take place, which will enable investors to engage in personal leverage to restore equilibrium in the market (Pandey I.M., 1981:37).

## Proposition II

MM Proposition II, which defines the cost of equity, follows from their proposition I and shows the implications of the net operating approach. The proposition II states that the cost of equity rise proportionately with the increase in the financial leverage in order to compensate in the form of premium for bearing additional risk arising from the increasing leverage (Pradhan, S., 1992:362). The equation for the cost of equity can be derived from the definition of the average cost of capital

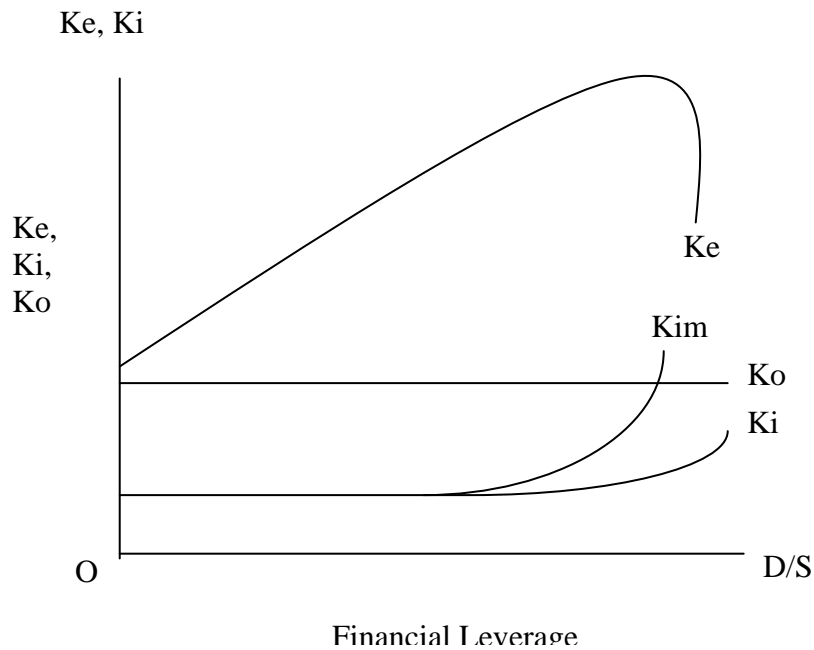
$$K = \frac{K_s(S)}{S+B} + \frac{K_d(B)}{S+B}$$

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

$$K_s = K\left(I + \frac{D}{S}\right) - \frac{K_d(D)}{S}$$

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

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



**Fig: 7 Behavior of Ko, Ki and Ke under M-M Hypothesis**

It is clear from the figure that  $K_s$  will increase till the marginal rate of interest ( $K_{im}$ ) is below the cost of capital. As soon as the marginal rate of interest cuts the cost of capital,  $K_s$  will start falling.

### ***Leverage***

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

#### **Financial Leverage**

Financial leverage is the ratio of total debt to total assets or the total value of the firm (Weston and Brigham, 1981:555). The use of fixed sources of funds, such as debt and preference capital along with the owners equity in the capital structure are described as financial leverage (Waterman, Martin, 1963:7). Financial leverage refers to the response of



shareholders income to change in earning before interest and tax and is created by debt or preferred stock financing with fixed interest and dividend payment (Lawrence, D. Schell and Haley, 1983:325).

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

## ***Review Of Related Studies***

### Review Of Journals

#### ***Modigliani and Miller (June 1958) The cost of Capital, Corporation Finance and the Theory of Investment***

In their first study, MM used the previous works of Allen and Smith in support of their independence hypothesis. Allen's study consisted of an analysis of the relation between security yield and financial structure for 43 large electric utilities, which is based on average figure for the years 1947 and 1948, while smith designed his study of 42 electric utilities.

In the first part of their work MM tested their proposition I, the cost of capital is irrelevant to the firm's capital structure by correlation after tax cost of capital with leverage  $B/V$ . They found that the correlation co-efficient is statistically insignificant and positive in sign.

In the second part of their study, they tested their proposition II the expected yield on common share is linear function of debt to equity ratio. The second part of their study is

consistent with their views i.e. if the cost of borrowed funds increases, the cost of equity will decline to offset this increase

MM conducted the second study in 1963, correcting their original hypothesis for corporate income taxes and expected cost of capital to be affected by leverage for its tax advantages or not, for this they conducted the mathematical analysis regarding the effect of leverage and other variable on the cost of capital, they found that the leverage factors are significant only because of the tax advantage involved. (Miller, M.H. and F. Modigliani, Estimates of the Capital to Electric Utility Industry, 1954-1957, American Economic Review, 56, June 1966:333-391)

***Viet Anh Dang, (2005), Testing the Trade-Off and Pecking Order Theories***

Viet Anh Dang in the study, 'Testing the Trade-Off and Pecking Order Theories', 20 July 2005 examined the performance of two influential but contradicting theories of capital structure, known as the trade-off and pecking order theory. In general, our finding suggests that the trade-off theory holds well under both a partial adjustment and an error correction framework. In specifications that nest both theories, the former theory outperforms the latter theory. The introduction of the cash flow deficit variable has added little amount of additional explanatory power to the trade-off framework. Furthermore, the estimated coefficient on that variable is not found to be statistically equal to unity as it would be if the strict interpretation of the pecking order theory were to hold. The results consistently show that the adjustment process prevails with the speed of adjustment coefficient significant and relatively high (above .50). There has been also some compelling evidence in favor of the relationships between gearing and the conventional determining factors (except profitability), as predicted by trade-off framework. Non-debt tax shields and growth opportunities are reported to be inversely related to debt ratio, while collateral value of assets and size are found to have positive effects upon gearing.

In other respect, the study has posed serious questions on the empirical validity of the pecking order theory. However, given the simplicity of the empirical model, it is impossible to reject the pecking order theory prediction completely.

*Abor J., (2005), The effect of capital structure on profitability, The journal of Risk Finance*

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

Other theories that have been advanced to explain the capital structure of firms include bankruptcy cost, agency theory, and the pecking order theory. These theories are discussed in turn.

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

and costs of debt financing emerged as a theory known as the static trade-off theory by Myers. It values the company as the value of the firm if unleveled plus the present value of the tax shield minus the present value of bankruptcy and agency costs.

In summary, there is no universal theory of the debt-equity choice. Different views have been put forward regarding the financing choice.

*Shrestha, Rima Devi, (1993), Focus on Capital Structure, Pravaha Journal of Management, Nepal Commerce Campus, Kathmandu*

Rima Devi Shrestha conducted a study on the topic 'Focus on Capital Structure of selected and listed public companies.' The study used data from 19 companies, which covered different sectors such as manufacturing, finance, utility service and other allied areas. It was found that most of these companies have debt capital relatively very higher than equity capital. Consequently most of them are operating at losses to the extent that payment of interest on loan has been serious issues. Most of the losses are after charging interest on loan. It has suggested that the government has to consider the public enterprises in evaluating the relationship between use of debt and its impact on overall earning of public enterprises. So government should be sure in knowing how using debt capital will maximize return. It should develop a suitable capital structure guideline to make public enterprises aware of its responsibility to repay the debt schedules. Government has to analyze cost and risk return trade off. Thus, capital structure needs to be made more determinate by realistic analysis of cost. Lastly, she concluded that policy makers have to be careful in developing the suitable capital structure guidelines in making public enterprises as well as listed companies to be aware of financial accountability.

## **Review Of Articles**

*Poudyal S. (2002), Capital Structure: It's Impact on Value of a Firm, Seminar on Emerging Issues and Challenges in Corporate Finance in Nepal, Research Paper Submitted to Faculty of Management, T.U, Kathmandu, Nepal*

“ A study on Capital Structure: It's impact on value of a Firm”, an article by Sudhir Poudyal concentrated to examine the interrelationship between the objective of achieving an optimal capital structure and to provide conceptual framework for the determination of the optimal capital structure.

For this, a hypothetical firm is constructed and different assumptions are laid down to analyze the effect of capital structure. Various statistical and financial tools like ratio analysis are used to extract reasonable figure for the hypothetical firm. It is observed that the minimum weighted average cost of capital, maximum value of the firm and price per share are attained at debt ratio of 30%.

Furthermore, if there is flexibility to select capital structure in any proportion, optimal capital structure range from 30% to 40%. An optimal capital structure would fulfill the interest of equity shareholder and financing requirement of a company as well as other concerned groups.

