

CHAPTER – I

INTRODUCTION

1.1 Background of the study

Financial sector reforms in Nepal over the past 10 years includes the liberation of interest rates, creation of basic regulatory framework and development of the long term governmental securities markets which have led to some significant improvements in financial sector. In order to enhance the role of this sector, the financial resources should be made easily accessible and properly utilized which would, in turn, help to achieve the desired results through various economic activities. Although the present development and expansion of the financial sector are desired towards the achievement of the above-mentioned objectives, the country has been able to realize the desired outcomes.

Commercial banks and other financial institutions play vital role in the economic development of the nation. The insufficiency of banking and financial activities shows downward growth of economic development. The main objective of these institutions is to earn profit by proper mobilizations of resources by their productive use after collecting them from scattered sources. It is fairly safe to say that banks are not the outcomes of economic development but are the cause or the symptoms of economic development. The modern banks provide facilities for the development of trade, commerce and industries. Thus, they have been the means for the upliftment of the society. These banks acts in many different ways such as accepting deposits, providing interest against the deposits, granting loans that help to remove the deficiency of capital, performing agency function

to make people's life easier and creating the credits. When the economy is in boom, these banks increase the rate, which reduces the probability of inflation and in the case of depression; they reduce the rates so that people are interested in investment.

When the government permitted to establish commercial bank in the early 1980's three commercial banks namely Nepal Arab Bank Limited, Standard Chartered Bank Limited and Nepal Investment Bank Limited were established in 1984, 1985, and 1986 respectively. After the democracy the democratically elected government adopted the liberal and market oriented economic policies, then the numbers of commercial banks have been increasing continuously. The main objective of these banks is to collect deposits and provide loans to the productive sectors of the economy like agriculture, commerce and industries and to provide the modern banking services to their customers.

Commercial banks in Nepal have been playing major roles for the economic development of the Nation. Small and poor capital market has put the numerous constraints and is responsible for the sub optimal operation of these modern banks. On the other hand numerous decisions and policies are to be undertaken for its smooth operation. One of the major decisions is Capital structure decision, which is expected to have a dominant influence on efficiency and profitability of these commercial banks.

"Capital structure is the composition of the debt and equity securities and is considered as financing decision undertaken by the financial manager. The financial manager must strive to obtain the best financing mix or optimum capital structure for his firm. The firm

attains capital structure where the debt-equity proportion maximizes the market value of the shares. The uses of debt affect the return and risk of the equity shareholder; it increases the return on equity fund and at the same time it also increases risk. A proper balance must be maintained between the risk and return in order to maximize the market value of shares". (Pandey; 1995)

Capital structure refers to the combination of long term source of funds such as long term debt, preferred stock and common equity including reserves and surplus (i.e. retained earning) (Thapa and Gautam; 2008). Capital structure represents the relationship among different sources of long term capital. Firms normally raise their long term capital by issuing common shares. Besides that preference shares is another major source of capital. The share capital is often supplemented by debt securities and other long term borrowed capital.

"Capital structure is very crucial part of financial management as the various composition of debt and equity capital may impact differently on risk and rate of return to equity shareholders. The funds required to business enterprises are raised either through the ownership securities (i.e. equity share and preference shares) and creditor ship securities (i.e. debenture and bond). A business enterprise has to maintain a proper mix of both the securities in a manner that the cost and risk perception to the shareholders are minimized. The mix of different securities is portrayed by the firm's capital structure". (Koirala; 1990)Financial decision must be very sensitive in misappropriate composition of debt and equity in capital structure may lead to bankruptcy of the firm. The optimal capital

structure is maintaining a level of debt and equity where the risk perception of shareholder is minimized and returns are maximized. As the return to shareholder is maximized automatically the market value of the firm is maximized. The capital structure affects the cost of the firm. The financial manager must be sensible enough while selecting the optimal capital structure for the organization.