*Marsh P. (1982), The Choice between Equity and Debt” The Journal of Finance, vol. XXVII No. 1*

In the article, “The Choice between Equity and Debt”, following issues are expressed

Whether companies are having the targeted debt ratio.

Whether they have similar targets from the composition of their debt.

Whether debt ratio or the choice of the finance instrument are influenced by other factors.

How accurately can we predict whether the company will issue equity or debt?

Then he suggested that

While planning their issues, company should consider future as well as current debt ratio.

If the companies are looking at book value debt ratio, there will change during the interest-issuing period of retentions and bank loans.

Any overall change in tax level could cause issuing companies to shift their performance towards either debt or equity.

Small companies rely on bank loan rather than long-term debt because of location, cost and problems of access to capital market.

Equity issues seem to be favorable as it provides strong share price and overall market performance.

#### Review Of Thesis

***Shah A., (2004) “ A Study On The Capital Structure Of Selected Manufacturing Companies (Nepal Lever Ltd., Bottlers Nepal Ltd., Sriram Sugar Mills, Jyoti Spinning Mills, Arun Vanaspati Udhyog)”, Unpublished Master’s Thesis, T.U., Kathmandu***

Ms. Anjana Shah made the study with a purpose to access the debt serving capacity of the mentioned manufacturing companies, examining the relation between Return on Equity and Total Debt, Return on Equity and Debt Ratio, Earning After Tax and Total Debt and Interest and Earning Before Interest and Tax.

Both financial tools such as ratio analysis as well as statistical tools such as correlation co-efficient and regression analysis has been used as the methodology.

The study revealed that Nepal Lever Ltd is fully equity based and has not been using Long Term Debt. The Bottlers Nepal Ltd. is free of Long-term Debt because of improved cash flows and effective management. The Sriram Spinning Mills has 66.33% of assets financed with debt and hence there is less flexibility to the owners. The Degree of Financial Leverage analysis of Jyoti Spinning Mills shows the failure of the company to

gain expected profits. And The Arun Vanaspati Udhyog has a fluctuating Debt Equity Ratio. Its Long Term Debt is decreasing and only creditors make a small share of finance.

***Pandey M. K. (2003), "The Study On Capital Structure Of Standard Chartered Bank Ltd. And Nepal Bangladesh Bank Ltd." Unpublished Master's Thesis, T.U., Kathmandu***

The basic objective of the study made by Ms. Manju Kumari Pandey was to analyze the interrelationship of capital structure with various important variable such as earning per share, dividend per share and net worth of the joint venture banks and to provide suggestions to overcome various issues and gaps.

The study has used financial tools such as Ratio Analysis, EBIT-EPS analysis, overall capitalization rate, equity capitalization rate, total value calculation etc and Statistical tools such as Karl Pearson's correlation and probable errors.

The study concluded that all the joint venture banks are using high percentage of total debt in raising the assets and all the banks are able to pay the interest. The study suggested that the bank must control total deposit and the bank must also control investment. The bank needs to reduce its expenses and control fluctuations in the earnings per share to improve its market price per share.

***Rajlawat K.B, (1999) "The Capital Structure of Necon Air Limited", Unpublished Master's Thesis, T.U., Kathmandu***

The main objective of the study is to analyze and examine the capital structure of Necon Air Limited, examine the financial position, highlight their growth and policies and review various previous studies relating to the study. The study used primary as well as secondary data for the analysis. The methodology used includes financial tools such as Ratio Analysis and statistical tools such as Correlation co-efficient and Probable Error. The study has found that Necon Air Limited has debt equity ratio higher than required.

This higher debt capital is a serious implication from the firm's point of view. In this condition, the capital structure will lead to inflexibility in the operation of the firm as creditors would exercise pressure and interfere with management. Necon Air has raised debt from different commercial banks and has to pay heavy portion of profit as interest, so the payment of the interest will be hazardous when profit is declining. So, it is suggested that Necon Air Ltd should decrease its debt capital as far as possible. It has added that the ratio of 2:1 is the best ratio for optimal capital structure.



# CHAPTER 3

## RESEARCH METHODOLOGY

Research methodology deals with research design, nature and sources of data, data collection procedure and method of data analysis. How research is accomplished depends on the researcher. Research methodology is the way of doing and completing research work

### *Research Design*

Research design is the plan, structure and strategy of investigations conceived so as to obtain answers to research questions and to control variances. It includes an outline of what the investigator will do from writing the hypotheses and their operational implications to the final analysis of data. The structure of the research is more specific. It is the outline, the scheme, and the standard of the operation of the variables. When we draw diagrams that outline the variables and their relation and juxtaposition, we build structural schemes for accomplishing operational research purposes. Strategy, as used here, is also more specific than plan. In other words, strategy implies how the research objectives will be reached and how the problem encountered in the research will be tackled.

The method and definite technique, which guides to study and give ways to perform research work is known as research design. It is most necessary to complete the research and fulfill the objective of the research.

First of all, information and data are collected. The important information and data are selected. Then data is arranged in useful manner. After that, data are analyzed by using appropriate financial and statistical tools. In analysis part, interpretation and comments are also made wherever necessary. Result and conclusion are given after analysis of data,

recommendation and suggestion is also given. The thesis has been adopted from previous research works. Previous thesis styles and formats have been followed.

The main objective of research work is to evaluate the capital structures of Bank of Kathmandu, Himalayan Bank Limited, and Nepal Investment Bank Limited. To complete this study, following design and format has been adopted.

### ***Data Collection Procedure***

#### Nature and Sources of Data

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

#### The Population and Sample

There are all together 23 commercial banks functioning in Nepal, which is the size of the population. Out of them, 3 leading private commercial banks, Bank of Kathmandu Ltd., Himalayan Bank Ltd., and Nepal Investment Bank Ltd., are considered as samples to carry out this thesis.

### ***Tools for Analysis***

For the purpose of data analysis, various financial and statistical tools will be used to achieve the objective of the study. The evaluation of data will be carried out to the pattern of data available.

Different tools have been selected according to the nature of data as well as subject matter. The major tool employed for the analysis of the data is ratio analysis, which

establishes the numerical relationship between two variables of the financial statement. Besides, the statistical tools are also used.

### Financial Tools

Financial analysis is the process of identifying the financial strength and weakness of the firm by properly establishing relationship between the items of the balance sheet. In this study ratio analysis is used as the financial tool for the data analysis.

The financial tools that will be used for data analysis are:

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

### **Ratio Analysis**

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

This study contains following ratios:

- **Long Term Debt to Total Debt**

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

The Long Term Debt to Total Debt is calculated as:

$$\text{Long Term Debt to Total Debt Ratio} = \frac{\text{Long Term Debt}}{\text{Total Debt}} \times 100$$

- **Long-Term Debt to Capital Employed**

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

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

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

- **Debt to Total Assets**

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

$$\text{Debt to Total Asset Ratio} = \frac{\text{Total Debt}}{\text{Total Assets}} \times 100$$

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

- **Debt to Equity Ratio**

The debt-equity ratio measures the long-term components of capital structure. Long-term debt and shareholder's equity are used in financing assets of the companies. So, it reflects the relative claims of creditors and shareholders against the assets of the firm. Debt to

Equity ratio indicates the relative proportions of debt and equity. The relationship between outsiders claim and owners' capital can be shown by debt-equity ratio. It is calculated as:

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

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

- **Interest Coverage Ratio**

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

$$\text{Interest Coverage Ratio} = \frac{\text{Earning Before Interest and Tax}}{\text{Interest}}$$

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

- **Return on Total Assets**

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

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

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

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

- **Return on Shareholders Equity**

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

This ratio is calculated as:

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

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

- **Earning Per Share (EPS) Analysis**

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

$$EPS = \frac{\text{Net Income}}{\text{No. of Shares Outstanding}}$$

- **Dividend Per Share (DPS) Analysis**

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

in fulfilling shareholders expectations, which will also enable o increase the value of an institution.