1.2 Commercial Banking Scenario in Nepal

The history of financial and monetary development in Nepal is not very old. It has gone through different stages. During the Prime ministership of Randeep Singh around 1872 A.D. "Tajarath Adda" was introduced. It brought reforms in economic and financial sector. The main purpose of "Tajarath Adda" was to provide credit facilities to the general public at a concession rate. However, the installment of "Kausi toshakhana" as a banking agency during the regime of King Prithvi Narayan Shah could also be regarded as the first step towards banking in Nepal. After that the first commercial bank of Nepal, Nepal Bank Limited (NBL) was established with the cooperation of Imperial Bank of India in November 1937 holding 51% of government equity. The second commercial bank Rastriya Banijya Bank (RBB) came into existence in 1966 A.D. with 100% government ownership. Similarly, Agriculture Development Bank was established in 1968 A.D.

In early 1980's, to meet the need of healthy competition in the financial system, Nepal allowed the entry of foreign banks as joint ventures with of 50% equity participation. The concept of joint venture banks in Nepal brought a totally new and drastic change in

consideration of financial institutions, which were mushrooming in the country. It brought crucial change and big milestones were created in its services during the short spans of time. Nepal Rastra Bank (NRB) came into existence as the central bank of the country in April 1956 A.D, under the NRB act 1955 A.D. It was established with a vision and mission of managing the other financial institutions and also for the circulation of national currency and also to maintain exchange rate stability.

In the liberal financial system, the role of central bank was to act as a guardian of financial institutions. The recent incident of South East Asian countries have shown that in the case of weak monitoring and supervision financial crisis is likely to occur. Taking this fact into consideration, it is essential to make financial system healthy and strong while enhancing the monitoring and supervising capacity of the central bank.

Government of Nepal budget for the year (FY2005) provided the justification for allowing the setting up of joint venture banks in the following words. "As present the financial institutions of the country have neither been effortful to mobilize resources. On the one hand, the major part of their commercial loan is concentrated among the few individuals where as the small trade entrepreneurs are facing difficulties to receive loan on the other. The only solution to this problem is to encourage competition in the banking sector. Therefore, a policy of allowing new commercial banks under joint venture with foreign collaboration has been adopted. This will promote competition among banks where as the customer can get better and improved facilities. In addition, the share of

these new banks will also be circulated to the general public. It will ensure that if the ownership is circulated to the maximum extent as possible."(Ministry of Finance; 2005).

Today, there are altogether 32 commercial banks, which are operating in Nepalese financial market. Besides, that many other commercial banks are also starting their operation soon.

Nepal Arab Bank limited is the first bank established in joint investment in Nepal. This bank was established in 2041(1985) under the commercial bank act 2031 (1974) and company act 2021 (1964). Now, it is called NABIL Bank Limited. The second bank established under joint venture investment was the Nepal Indosuez Bank Ltd. It was established in 2042 (1985). At present it has been re-named as Nepal Investment bank limited and there is no foreign investment.

1.3 Statement of the Problem

Capital structure is of course, very crucial matter for any organization but it is not getting ample concern in most of the organizations. After adoption of open liberal and market oriented economic policies, many commercial banks are operating in Nepalese financial market. Banking sector should be very conscious about the risk and return. By optimal capital structure they can balance their risk and return, yet it is not properly implemented in such sector as well. Among the listed commercial banks in the stock exchange very few are balancing the amount of debt and ownership capital so rests of them are ruined by excess burden of debt capital.

Every organization has their own policy to determine capital structure. Some are using more debt capital and some are using more ownership capital in their overall capital structure. There is not any hard and fast rule, for how much a company can use debt capital and how much ownership capital so determination of capital structure largely depends on company policy and cost of capital. There is no uniformity in combination of debt and equity capital among Nepalese commercial banks. Commercial banks should be highly conscious about the cost and return of the capital and they should also be conscious about capital structure. In the initial period of any organization only equity capital is used and there is no use of debt in their capital structure due to high interest cost.

Efficient capital structure is the major tool to measure the strength and weakness of the bank. Strong banking system contributes to national economy and also attracts further foreign investment in this sector. It may be an example to new comer banks as well. Therefore the present study seeks to explore the answers to following questions.

-) How efficiently the sample banks are managing their capital structure?
-) What is the current capital structure of sample banks?
-) What factors affects in optimal capital structure and what are the problems in determining and implementing optimal capital structure?