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

$$DPS = \frac{\text{Total Dividend}}{\text{No. of Ordinary Shares}}$$

### **Leverage Analysis**

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

$$DFL = \frac{\% \text{ Change in EPS}}{\% \text{ Change in EBIT}} \qquad DFL = \frac{EBIT}{EBT}$$

Or

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

### **Capital Structure Analysis**

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

*Market value of firm(V) = Market value of debt (B) + Market value of equity (S)*

$$\text{Cost of overall capitalization rate}(K_o) = \frac{\text{Net Operating Income (EBIT)}}{\text{Total Market Value of the Firm (V)}}$$

$$\text{Cost of equity}(K_e) = \frac{\text{Earning Available To Common Stock Holders (NI)}}{\text{Market Value of Stock (S)}}$$

### Statistical Tools

To meet the objectives of the study statistical tools are equally important. It helps us to analyze the relationship between two or more variables. In this research, the following statistical tools are used.

The statistical tools that will be used for data analysis are:

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



## **Statistical tools used.**

### **Mean**

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

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

Standard deviation is an absolute measure of dispersion. The standard deviation is the square root of mean squared deviation from the arithmetic mean.

### **Correlation Coefficient (r)**

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

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

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

Where,

$N$  = number of observations.

$X$  and  $Y$  are variables.

The decision criteria:

When,

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

$r = 1$ , the variables have perfectly positive correlated.

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

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

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

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

Where,

$r$  = correlation co-efficient

$N$  = number of pairs of observations.

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

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

# CHAPTER 4

## DATA PRESENTATION AND ANALYSIS

This is the most important chapter of the study. In this chapter the data collected will be analyzed and presented mathematically. All the above-mentioned financial and statistical tools will be used to present the data.

The main objective of this study is to evaluate the capital structure of BOKL, HBL and NIBL. To analyze the financial performance in respect to capital structure, various presentation and analysis have been presented in this chapter according to analytical research design mentioned in the third chapter using various financial and statistical tools.

It is already stated that Capital Structure refers to the combination of preference share, equity share capital including reserve and surplus as well as long-term debt. Optimal capital structure refers to that combination of funds, which maximizes the EPS, value of the firm and reduces overall cost of capital. Thus this chapter emphasizes the position of capital structure of BOKL, HBL, and NIBL. The analyses in this chapter are divided into following sections, which are directly and indirectly related to the capital structure.

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

## ***Ratio Analysis***

### Long Term Debt to Total Debt Ratio

The relationship between long term debt and total debt has a decisive impact on the financial structure of the companies. This relationship indicates what percentage of total debt is covered by long-term debt of the firm. Normally firms use short-term and long-term debt. Current liabilities and provisions are also needed during the operation of the firm. Simply dividing long-term debt by the total debt can derive the relationship between the long-term debt and total debt of the firm. The total debt includes all types of borrowed fund, current liabilities and provisions. If the firm uses large amount of short term loans and occur current liabilities and provision in the larger amount, the percentage of long term debt on total debt will be low and vice versa. The higher ratio of long term debt to total debt indicates the higher claim of long term debt holders upon the total debt and the lower ratio indicates the higher portion of short term loans and current liabilities in the total debt of the firm. The amount of short-term loans and current liabilities used depends upon the liquidity of that firm. This relationship of long term debt and total debt is presented in the following table along with the percentage change in that ratio to show the movement of trend individually. In addition the average (standard) ratios are also calculated to compare with each other. But the detailed calculation is shown in the appendix 2.

$$\text{Long Term Debt to Total Debt Ratio} = \frac{\text{Long Term Debt}}{\text{Total Debt}} \times 100$$

**Table No.1**

**Long-Term Debt and Total Debt Position.**

Fiscal years	Long-Term Debt to Total Debt(%)		
	BOKL	HBL	NIBL
2002/03	0.36	1.92	0.90
2003/04	0.00	1.76	0.19
2004/05	0.00	1.74	0.16
2005/06	1.75	1.30	2.83
2006/07	1.47	1.15	3.32
Average	0.72	1.57	1.48

**Source: Appendix 1**

The above calculation shows that the ratio of long-term debt to total debt of BOKL constituted 0.36 % in fiscal year 2002/03. This means the contribution of long-term debt in total debt is 0.36 % and the remaining portion is contributed by the current liabilities. This ratio of BOKL is zero in fiscal year 2003/04 and 2004/05 and then increases to 1.75% and 1.47% in fiscal year 2005/06 and 2006/07. The company has 0.72 % of average long-term debt to total debt ratio.

In the case of HBL, it shows in the fiscal year 2002/03 the ratio is 1.92%, which indicates there is 1.92% contribution of long-term debt in total debt and remaining portion is contributed by current liabilities. In the year 2003/04 also, the ratio is 1.76%, which is decreased to 1.74% in 2004/05, decreased to 1.30 in the year 2005/06 and again decreased to 1.15% in the year 2006/07. The average ratio is 1.57%.

Similarly, in the case of NIBL the ratio in fiscal year 2002/03 is 0.90%, which indicates there is 0.90% contribution of long-term debt in total debt and remaining portion is contributed by current liabilities. The ratio decreases to 0.19% in the following year 2003/04 again decreases to 0.16% in the year 2004/05. After that the increasing trend starts where the ratio increases to 2.83% in the year 2005/06 and again to 3.32% in the year 2006/07. The average ratio is found to be 1.48%.

### Long-Term Debt to Capital Employed Ratio

The optimal capital structure has important relationship with the long-term debt to capital employed ratio. This relationship suggests the portion of long term debt and capital employed used in the capital structure of the firm. This ratio highlights the need of long – term debt in the capital employed by the firm. Long-term debt includes the debt, which matures in more than one accounting period whereas capital employed includes long term debt and shareholders equity of the firm. The relationship of long-term debt and capital employed can be analyzed by establishing the ratio between them. This ratio is called the long-term debt to capital debt ratio. Larger the ratio, larger the proportion of long-term debt in the capital employed and vice versa. This ratio can be calculated by dividing the long-term debt with capital employed by the firm. This ratio is also known as debt to permanent capital ratio, where permanent capital means total assets minus current liabilities. The long-term debt to permanent capital ratio is presented in the following table:

$$\text{Long – Term Debt to Capital Employed Ratio} = \frac{\text{Long Term Debt}}{\text{Capital Employed}}$$

**Table No. 2**

### **Comparative Long-Term Debt to Capital Employed Ratio**

<b>Fiscal years</b>	<b>Long-Term Debt to Capital Employed (times)</b>		
	<b>BOKL</b>	<b>HBL</b>	<b>NIBL</b>
2002/03	0.04	0.31	0.07
2003/04	0.00	0.27	0.02
2004/05	0.00	0.24	0.03
2005/06	0.19	0.17	0.28
2006/07	0.17	0.14	0.30
Average	0.08	0.23	0.14

**Source: Appendix 2**

The above table shows that the long-term debt to capital employed ratios of BOK in the FY 2002/03 is 0.04 and from in the year 2003/04 and 2004/05 the company has not used long-term debt. While in the year 2005/06 and 2006/07, the ratios are 0.19 & 0.17 respectively. The average ratio is 0.08%.

Similarly HBL has decreasing trend of long-term debt to capital employed ratio. In the FY 2002/03 the ratio is 0.31times that means the contribution of long-term debt in total capital employed is 31% and owner of the companies contributed remaining 69%. In the following year 2003/04, the ratio decreases to 0.27 times. In the FY 2004/05, 2005/06 and 2006/07 the ratios are 0.24, 0.17, and 0.14 respectively. The average of five years' data shows a ratio of 0.23 times.

At the same time in case of NIBL the long-term debt to capital employed ratios in the FY 2002/03, 2003/04, 2004/05, 2005/06 and 2006/07 are 0.07, 0.02, 0.03, 0.28 and 0.30 times respectively. And the average ratio is 0.14 times.

#### Debt to Total Assets Ratio

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

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

$$\text{Debt Total Assets Ratio} = \frac{\text{Total Debt}}{\text{Total Assets}} \times 100$$

**Table No. 3**

**Comparative Debt – Asset Ratios**

Fiscal years	Debt to Asset (%)		
	BOKL	HBL	NIBL
2002/03	0.00	0.02	0.01
2003/04	0.00	0.02	0.00
2004/05	0.00	0.02	0.00
2005/06	0.02	0.01	0.03
2006/07	0.01	0.01	0.03
Average	0.01	0.01	0.01

**Source: Appendix 3**

All the sample banks have negligible long-term debt in comparison to total assets. Hence, the debt ratio or debt to total assets ratio of BOK, HBL, and NIB is negligible. Therefore the debt ratio is insignificant.