1.4 Objective of the Study

It is a fact that commercial banks have been playing a vital role to uplift the economic development of the country. For that, they must have strong financial position, i.e. capital structure and the way of its finance. The size and type of the capital and assets depends upon the size and nature of the organization. The objectives of this study are as follows:

-) To analyze the mix of debt and equity capital of sample banks.
-) To analyze the relationship of capital structure and profitability.
-) To examine the interest paying capacity of the sample banks.
-) To examine the actual cost of fund of sample banks.

1.5 Significance of the Study

Financial institutions are more concerned with the firm's long term financial strength. To judge the long term financial position of the firm, capital structure and profitability of the firm are creditable to analyze. Capital structure analysis helps to differentiate groups of the organization. This study will be beneficial to all of the parties of the organization. Its significance can be broadly divided into four groups.

Significance to the Shareholders

This study will be helpful to aware the shareholders regarding the financial performance of their banks. The comparison will help them to identify the productivity of their funds in each of these banks.

Significance to the Management

Improved and optimal use of the capital structure can help the management, minimize the cost and maximize return.

Significance to the Policy Makers

Policy makers refer to the government and Nepal Rastra Bank and management. This study will be helpful to them while formulating the policy regarding commercial banks.

Significance to outsiders

Among outsiders, mainly the customers, financing agencies, stock exchange and stock traders are interested in the performance of banks. This study can help the investors to identify the bank in which they can invest. The financial agencies can understand where the funds are more secured and stock exchanges, stock broker can find the relative worth of stock of each bank.

1.6 Limitation of the Study

The study has the following limitations.

-) This study is mostly based on secondary data collected from various sources.
-) This study is based on the data of last five years only.
-) Though 32 commercial banks are in operation in Nepal, only two commercial banks are taken as sample for the study.
-) This study concentrates only on capital structure and profitability in commercial banks.

J The lack of sufficient resources and time is the limitation of the study. The purpose of this study is to fulfill the partial requirement for the Masters of Business Studies (MBS) and has to be conducted and submitted within the prescribed time.

1.7 Organization of the Study

The present study has been divided into five chapters as follows:

Chapter – I: Introduction

This chapter includes background of study, commercial banking scenario in Nepal, statement of the problem, objective of the study, significance of the study, limitation of the study and chapter plan of the study.

Chapter – II: Review of Literature

Relevant literature on purposed study has been reviewed in this chapter. It includes conceptual framework and findings of past studies.

Chapter – III: Research Methodology

This chapter outlines the methodology followed by the researcher for analyzing data in line with the objectives. It deals with the research design, nature and sources of data, method of analysis etc.

Chapter – IV: Presentation and Analysis of Data

This chapter deals with the presentation and analysis of data with the help of relevant tools specified in methodology. This chapter also includes the interpretation of data.

Chapter – V: Summary, Conclusion and Recommendation

The last chapter contains the findings of whole study after which major conclusion and recommendation are provided.

The bibliography and appendices is also included in the chapter

CHAPTER–II

REVIEW OF LITERATURE

The purpose of reviewing the literature is to develop some experts in one's area of research. In this chapter an attempts has been made to analyze the theoretical portion of capital structure and optimum level of capital structure in Nepalese commercial banks. This chapter includes the review of present concepts, assumptions of books and journals as well as major findings of previous studies in relevant field. Every study is very much based on past studies thus; the past studies are scanned well to broaden the base for this study. This phase is of course, a crucial phase in research study because it finds what works have been done in the area of research problem and what has not been done. For this the whole chapter has been divided into three parts:

2.1 Conceptual Review

2.2 Review of Journals and Articles

2.3 Review of Thesis

2.1 Conceptual Review

In this part of literature review, the researcher is trying to clarify the theoretical concept regarding capital structure and theories on it.

2.1.1 Concept of Capital Structure

When a firm is established, it needs capital, and that capital comes from debt or equity. Debt has two important advantages. First, interest paid is interest deductible, which lowers debts effective cost. Second, debtors get a fixed return, so stockholders do not have to share their profit if the business is extremely successful.

However, debt also has disadvantages. Firstly, higher the debt ratio, higher will be the risk. Secondly, if a company falls on hard times and operating income is not sufficient to cover even the interest charges, its stockholders will have to make up the shortfall, and if they cannot, bankruptcy will occur. Good time may be just round the corner, but too much debt can keep the company from getting there and thus, can wipe out the stockholders.