**Debt Equity Ratio**

Debt equity ratio is used to show the relationship between borrowed funds and owners' capital. It reflects the relative claims of creditors and shareholders against the assets of the firm. It is an important tool for the financial analysis to appraise the financial structure of a firm. The ratio reflects the relative contribution of owners and creditors capital of business in its financing. In other words, this ratio exhibits the relative proportions of capital contributed by owners and creditors. Debt equity ratio can be calculated in the basis of shareholders' equity and long-term debt. Shareholders' equity includes reserve and accumulated profit, preference share and equity share capital. Where long-term debt includes total debt minus short-term debt or current liabilities, here debt equity ratio is also computed by simply dividing long-term debt of the firm by shareholders' equity. The high D/E ratio shows the large share of financing in the capital by the creditors then the owners or it also reflects that the creditors claim is higher against the assets of firm and vice-versa. D/E ratios of concerned companies are shown in the following table that is referred from the appendix 1.



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

**Table No. 4**  
**Comparative Debt – Equity Ratios**

Fiscal years	Debt to Equity		
	BOKL	HBL	NIBL
2002/03	0.05	0.98	0.24
2003/04	0.00	0.62	0.06
2004/05	0.00	0.76	0.07
2005/06	0.43	0.44	0.95
2006/07	0.33	0.36	1.02
Average	0.16	0.63	0.47

**Source: Appendix 4**

The debt equity ratio and average ratio has been calculated in the above table. Five years data have been presented here.

The table shows that D/E ratios of BOKL are 0.05, 0.00, and 0.00 in fiscal years 2002/03, 2003/04, and 2004/05 respectively. Then afterwards the D/E ratios are 0.43 & 0.33 in the years, 2005/06 and 2006/07. The average D/E ratio of BOKL is 0.16.

Calculated value of HBL shows that the D/E ratios of HBL have fluctuating trend. In the fiscal year 2002/03, D/E ratio is 0.98, which decreases to 0.62 in the FY 2003/04. The ratio increases to 0.76 in the following year 2004/05 but then after the ratio decreases to 0.44 and 0.36 in the years 2005/06 and 2006/07. The average D/E ratio of HBL is 0.63.

Similarly, NIBL also has a fluctuating trend. In the FY 2002/03, the ratio is 0.24, which in the following year 2003/04 decreases to 0.06. In the third year, it rises to 0.07 but then

afterwards it increases drastically to 0.95 and 1.02 in the years 2005/06 and 2006/07 respectively. The average ratio however is 0.47.

### Interest Coverage Ratio

The interest coverage ratio is useful tool to measure long-term debt serving capacity of the firm. It is also called interest earned ratio. Interest is fixed charges of the companies, which is charged in long-term and short-term loans. Generally, Interest coverage ratio measures the debt serving capacity of a firm and it is concerned with long-term loans. It shows how many times the interest charges are covered by EBIT out of which they will be paid. This ratio uses the concept of net profit before interest because interest is tax deductible or tax is calculated after paying interest on loan. This ratio examines the interest paying capacity of the firm by how many times the interest charges are covered by EBIT.

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

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

**Table No.5**

**Comparative Interest Coverage Ratio**

<b>Fiscal years</b>	<b>Interest Coverage Ratio (times)</b>		
	<b>BOKL</b>	<b>HBL</b>	<b>NIBL</b>
2002/03	1.09	1.60	1.60
2003/04	1.44	1.65	1.90
2004/05	1.64	1.86	1.71
2005/06	1.98	2.04	2.03
2006/07	2.13	1.93	2.06
Average	1.66	1.82	1.86

**Source: Appendix 5**

In the above table, the average ratio of BOKL is 1.66, which implies the number of times the interest covered by its EBIT. The interest coverage ratio of BOKL shows a fluctuating trend. The interest coverage of BOKL in FY 2002/03 is 1.09 times, which increases to 1.44 times in 2003/04 and 1.64 in 2004/05. Then further increases in the year 2005/06 to the ratio of 1.98 times and 2.13 times in 2006/07.

In case of HBL, the interest coverage ratio is 1.60, 1.65, 1.86, 2.04, and 1.93 in the FY 2002/03, 2003/04, 2004/05, 2005/06, and 2006/07 respectively.

Similarly, in the case of NIBL the ratios are 1.60, 1.90, 1.71, 2.03, and 2.06 in the F/y 2002/03, 2003/04, 2004/05, 2005/06 and 2006/07 respectively and the average ratio is 1.86.

**Return on Total Assets**

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

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

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

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

**Table No. 6**

**Position of comparative Return on Total Assets**

Fiscal years	Return on Total Assets		
	BOKL	HBL	NIBL
2002/03	0.00	0.01	0.01
2003/04	0.01	0.01	0.01
2004/05	0.01	0.01	0.01
2005/06	0.02	0.02	0.02
2006/07	0.02	0.01	0.02
Average	0.01	0.01	0.01

**Source: Appendix 6**

The above table shows the comparative position of return on total assets of the three commercial banks. From the table, the ROA of BOKL in the year's 2002/03, 2003/04, 2004/05, 2005/06 and 2006/07 are 0.00, 0.01, 0.01, 0.02 and 0.02 respectively. The average ratio is 0.01.

Similarly, The ROA of HBL in the year's 2002/03, 2003/04, 2004/05, 2005/06 and 2006/07 are 0.01, 0.01, 0.01, 0.02 and 0.01 respectively and the average return is 0.01.

Again, from the above table, the ROA of NIBL are 0.01, 0.01,0.01, 0.02 and 0.02 in the years 2002/03, 2003/04, 2004/05, 2005/06 and 2006/07 respectively. The average return is 0.01.

#### Return on Shareholders' Equity

Shareholders' fund represents that part of long-term source of funds, which is collected by issuing equity shares and preference shares. Shareholders are actually the owners of the company. Shareholders have ultimate claim in the return of the company. To measure the return earned by shareholders, return on shareholders equity (ROSHE) is used or this ratio is calculated to find out the profitability on the owners' capital or investment.

If the company's earning is good, shareholders' earning is greater than outside investors because they are ultimate owners and they are bearing high risk as well. But outside investors get return before the owners that is fixed. Shareholders get the return after paying the fixed interest charge to the creditors and tax to the government. Earning after tax (EAT) is the profit of the shareholders. Therefore this ratio is calculated on the basis of EAT. In this study, the sampled companies have not employed the preference share thus it includes only return on shareholders' equity.

The high ROSHE represents the high profitability of the firm and vice versa. So, high ROSHE is desirable from the point of view of the owners of the firm. This ratio can be calculated simply by dividing earning after tax by shareholders' equity (SHE), which is presented in the following table.

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

**Table No. 7**

**Position of comparative ROSHE**

Fiscal years	Return on Shareholder's Equity		
	BOKL	HBL	NIBL
2002/03	0.02	0.27	0.11
2003/04	0.14	0.20	0.18
2004/05	0.20	0.20	0.21
2005/06	0.24	0.26	0.25
2006/07	0.27	0.23	0.27
Average	0.17	0.23	0.20

**Source: Appendix 7**

Above table exhibits Return on Shareholder's Equity of sampled companies. In case of BOKL, in the fiscal year 2002/03, the ratio is 2.00% that implies that one rupee investment by shareholders' equity earned 2 paisa in one-year. In the fiscal year 2003/04 it is increased to 14.00%. It has further increased to 20% in the fiscal year 2004/05. Similarly in the fiscal year 2005/06 the ratio is 24%, and in the year 2006/07 the ratio is 27%. The average ratio is 17.00%.

Similarly in the case of HBL, in the fiscal year 2002/03 the ROSHE is 27.00%. In the following two years it is 20.00%. After that ROSHE of HBL are increasing gradually. In the fiscal years 2005/06 and 2006/07, the ratios are 26.00%, and 23.00% respectively. Average ratio is 23.00%.

Similarly in the case of NIBL, in the fiscal year 2002/03, the ratio is 11.00%, which shows that the company's owner can earn 11 paisa investing rupee one. But it has increased gradually and the ratios are 18.00%, 21.00%, 25.00% and 27.00% in the fiscal years 2003/04, 2004/05, 2005/06 and 2006/07 respectively. The average ratio is 20.00%.

## Earning per share

The profitability of bank from the point of view of the ordinary shareholders is earning per share. The ratio explains net income for each unit of share. Earning per share of an organization gives the strength of the share in the market. It shows how much theoretically belongs to the ordinary shareholders. The EPS is calculated as below:

$$\text{Earning Per Share} = \frac{\text{Net Income}}{\text{No. of Shares Outstanding}}$$

**Table No. 8**

### Position of comparative EPS

Fiscal years	Earning Per Share		
	BOKL	HBL	NIBL
2002/03	2.00	60.26	33.59
2003/04	17.72	49.45	39.56
2004/05	27.50	49.05	51.70
2005/06	43.67	56.42	59.35
2006/07	43.28	48.53	62.57
Average	26.83	52.74	49.35

**Source: Appendix 8**

The earnings per share of BOKL are 2.00, 17.72, 27.50, 43.67 and 43.28 in the years 2002/03, 2003/04, 2004/05, 2005/06 and 2006/07 respectively. The average EPS is 26.83. The overall trend is very fluctuating. The highest EPS is 43.67 in the year 2002/03.

Similarly, the earnings per share of HBL in the years 2002/03, 2003/04, 2004/05, 2005/06 and 2006/07 are 60.26, 49.45, 49.05, 56.42 and 48.53 respectively. And the average EPS is 52.74. Here, the overall trend is decreasing. The EPS decreases from 60.26 in the year 2002/03 to 48.53 in the year 2006/07.

And, the earnings per share of NIBL in the years 2002/03, 2003/04, 2004/05, 2005/06 and 2006/07 are 33.59, 39.56, 51.70, 59.35 and 62.57 respectively. And the average EPS is 49.35. Here, the overall trend is increasing.

### Dividend Per Share (DPS) Analysis

Dividend per share is evaluated to know the share of dividend that the shareholders receive in relation to the paid up value of the share. Dividend per share is the earning distributed to ordinary shareholders divided by the number of ordinary shares outstanding, i.e.,

$$\text{Dividend Per Share} = \frac{\text{Total Dividend}}{\text{No. of Ordinary Shares}}$$

**Table No. 9**

#### **Position of comparative DPS (in Rs.)**

<b>Fiscal years</b>	<b>Dividend Per Share</b>		
	<b>BOKL</b>	<b>HBL</b>	<b>NIBL</b>
2002/03	10.00	25.00	0.00
2003/04	5.00.	1.31	20.00
2004/05	10.00	0.00	15.00
2005/06	48.00	33.33	35.46
2006/07	20.00	32.00	30.00
Average	18.60	18.33	20.09

**Source: Appendix 9**

The dividends per share of BOKL are Rs. 10.00, Rs.5.00, Rs.10.00, Rs.48.00 and Rs.20.00 in the years 2002/03, 2003/04, 2004/05, 2005/06 and 2006/07. The average DPS is Rs.18.60. The highest DPS paid is Rs.48.00 in the year 2006.

Similarly, HBL shows a DPS of Rs.25.00, Rs.1.31, Rs. 0.00, Rs. 33.33 and 32.00 in the years 2002/03, 2003/04, 2004/05, 2005/06 and 2006/07 respectively. The average DPS is Rs.18.33. It paid a highest dividend of Rs.33.00 in the year 2006 and no dividend in the year 2005.



Again, NIBL shows a DPS of Rs.0.00, Rs.20.00, Rs.15.00, Rs. 35.46 and Rs. 30.00 in the years 2000, 2001, 2002, 2003 and 2004 respectively. The average DPS is Rs.20.00. It paid a highest dividend of Rs.35.46 in the year 2006 and the lowest dividend Rs.15.00 in the year 2005. In the years 2003, it paid no dividend.

The average dividend per share of BOK is Rs.11.55. Similarly; HBL shows an average DPS of Rs. 20.76. Again, NIB shows an average DPS of Rs. 12.00. Among the three, HBL has paid the highest dividend.

## ***Capital Structure***

### Net Income (NI) Approach

Net Income (NI) approach is known as dependent hypothesis of capital structure. The essence of this approach is that the firm can reduce its cost of capital by using debt and total valuation of the firm through the reduction in the cost of capital leading to an increase in the cost of capital thus leading to an increase in the degree of leverage. This theory assumes that the cost of debt and cost of equity remain constant as change in the firm's capital structure. In other words, the firm can increase its value or lower the overall cost of capital by increasing the proportion of debt in the capital structure. It gives attention on overall capitalization rate. According to this theory, optimum capital structure is that, where the total value of the company is highest and the overall capitalization rate is lowest. The overall capitalization rate can be calculated simply by dividing EBIT by the value of the company. Calculated rates are presented below that is referred from appendix 10.

**Table No. 10**

**Comparative Position of Overall Capitalization Rate**

<b>Fiscal Years</b>	<b>BOKL</b>		<b>HBL</b>		<b>NIBL</b>	
	<b>Cost of Capital (Ko)</b>	<b>Value of Firm (in million Rs)</b>	<b>Cost of capital (Ko)</b>	<b>Value of Firm (in million Rs)</b>	<b>Cost of capital (Ko)</b>	<b>Value of Firm (in million Rs)</b>
2002/03	26.02%	1,198.78	22.00%	4,281.07	15.66%	1,332.07
2003/04	43.45%	917.89	23.00%	3,978.60	15.20%	2,363.81
2004/05	34.44%	1,367.56	19.00%	4,911.48	19.95%	2,795.23
2005/06	15.00%	4140.43	14.00%	9278.91	12.00%	8005.25
2006/07	9.00%	8493.17	8.00%	17995.07	10.00%	14668.98
Average	25.00%	3223.57	17.00%	8089.03	15.06%	5,833.07

**Source: Appendix 10**

Above computed overall capitalization rate of BOK shows that the costs are 26.02%, 43.45%, 34.44%, 15.00% and 9.00% in the fiscal years 2002/03, 2003/04, 2004/05, 2005/06 and 2006/07 when the values of the firm are Rs. 1,198.78m, Rs. 917.89, Rs. 1,367.56, Rs 4140.43 and 8493.17 million respectively. The average cost is 25.00% at an average value of Rs. 3223.57 million.

Similarly, in the case of HBL, the costs are 22.00%, 23.00%, 19.00%, 14.00% and 8.00% in the fiscal years 2002/03, 2003/04, 2004/05, 2005/06 and 2006/07, respectively. And the values of the firm are Rs. 4,281.07, Rs. 3,978.60, Rs. 4,911.48, Rs 9,278.91 and Rs. 17,995.07, million respectively. The average cost is 17.00% at an average value of Rs. 8,089.03 million.

In the case of NIB, the costs are 15.66%, 15.20%, 19.95%, 12.00%, and 10.00%, in the fiscal years 2002/03, 2003/04, 2004/05, 2005/06 and 2006/07, respectively. And the values of the firm are Rs. 1,332.07, Rs. 2,363.81, Rs. 2,795.23, Rs. 8,005.25 and, Rs.

14,668.98 million respectively. The average cost is 15.06% at an average value of Rs. 5,833.07 million.

#### Net Operating Income (NOI) Approach

It is an independent hypothesis of capital structure decision of the firm and which is irrelevant to the value of firm and overall cost of capital. Change in leverage will not lead to any change in the total value of the firm and market price of share, as the overall cost of capital is independent of the degree of leverage. The increase in leverage leads to an increase in financial risk of the ordinary shareholders. To minimize the financial risk, the shareholders want a higher return on their investment. Increases in  $K_o$  are exactly offset by using cheaper debt fund keeping  $K_o$  constant. So, equity capitalization rate 'Ke' is calculated here by simply dividing EBT by the market value of common equity, which is presented in the following table. Detail calculation of 'Ke' is presented in the appendix.

**Table No. 11**

#### **Comparative Position Of Effect of Debt on Equity Capitalization Rate**

Fiscal years	BOK		HBL		NIB	
	Cost of Equity (Ke)	Long-Term Debt (in million Rs)	Cost of Equity (Ke)	Long-Term Debt (in million Rs)	Cost of Equity (Ke)	Long-Term Debt (in million Rs)
2002/03	2.2%	21.29	9.00%	381.07	5.78%	40.22
2003/04	13.3%	0.00	10.0%	392.16	6.13%	16.25
2004/05	13.5%	0.00	9.00%	406.98	9.80%	19.50
2005/06	8.00%	200	8.00%	360.00	6.79%	563.87
2006/07	5.00%	200	4.00%	360.00	5.22%	813.60
Average	8.00%	84.26	8.00%	380.04	6.74%	290.69

**Source: Appendix 11**

The equity capitalization rates of BOK in the fiscal years 2002/03, 2003/04, 2004/05, 2005/06 and 2006/07 are 2.2%, 13.3%, 13.5%, 8% and 5%, respectively. And their respective long-term debts are Rs. 21.29, Rs. 0.00, Rs. 0.00, Rs. 200 and Rs.200 million respectively. The average cost is 8.00% at an average long-term debt of Rs. 84.26 million.