Capital structure is the long term financing of a company, including long-term debt, common stock and preferred stock, and retained earnings. It differs from financial structure, which includes short-term debt and accounts payable. The proportion of short-term and long-term debt is considered in analyzing a firm's capital structure. When people refer to capital structure, they are most likely referring about a firm's debt/equity ratio, which provides insight into how risky a company is? Usually a company financed heavily by debt poses greater risks because it is highly levered. Capital structure is the combination of a company's long-term debt, specific short-term debt, common equity, and preferred equity. It is the firm's various sources of funds used to finance its overall operations and growth. Debt comes in the form of bond issues or long-term notes

payable, whereas equity is classified as common stock, preferred stock, or retained earnings. Short-term debt such as working capital requirements is also considered as an integral part of the capital structure.

In finance, capital structure refers to the way a corporation finances its assets through some combination of equity, debt, or hybrid securities. A firm's capital structure is then the composition or 'structure' of its liabilities. For example, a firm that sells Rs.20 billion in equity and Rs.80 billion in debt is said to be 20% equity-financed and 80% debt-financed firm. The firm's ratio of debt to total financing is 80%, in this example is referred to as the firm's leverage. In reality, capital structure may be highly complex and include various sources. Gearing Ratio is the proportion of the capital employed of the firm which come from outside of the business finance, e.g. by taking a short term loan etc.

The Modigliani-Miller theory, proposed by Franco Modigliani and Merton Miller, forms the basis for modern thinking on capital structure, though it is generally viewed as a purely theoretical result since it assumes many important factors in the capital structure decision. The theory states that, in a perfect market, how a firm is financed is irrelevant to its value. This result provides the base with which to examine real world reasons so as to why capital structure is relevant, that is, a company's value is affected by the capital structure it employs. It includes other reasons such as bankruptcy costs, agency costs, taxes, information asymmetry, to name some. This analysis can then be extended to look

at whether there is in fact an optimal capital structure: the one which maximizes the value of the firm.

"Capital Structure is the combination of long term debt and equity. It is a part of financial structure i.e. comprised to; the total combination of preferred stock, common stock, long term debt and current liabilities. If current liabilities are removed from it we get capital structure." (Mathur, 1979).

Capital structure is different from financial structure. Financial structure is the combination of both short-term and long-term source of financing where as capital structure is the combination of long term debt, preferred stock and common equity. Capital structure does not include short-term source of financing like accruals, trade credits, commercial papers etc.

Capital structure of a firm can be shown as:

Capital structure = Long-term debt + Preferred stock + Common equity

Financial structure of a firm can be shown as:

**Financial structure = Current liabilities + Long-term debt + Preferred stock +
Common equity**

"Financial structure refers to the way the firm's assets are financed; it is the entire right hand side of the balance sheet. Capital structure is the permanent financing of the firm, represented primarily by long term debt, preference stock and common stock but excluding all short term credit. Thus, a firm's capital structure is only a part of its financial structure" (Weston and Brigham; 1979).

"Different sources of financing are used to finance current and fixed assets. The sources of financing may be short-term and long-term, but they are usually grouped into debt and equity which characterize the firm's capital structure" (Pradhan, 1996).

"If the capital structure decision affects the total value of the firm, it should select such a financial mix as well as maximize the shareholders wealth. Such, a capital structure refers to optimal capital structure" (Khan and Jain, 1995).

Capital structure of a firm is determined by the various internal and external factors. Capital structure is one of the much crucial decisions that a financial manager has to make as it affects risk, return, and cost of capital and finally value of firm. The optimal capital structure is one that maximizes the value of the firm or reduces the overall cost of capital. But, in practice, the optimal capital structure is governed by many factors besides the cost of capital in the capital structure. The financial manager should set a target capital structure and the subsequent financing decision should be made with a view to achieve target capital structure. Every time when the funds have to be procured, the financial manager needs to weigh pros and cons of various sources of finance and should select most advantageous source keeping in view the target capital structure. We may use

various methods of analysis, not completely satisfactory in itself but if taken collectively, they can give enough information to make a rational decision.