The equity capitalization rates of HBL are 9.00%, 10.00%, 9.00%, 8.00%, and 4.00% in the fiscal years 2002/03, 2003/04, 2004/05, 2005/06 and 2006/07 respectively. And the long-term debts are Rs. 381.07, Rs. 392.16, Rs. 406.98, Rs. 360.00, Rs. 360.00, million respectively. The average cost is 8.00% at an average long-term debt of Rs. 380.04 million.

Similarly, the equity capitalization rates of NIB are 5.78%, 6.13%, 9.80%, 6.79% and 5.22%, in the fiscal years 2002/03, 2003/04, 2004/05, 2005/06 and 2006/07 respectively. And the long-term debts are Rs. 40.22, Rs. 16.25, Rs. 19.50, Rs. 563.87 and Rs. 813.60 million respectively. The average cost is 6.74% at an average long-term debt of Rs. 290.69 million.

### ***Leverage Analysis***

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

Generally, Leverage refers to the use of special force of power to have more than normal results from a particular action. Similarly in financial term it is used to describe about utilization of funds for which the firm has to pay fixed cost and to have more return than

normal having more risk as well. Leverage may be used to boost owners' returns, but it is used at the risk of increasing losses, if the firm's economic fortune declines. Thus gain and losses are magnified by leverage, and the higher the leverage employed by a firm, the greater will be the volatility of its returns. There are three types of leverages: operating leverage, financial leverage and combine leverage. Operating leverage is the function of fixed cost, contribution margin and sales volume. Financial leverage is the relationship between EBIT and EBT and combined leverage is the combined effect of operating leverage and financial leverage. The operating leverage indicates the impact of changes in sales on operating income and financial leverage exist when the capital structure of the firm comprises debt capital. Financial leverage is related to the capital structure of the firm. So, financial leverage is the relevant issue of this study, which is explained in this section.

#### Analysis of Financial Leverage

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

Two methods: either dividing percentage change into EPS by percentage change into EBIT or dividing EBT by EBIT can calculate degree of financial leverage. In this analysis of financial leverage second method is chosen. High the financial leverage, high will be the financial risk and also high will be the shareholders' return. The degree of financial leverage of sampled companies is presented in the following table.

$$DFL = \frac{\% \text{ Change in EPS}}{\% \text{ Change in EBIT}}$$

Or

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

**Table No 12**

**Comparative Degree of Financial Leverage**

<b>Fiscal years</b>	<b>Degree of Financial Leverage</b>		
	<b>BOKL</b>	<b>HBL</b>	<b>NIBL</b>
2002/03	11.61	2.66	2.67
2003/04	3.27	2.54	2.11
2004/05	2.55	2.17	2.41
2005/06	2.02	1.96	1.97
2006/07	1.89	2.07	1.95
Average	4.27	2.28	2.22

**Source: Appendix 12**

Above calculated DFL of BOKL indicates fluctuation trend. In the fiscal year 2002/03 the DFL is 11.61 times. In the second year i.e. 2003/04 the DFL is 3.27 times. In the fiscal years 2004/05, 2005/06, 2006/07 the DFL is 2.55, 2.02, and 1.89 times respectively.

The trend of HBL is decreasing trend. The DFL of HBL in the fiscal year 2002/03, 2003/04, 2004/05, 2005/06 and 2006/07 is 2.66, 2.54, 2.17, 1.96 and 2.07 respectively. The average DFL of HBL is 2.28 times.

Similarly, the trend of NIBL is in fluctuating trend. The DFL of HBL in the fiscal year 2002/03, 2003/04, 2004/05, 2005/06 and 2006/07 are 2.67, 2.11, 2.41, 1.97 and 1.95 respectively. The average DFL of HBL is 2.22 times.

***Correlation Analysis***

Correlation analysis enables us to have an idea about the degree and direction of the relationship between the two or more variables. The correlation is a statistical tool which studies the relationship between two or more variables and correlation analysis involves various methods and techniques used for studying and measuring the extent of the relationship between the two or more variables. It is denoted by 'r'. However, it fails to

reflect upon the cause and effect relationship between the variables. Although there are three types of correlation i.e. simple, partial and multiple but here we focus on simple correlation based on ‘Pearson’s coefficient of correlation’. In the following section correlation between different variables are calculated and presented of the sampled companies.

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

#### Total Debt and Shareholders Equity

The relationship between total debt (TD) and shareholders equity (SHE) have been shown in the following table below. The total debt includes all types of long-term borrowed funds, current liabilities and provisions. Whereas shareholders’ equity includes share capital reserve and surplus. This correlation indicates whether there is positive or negative correlation between TD and SHE and their respective probable error is also presented. P.E interprets the value of correlation co-efficient. It helps to determine applicability for the measurement of reliability of the computed value of the correlation coefficient (r). Detail calculations are presented in the appendix 13.

**Table No.13**

#### **Correlation Coefficient Between TD and SHE With Probable Error**

<b>BOKL</b>		<b>HBL</b>		<b>NIBL</b>	
Correlation coefficient (r)	Probable error 6(P.E.)	Correlation coefficient (r)	Probable error 6(P.E.)	Correlation coefficient (r)	Probable error 6(P.E.)
0.99	0.0362	0.99	0.002	0.97	0.104

**Source: Appendix13**

Karl Pearson's correlation coefficient between total debt and shareholders equity of BOKL is 0.99. There is positive correlation between TD and SHE. The probable error 6(PE) of BOKL is 0.0362. PE is less than correlation coefficient (r).

Similarly, the correlation coefficient of HBL is 0.99, which is closer to 1 and positive. The probable error is 0.002, which is less than r.

In the case of NIBL the correlation coefficient is 0.97, which is closer to one and positive so it is also good correlated. The PE of respected correlation is 0.104, i.e. value of r is greater than PE.

#### Long-Term Debt and Earning Per Share

Long term debt is the source of long-term financing or long-term funds. Company should pay interest for this debt capital. Where as earning per share (EPS) is earning of a share of a firm form one-year business. EPS has positive relationship with company's earning. In this section the relationship between these two variables has been shown using Karl Pearson's correlation coefficient method. It tries to analyze that the increment in LTD leads to increment in the EPS or not. The calculated correlation coefficient and their respective probable error have been shown in the following table referred form appendix.

**Table No.14**

**Correlation Coefficient Between Long-Term Debt (LTD) and Earning Per Share (EPS) and Their Respective Probable Error**

<b>BOKL</b>		<b>HBL</b>		<b>NIBL</b>	
Correlation coefficient (r)	Probable error (P.E.)	Correlation coefficient (r)	Probable error (P.E.)	Correlation coefficient (r)	Probable error (P.E.)
0.8161	0.6044	-0.28	0.3069	-0.8366	0.0543

**Source: Appendix 14**



In the basis of above table, correlation coefficient between Long-term debt (LTD) and earning per share (EPS) of BOKL is 0.8161, which implies that there is positive correlation between LTD and EPS. The probable error (PE) of BOKL is 0.6044. PE is less than correlation coefficient (r).

In the case of HBL, the correlation coefficient is  $-0.28$ , which implies that there is negative correlation between LTD and EPS. The probable error (PE) of HBL is 0.3069 PE is greater than correlation coefficient (r).

Similarly in the case of NIBL the correlation coefficient is  $-0.8366$ , which implies that there is negative correlation between LTD and EPS. The probable error (PE) of NIBL is 0.0543, i.e. PE is less than correlation coefficient (r).