Access to financial market, component cost of capital, risk bearing capacity of management, operating leverage, legal requirement, age of enterprises, business risk, collateral value of the assets, operating cash flows, growth and stability of sales, period of finance, debt covenants, corporate tax rate, and nature and size of the firm also determine the capital structure. Thus, financial manager should be very much careful while designing capital structure of the firm.

2.1.2 Concept of cost of capital

The cost of capital is an important element which can also be taken as basic information in capital investment decisions. "The cost of capital concept is significant not only in an investment criterion but can also be used to evaluate the financial performance of top management". (Bhattacharya, 1970).

It is necessary to analyze the cost of specific sources in order to show the basic inputs for determining the overall cost of capital. "The computed value for the cost of capital can be regarded as a fair approximation of the cost of capital inputs consistent with company needs, the conditions under which it is raising its capital, the level of expectations and corporate policy constraints."(Kuchhal, 1982). A company may use more than one type of capital. In this situation, the company's composite cost of capital can be determined after the cost of each type of funds that has been obtained. The first step, therefore, in the

measurement of company's cost of capital and the calculation of each specific cost which is the minimum financial obligation that is incurred in order to secure the use of capital from a particular source. Hampton defines cost of capital as the rate of return that a firm requires as a form of an investment in order to increase the value of the firm in the market place.

As we have already defined that capital structure consists of three components. So, cost of these three components (long-term debt, preferred stock and common equity) should be considered while calculating the cost of capital.

Cost of Debt Capital

A debt is a long-term obligation and simultaneously a promise to pay the face amount or principal at a designated date of maturity, to pay interest at a specified rate periodically. Component cost of debt is calculated by dividing the amount of interest by the total amount of loan provided or it is the ratio of interest and principle.

Cost of Preferred Stock

Preferred stock is a hybrid form of capital possessing a mixture of debt and common stock characteristics. The cost of preferred stock is discount rate, which equalizes the future expected dividends to the present market price of share. If the preferred stock is callable then the discount rate equates the future expected dividends to the call price. The cost of preferred stock is a function of its stated dividends.

Cost of Equity Capital

The equity shares must involve a return in terms of dividend expected by the shareholders. The cost of equity capital is defined as the minimum return that a firm must earn on the equity financed portion of its investment in order to leave the market price of its stock constant. The cost of equity capital is the rate of discount that equates the present value of all future expected dividends per share to the present price of common stock. It is the return required by the investors. Equity capital is the combination of common stock (external equity) and retained earnings (internal equity). Cost of new common shares is the minimum rate of return, which is required on the new investment, financed by the new issue of common shares, to keep the market value of the share stable. Cost of retained earnings is the opportunity cost to the shareholders because when the firm decides to retain the current earnings in the firm, then shareholders give up their cash dividends. "The cost of retained earnings must be viewed as the opportunity cost of the foregone dividends to the existing common shareholders" (Gitman, 1982).

Measurement of cost of capital is necessary after the calculation of various elements of costs. The composite or overall cost of capital is the weighted average cost of various sources of funds, weights, being the proportion of each source of funds in the capital structure. Each source of capital such as stocks, bonds and other debt is weighted in the calculation according to its prominence in the company's capital structure.

The equation form of the weighted average cost of capital is given below.

$$K_o = W_d K_d + W_{ps} K_{ps} + W_r K_r + W_e K_e$$

Where,

K_o = overall cost of capital

K_d = cost of debt

K_{ps} = cost of preferred stock

K_r = cost of retained earning

K_e = cost of new equity

W_d = proportion of debt to total capital

W_{ps} = proportion of preferred stock to total capital

W_r = proportion of retained earning to total capital

W_e = proportion of equity to total capital.

The cost of capital is an important element as it is the basic information in capital investment decisions. The cost of capital concept is significant not only as an investment criterion but can also be used as a tool to evaluate the financial performance of top management. Thus, it always plays a integral part in the theory of capital structure. Basically, it functions as a benchmark for the investment as well as financing decision of an enterprise.

2.1.3 Assumptions of capital structure

To explain different theories, following assumptions are made:

-) The ratio of debt to equity for a firm is changed by issuing debt to repurchase stock or issuing stock to pay off debt. In other words, a change in capital structure is effected immediately. In this regard, we assume no transaction cost.
-) The firm has a policy of paying 100% of its earnings in dividends. Thus, we abstract from the dividend decision.
-) The expected value of the subjective probability distribution of expected future operating earnings for each company are the same for all investors in the market.
-) The operating earnings of the firm are not expected to grow. The expected value of the probability distributions of expected operating earnings for all future periods are the same as present operating earning.
-) There are only two sources of funds under a firm: perpetual risk less debt and ordinary shares.
-) The dividend pay out ratio is 100%. That is the total earning is paid out as dividend to the shareholders and there are no retained earnings.
-) The total assets are given and do not change. The investment decisions in other words are to be constant.
-) The total financing remains constant. The firm can change its degree of leverage (Capital structure) either by selling shares and use the proceeds to retire debenture or by raising more debt and by reducing the equity capital.
-) The operating profit (EBIT) is not expected to grow.
-) Perpetual life of the firm.

Besides the above assumptions, the following symbols related to capital structure theories are used.

B = Total market value of debt

S = Total market value of stock

V = Total market value of Firm ($B + S$)

K_e = Equity capitalization rate

K_d = Cost of debt / Yield on debt

K_o = Overall capitalization rate

I = Total amount of interest

EBIT = Earning Before Interest and Taxes or Net Operating Earning.

2.1.4 Theories of Capital Structure

The two principal sources of long term financing are equity and debt capital. The composition of these two long term financing is known as capital structure. Under normal economic condition, the earnings per share can be increased using higher leverage. But leverage also increases the financial risk of the shareholders. As a result, it cannot be said whether or not the value of the firm will increase with leverage. In other words, a great deal of controversy has been developed on whether the capital structure affects value of the firm or not. Traditionalists agree that capital structure is relevant factor for valuation of the firm. Further, they say value of the firm can be maximized by adopting optimal capital structure. Modigliani and Miller, on the other hand argue that in perfect capital market, it does not affect value of the firm. The theories introduced in early stages are based on the assumption of investor's view over the degree of leverage.

These two divergent views are the variations of the net income approach (NI) and the net operating income approach (NOI) as originally developed by Durand (Durand, 1958). In 1958, a comprehensive analysis of capital structure by Franco Modigliani and Metro Miller published an article on the issue of capital structure irrelevancy. The article is considered to be the most significant work in financial research. In this article M-M logically asserted that the value of the firm or the cost of capital is independent of capital structure decision of the firm. However, two conflicting views exist in the relationship between capital structure and cost of capital or the value of the firm (Modigliani and Miller, 1958).

The challenge faced by financial theorists and corporate managers is the relationship between firm's capital structure and its cost of capital and value. The main theories are as follows:

1. Net income(NI) approach
2. Net operating income (NOI) approach
3. Traditional approach
4. Modigliani and Miller (MM) theory
 - a. With taxes
 - b. Without taxes

1. Net Income Approach

This theory was propounded by David Durand. “ The essence of the net income theory is that the firm can increase its value or lower the overall cost of capital by increasing the position of debt in the capital structure” (Brealy and Steward, 2002).

“The emphasis on EBIT is to measure how the degree of leverage brings change in the valuation of a firm. Assuming a constant equity capitalization rate, the increase in cheaper debt funds lowers the weighted average cost of capital and thereby raising the value of the firm and the increase in debt may not be increasing.” (Shrestha, 1981).

Assumptions of this approach are:

-) The use of debt does not change the risk perception of investors, as a result, the equity capitalization rate i.e. K_e and the debt-capitalization rate i.e. K_d remains constant with change in leverage.
-) The debt capitalization rate is less than the equity capitalization rate (i.e. $K_d < K_e$)
-) The corporate income tax does not exist.