#### EBIT and Interest

Long-term debt holders get the interest as return and EBIT is operating profit of the company. Here correlation coefficient of interest and EBIT has presented of concerned companies to analyze whether there is positive or negative correlation between interests and operating profit, those are calculated on the basis of Karl Pearson's correlation coefficient. Following table shows the relationship between these variables of sampled companies. And to check the significance of these calculated correlations, PE is also presented, which is referred from appendix:

**Table No. 15**

**Correlation Coefficient Between EBIT and Interest, and Their Respective Probable Error**

<b>BOKL</b>		<b>HBL</b>		<b>NIBL</b>	
Correlation coefficient (r)	Probable error (P.E.)	Correlation coefficient (r)	Probable error (P.E.)	Correlation coefficient (r)	Probable error (P.E.)
0.9156	0.2926	0.9367	0.2219	0.9970	0.0011

**Source: Appendix 15**

In the above table, correlation coefficient of BOKL is found to be 0.9156, i.e. there is positive correlation between interest and EBIT. PE of respected correlation is 0.2926, which is less than correlation coefficient.

Similarly, in case of HBL, the correlation coefficient between interest and operating profit is 0.9367. It is positive and closer to 1. The PE of respected correlation is 0.2219, which is less than correlation coefficient.

In the case of NIBL, the correlation coefficient between interest and operating profit is 0.9970. It is positive and almost equal to 1. The PE of respected correlation is negligible.

#### EBIT and DPS

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

**Table No. 16**

#### **Correlation Coefficient Between EBIT and DPS and Their Respective Probable Error**

<b>BOK</b>		<b>HBL</b>		<b>NIB</b>	
Correlation coefficient (r)	Probable error 6(P.E.)	Correlation coefficient (r)	Probable error 6(P.E.)	Correlation coefficient (r)	Probable error 6(P.E.)
<b>0.5954</b>	<b>1.1683</b>	<b>0.7841</b>	<b>0.6971</b>	<b>0.8165</b>	<b>0.06037</b>

**Source: Appendix 16**

In the above table, correlation coefficient of BOK is found to be 0.5954, i.e. there is positive correlation between EBIT and DPS. 6PE of respected correlation is 1.1683, which is greater than correlation coefficient.

Similarly, in case of HBL, the correlation coefficient between operating profit and dividend is 0.7841. It is positive. The 6PE of respected correlation is 0.6971, which is less than the correlation coefficient. In the case of NIB, the correlation coefficient between operating profit and dividend is 0.8165. It is positive but the 6PE of respected correlation is less than r.

### ***Major Findings of the Study***

The percentage of total debt of the firm covered by long-term debt is indicated by Long-term debt to Total Debt ratio. BOK has 0.72 % of average long-term debt to total debt ratio. Similarly HBL and NIB have average ratio of 1.57% and 1.48% respectively. In all the three cases, the total debt is contributed by current liabilities to a large extent. The analysis of all three companies reveals the fluctuating trend of long-term debt to total debt ratio. Among the three, BOK has used minimum long-term debt in comparison to HBL and NIBL. In the fiscal year 2003/04 and 2004/05, BOK has stopped using the long-term debt of financing.

The analysis shows that among the three banks BOK, HBL, and NIBL, BOK has least and HBL has the highest Long-term debt to capital employed ratio of 0.08 and 0.23 respectively. This indicates that HBL is using more Long-Term debt financing as its capital. Similarly, NIBL has the average of 0.14, which is also greater than BOK. It can be said that long-term debt to capital employed ratio of all three companies are inappropriate.

The long-term debt for financing used by all sample companies is very minimum or negligible. Hence, the debt to total assets ratio of BOK, HBL, and NIB is negligible.

The Debt-Equity ratio shows the claim of creditors on the total asset of the company. The trend analysis shows fluctuating trend in all sample companies. The average Debt Equity ratio of BOK is 0.16, which shows that the creditors have 16% claim on the assets of

BOK. It also indicates that the company has used moderate amount of debt as financing and has to pay interest on debt. HBL has the highest debt-equity ratio among the three with the average ratio of 0.63. It implies that the claim of creditors is 63%, which is higher than that of owners of the company. Similarly, the average ratio of NIBL is 0.47, which shows 47% claim of creditors. The ratio shows that HBL has used almost equal amount of debt and equity for financing where as in case of BOK and NIBL, the contribution of debt is low in comparison to the equity.

The analysis shows that all the sample companies BOK, HBL, and NIBL are able to pay the interest amount. Among the three, NIB has the highest interest coverage ratio of 1.86 and BOK has the lowest ratio of 1.66, which shows that the firm is able to pay the interest amount. In case of HBL, the trend is increasing with the average of 1.82, which is a good sign.

In comparison, NIBL seems to have the highest average return on asset of 1.41. The average of BOK and HBL are 1.21 and 1.23 respectively. The overall return on asset of the all three commercial banks is increasing in trend.

The Return on Shareholder's Equity of BOK and NIBL is fluctuating and HBL is fluctuating over the period of five years. The average of return of NIB is 20.32 which indicates that the shareholders earned 20.32 paisa investing rupee one. By analyzing the average return, we can conclude that return earned by the shareholders' equity of BOK is least ie 17.25% and the return of HBL is highest among three companies i.e. 23.20%.

The earning per share explains net income for each unit of share. It shows the market position of the firm. The average earning per share of BOK is Rs. 26.83. The average earning per share of HBL is Rs. 52.74. Similarly, the average earnings per share of NIB is Rs. 49.35. Among the three, HBL has the highest earning per share.

Dividend per share is the earning distributed to ordinary shareholders. The analysis shows among the three banks NIBL has paid the highest average dividend of Rs 20.09

and HBL has paid the least of Rs. 18.33 which is less than the dividend paid by BOK of Rs. 18.60.

Under the NI Approach, the interest rate and the cost of equity are dependent of the capital structure. With the increased use of leverage, overall cost of capital declines and the total value of firm rise. From the calculations, NIBL has the optimum capital structure because it has the least cost of capital and the higher value of the firm.

Net Operating Income (NOI) approach is an independent hypothesis of capital structure. Any changes in leverage will not lead to any change in the total value of the firm and market price of share. From the position of average cost of equity, it is found that NIBL has an average cost of equity of 6.74% with an average long-term debt of Rs. 290.688 m, which in comparison to BOK and HBL is lesser where, BOK and HBL have average cost of equity of 8.27% and 7.99% at long-term debts of Rs, 84.258 m and Rs. 380.04 m respectively. So, we can say that NIBL has the optimum capital structure compared to the other two.

The financial leverage analysis helps to evaluate the financial risk of the firm. The average degree of financial leverage of BOK, HBL, and NIBL are 4.27, 2.28 and 2.22 respectively, which concludes the BOK is bearing the highest risk, and NIBL is bearing the least financial risk among the three.

BOK has positive correlation between TD and SHE of 0.99 that is they deviate in the same direction. Likewise, the probable error is 0.0362, less than correlation coefficient, i.e., relationship between TD and SHE is significant. In case of HBL the correlation coefficient is 0.9957, closer to 1 and positive. The 6(P.E.) of HBL is 0.002 which shows that the value of r is significant. Similarly, in the case of NIB the correlation coefficient is 0.9709. The 6(P.E.) of respective correlation is 0.0104 which indicates that the value of r is significant.

Correlation coefficient and PE ratio between long-term debt and earning per share of BOK, HBL and NIBL are 0.8161, -0.278 and 0.8366. This shows that there is negative correlation and insignificant relationship in case of HBL as PE is greater than correlation co-efficient. In other two cases the positive relationship.

The correlation coefficient between EBIT and interest of all the three banks are positive and significant. In case of BOK, the  $r = 0.9156$  and P.E. is 0.2926. In the case of HBL, the value  $r$  is 0.9367 and that of P.E. is 0.2219. Similarly, in case of NIBL, the P.E. is negligible and correlation is almost 1, which shows it is significant.

The correlation coefficient between EBIT and DPS of BOK is 0.5954 and 6PE is 1.1683 indicating positive correlation. Similarly, In case of HBL and NIBL the correlation is positive and higher than probable error indicating significant correlation.

# CHAPTER 5

## SUMMARY, CONCLUSION AND RECOMMENDATION

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

### *Summary*

In this study, to analyze about capital structure, three commercial banks have been chosen. These banks are Bank of Kathmandu Ltd., Himalayan Bank Ltd, and Nepal Investment Bank Ltd. All these banks are listed in NEPSE. To make the study more reliable, the whole study has been divided into five chapters. The summaries of each chapter are presented following.