The Net income approach assumes no change in the attitude of the both stockholders and debt holders regarding the required rate of return in response to a change in debt and equity ratio of the firm. Consequently, the interest rate on debt (k_i) and the equity capitalization rate (k_e) remain constant regardless of the leverage. Due to limited degree of risk, the debt holder's required rate of return is relatively lower than that of equity holders. So, the debt financing is relatively cheaper than equity. In addition, at constant cost equity (k_e) and the cost of debt (k_i), the overall cost of capital (k_o) declines with the increased proportion of the debt in the capital structure. In other word, the increased use

of debt results in lowering the overall cost of capital (k_o) and it further results in higher market value of shares. Thus, this approach is appeared as relevancy theory. Therefore, according to this approach, the capital structure decision is relevant to the valuation of the firm and the overall cost of capital. In other words, a change in the financial leverage (proportion of debt in the capital structure) will lead to a corresponding change in the overall cost of capital as well as total value of the firm. So, if we increase the ratio of debt in the capital structure, the weighted average cost of capital will decline and the value of the firm as well as the market price of the ordinary shares will increase. In contrast, a decrease in the debt ratio will cause an increase in the overall cost of capital and a decline in the value of the firm as well as the market prices of the equity shares will decrease

According to this approach, both the interest on debt (K_d) and the cost of equity capital (K_s) are assumed to be independent of leverage that is they are constant regardless of how much debt the firm uses.

In the above figure, Y-axis called cost of capital and X-axis called degree of leverage. Under approach, ' K_e ' and ' K_d ' are assumed as constant. As the proportion of debt is increased in the capital structure, being less costly it causes weighted average cost of capital to decrease approach the cost of debt. The optimum capital structure would occur at the pointing where the value of the firm is maximum and overall cost of capital is minimum.

2. Net Operating Income Approach

This theory was propounded by Durand. The NOI approach does not agree with NI approach. It is also known as modern theory or an independent hypothesis of capital structure. This theory assumes that the cost of debt and overall cost of capital remains constant with the firm's financial leverage. However, as the firm increases its relative debt level, the cost of equity capital increases. "The total value of the firm remains unaffected by its capital structure. There is no optimum capital structure and investors are indifferent to change in capital structure as whatever results from debt financing, will offset by the rise in cost of equity capital with result that overall cost of capital remains unaffected for all the degrees of financial leverage" (Shrivastav, 1984).

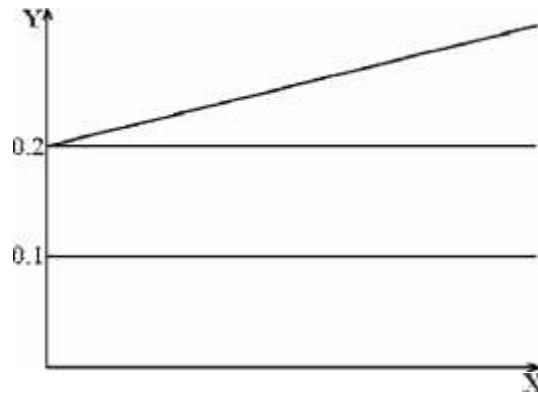
Various assumptions of the net operating income approach are as follows:

-) The overall cost of capital remains constant.
-) The cost of debt remains constant.
-) Cost of debt is less than cost of equity.
-) The required rate on equity increases linearly with an increase in debt ratio.
-) Total operating profit remains constant.

The net operating income approach (NOI) is slightly different from net income approach with respect to the assumption of the behavior of equity holders and debt holders. The NOI approach assumes that the equity holder feel higher degree of financial risk and demand higher rate of return for higher debt equity ratio. Furthermore, 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; consequently, no effect at all on overall cost of capital (k_o) as well as the cost of debt (k_i) remain constant regardless of the degree of the leverage. Thus, this approach argues that the capital structure decision of the firm is irrelevant because, any change in leverage will not lead to any change in the total value of the firm and the market price of shares. This theory assumes that, the capital structure (proportion of debt and equity) is irrelevant to the value of firm and the overall cost of capital. Under this approach, net operating income is capitalized as an overall capitalization rate to obtain total market value of the firm. The market value of the debt, then, is deducted from the total market value to obtain the market value of the stock.

The degree of leverage, cost of capital and value of firm are shown as follows.