First chapter: First chapter starts with historical background of the study. In this chapter an introduction to banking industry in Nepal, introduction of the banks selected for the study, description of the capital structure is presented briefly. This study endeavors to evaluate capital structure of commercial banks with reference to Bank of Kathmandu Ltd., Himalayan Bank Ltd, and Nepal Investment Bank Ltd. The main questions presented as the 'focus of the study' are what are the condition of capital structure of the commercial banks of Nepal? Whether or not they are using an appropriate financial mix? If not, what may be the suggested to improve or to make appropriate capital structure? Does Capital Structure help to maximize the value of the firm in the Context of Nepalese firms? The 'statement of the problems' deals with the effect of the capital structure on the growth of the firm, the extent to which the capital structure policy is followed by the commercial banks, and the main problems faced by the commercial banks in developing and implementing the capital structure.

The main objectives of the study presented are to evaluate the role of capital structure on the growth of the commercial banks in Nepal, to analyze the effectiveness and efficiency of capital structure of the commercial banks of Nepal and to analyze the relationship of capital structure with variables such as earning per share, dividend per share, and net worth.

Finally, 'significance of the study' and 'limitations of the study' are also presented in the first chapter.

Second chapter: In this chapter various books, research studies and articles concerned with the capital structure have been reviewed and presented as the review of literature to make the concept of capital structure more clear. Capital structure theories such as NI approach; NOI approach, MM model, and other theoretical approaches to establish appropriate capital structure are described in this chapter. Review of different management journals, articles as well as related Nepalese studies have been presented as well.

Third chapter: In this chapter the steps to adopt realistic study needed for the researchers have been presented. The methodology, researcher can use to get appropriate guidelines and knowledge about the various sequential steps to adopt a systematic analysis has been explained in this chapter. Most of data used in this study are secondary in nature that is annual reports provided by concerned companies. Five years data are taken as sample years and are analyzed by using financial and statistical tools such as ratio analysis, leverage analysis, capital structure analysis, correlation analysis, probable error etc. Methods, which the study is going to use, are exhibited in this chapter.

Fourth chapter: The data mentioned in the third chapter are presented and analyzed in this chapter using methods mentioned in the chapter third above such as ratios, leverage analysis, correlations, and probable errors and capital structure analysis. Detail



calculations presented in this chapter are shown as appendix, which is presented after fifth chapter.

Fifth chapter: In this chapter summary of the study are presented in brief to understand the whole gist about of the study instantly after which conclusion of the study with recommendation are presented.

## ***Conclusion***

In this study, comparison among concerned banks has been done taking data of these banks. To evaluate the capital structure, different types of tools and technique are used. The following conclusion can be drawn.

- a. Long-term debt to Total Debt ratio shows that all of the sample banks have fluctuating trend of long-term debt to total debt ratio. In average BOKL has 0.72 % of average long-term debt to total debt ratio, which means that about 99.28 % of the total debt is contributed by current liabilities. Similarly HBL has the average ratio is 1.57%. Likewise, NIBL has the average ratio of 1.48%.
- b. Long-term debt to capital employed ratio highlights the portion of fund financed by long-term debt in the capital employed by the firm. The data shows BOKL has the average ratio of 8%. Similarly HBL has the average of 23%. At the same time, in case of NIBL, the average long-term debt to capital employed ratios is 14%. We can conclude that all the companies do not have appropriate ratio of long-term debt to capital employed and among the three in average HBL has employed more of the long-term debt in the capital than the other two.
- c. Debt to total assets ratio express the relationship between creditors fund and total assets. The debt ratio or debt to total assets ratio of BOKL, HBL, and NIBL is negligible which concludes that the debt used as the capital are negligible.
- d. Debt equity ratio of BOKL shows the creditors have 16% claims on the assets, which is lowest among the three banks. It also indicates that the company has lesser amount to be paid as interest on debt. In case of HBL, the claim of creditors is 63%, which is higher than that of owners of the company. Similarly, in case of NIBL the claim is 47%; indicate that the claim of owners is higher than the creditors.

- e. Interest coverage ratio shows how many times the interest charges are covered by EBIT out of which they will be paid. The conclusion drawn by the study is the average interest coverage ratio of BOKL is 1.66, HBL is 1.82 and NIBL is 1.86, which shows that all the samples banks are able to cover the interest but as the higher interest coverage ratio is better, NIBL seems to have higher ratio than other two banks.
- f. In regards of the comparative position of return on total assets, all the three commercial banks seems to have the similar rate return of around 1%.
- g. The Return on Shareholder's Return of BOKL shows the average ratio of 17% and it has fluctuating trend. The data indicates that BOKL has instable return. Similarly HBL has decreasing trend and the average of 23%. Like wise, the return on shareholders' equity of NIBL has increasing trend in these five fiscal years study with the average ratio of 20%. By analyzing the average ROSHE, we can conclude that return earned by the shareholders' equity of BOKL is least i.e. 17% and the return of HBL is highest among three companies i.e. 23%. So we can conclude that all three companies should apply suitable action to increase ROSHE.
- h. Earning per share of an organization shows the strength of the share in the market. The average earning per share of BOKL is Rs. 26.83. Similarly, the average earning per share of HBL is Rs. 52.74. And, the average earnings per share of NIBL is Rs. 49.35. Among the three, HBL has the highest earning per share.
- i. Dividend per share shows the amount of earning distributed to ordinary shareholders. It shows the efficiency and effectiveness of the company. The investors invest in the company paying adequate amount of dividend. The average dividend per share of BOKL is Rs.18.60. Similarly; HBL shows an

average DPS of Rs. 18.33. Again, NIBL shows an average DPS of Rs. 20.09. Among the three, NIBL has paid the highest dividend.

- j. Net Income approach is the dependent hypothesis of capital structure, which states with the increased use of leverage, overall cost of capital declines and the total value of firm rise. According to this hypothesis the firm with the highest value and the least cost of capitalization rate is considered to have the best capital structure. The average value of firm of BOKL, HBL, and NIBL are 3223.57, 8089.03 & 5833.07 respectively and the average cost of capitalization rate is 25.00%, 17.00% and 15.06% respectively. From the calculation it can be concluded that HBL & NIBL have the better capital structure in comparison with BOKL.
- k. Net Operating Income (NOI) is the independent hypothesis of the capital structure decision of the firm. According to this hypothesis, any change in the leverage will not lead to any change in the total value of the firm and market price of the share, as the overall cost of capital is independent of the degree of leverage. From the position of average “Ke”, we can conclude that NIBL has lesser ‘Ke’ i.e. 6.74% than BOK i.e. 8.00% and HBL i.e. 8.01%.
- l. When the company employs debt or other fund carrying fixed charges in the capital structure, financial leverage exists. From the calculations, we can conclude that BOK is using high long-term debt and so is bearing the highest risk among the three. But it can also be concluded it is taking corrective actions to decrease its risk since the trend is decreasing. HBL has moderate financial risk and NIBL has employed less long-term debt so it has lesser financial risk
- m. Considering the correlation coefficient and probability error calculated the correlation coefficients are positive and P.E. are less than the correlation coefficient which concludes that the total debt and shareholder’s equity deviate in the same direction and relationship between total debt and correlation efficient are

significant. Like wise in the case of EBIT and interest the correlation coefficient are positive and significant in relationship.

- n. In the case of long-term debt and earning per share, the correlation coefficients of all two are negative which concludes that the negative correlation exists between the two variables. While in case of BOK the correlation coefficient is positive i.e. ii shows positive relation. Since, P.E. in all cases are significantly high, the relationship between LTD and EPS is concluded to be insignificant.
- o. In the case of correlation between EBIT and DPS, all the three banks have positive correlation but insignificant relationship between the two variables.

## ***Recommendations***

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

- a. First of all, the companies lack the application of theoretical knowledge regarding the capital structure. They have not given significant attention to the capital structure matter. Capital structure is a serious matter. It affects EPS, Value of the firm, Cost of capital etc, so it is recommended that these companies should follow the theoretical aspects of the capital structure management or give bit more attention in this matter and try to manage their activities accordingly.
- b. Observing the return on shareholder's equity, earning per share, dividend per share, return on assets, NIBL seems to have better capital structure but with greater financial risk than the other two. The companies along with the return should also consider the risk associated. The companies' shareholders not only seek the high return from their investment but also consider the risk of the investment. So it is recommended to all these companies to plan their capital structure well by analyzing the possible financial alternatives considering high return and least risk.
- c. NIBL and BOKL have started using long term debt as an important proportion in the capital since the fiscal year 2005-06 by issuing bond. This step has comparatively increased the financial status and other figures in these years. Hence, it can be considered a corrective action of the banks regarding making of capital structure appropriate.

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

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