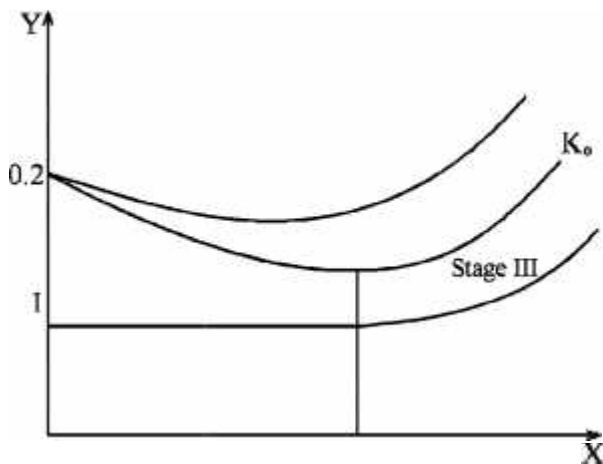
In above figure Degree of leverage is plotted along the horizontal axis and the cost of capital figures on the vertical axis. It shows that K_o and K_d are constant and K_e increase with leverage continuously. As the average cost of capital is constant, this approach implies that there is not any unique optimal capital structure." (Pandey; 1999)

3. Traditional Approach

Traditional approach assumes the capital structure as relevant matter for the value and cost of capital of the firm. It takes some features of both net income and net operating

income approach. This approach strikes a balance between the two different approaches net income and net operating income. Therefore, it is also known as the intermediate approach. It resembles the net income approach in arguing that cost of capital and total value of the firm are not independent variables of the capital structure. But it does not subscribe to the view of net income approach that a value of a firm will necessarily increase for all degree of leverage. In one respect, it shares a feature with the NOI approach, and beyond that at a certain degree of leverage, the overall cost increases leading to a decrease in the total value of the firm.

According to this approach, there is an optimal capital structure therefore; the firm can increase its total value through the wise use of leverage. The firm initially can lower its overall cost of capital through the use of cheapest cost debt and raise its total value through leverage. But the increase in leverage increases the risk to the debt holders and the debt holders demand high interest rate as a result the overall cost of capital also increases.



"The traditional approach assumes that there exists an optimal capital structure and that a firm can increase its total value through the judicious use of leverage." (Van Horne,1997). According to this view, the value of the firm can be increased or the cost of capital can be reduced by the judicious mix of debt and equity capital." (Pandey, 1987). According to traditional approach, the manner in which the overall cost of capital reacts to change in capital structure can be divided into three stages. (Soloman1969)

Stage -1 Increasing Value

The first stage of traditional approach begins with the introduction of debt in the total capital. In this stage, the debt capitalization rate, k_d remains more or less constant up to a certain degree of leverage but rises thereafter at an increasing rate. It means, the equity capitalization rate, k_e remains constant or rises slightly with debt fund, but when it increases, it does not increase prompt enough to offset the advantage of low cost debt. During this stage, the cost of debt (k_d) remains constant or rises negligibly since the market views the use of debt as a reasonable policy. As a result, the value of the firm (V) will increase or the overall capitalization rate (k_o) falls with increase in leverage.

Stage -2 Optimum Value

In the second stage, the cost of equity capital (K_e) remains more or less constant or raises only gradually upto a certain degree of leverage and rises sharply thereafter. Once the firm reaches a certain degree of leverage, further applications of debt have a negligible effect on the value of the firm or the overall cost of capital to the firm. It is so because the

increase in cost of equity offsets the advantage of low cost of debt. At this specific level of leverage the value of firm will be maximum or the cost of capital will be minimum.

Stage -3 Declining Value

After the acceptable range of leverage, the value of the firm decreases with leverage or the overall cost of capital increases with leverage. This happens because the cost of both debt and equity will tend to rise as a result of increasing the degree of financial risk that will make increase in the overall cost of capital. Thus, in third stage, the market value of the firm will show depressing tendency. In this stage the overall cost of capital K_o is regarded as a consequence of the behavior of cost of equity and cost of debt

-) Decrease to a certain point
-) Remains more or less stable for moderate increase on leverage thereafter, and
-) Rise beyond a certain point.

The overall effects of these three stages are to suggest that the cost of capital is a function of leverage. First, it declines with leverage and after reaching at a minimum point or range it starts rising. Under such a situation, there is a precise point at which the cost of capital would be minimized. This precise point would occur at that optimum degree of leverage, at which marginal cost of debt is equal to the average cost of capital (Soloman, 1969).

4. Modigliani - Miller Approach (M-M Approach)

The Modigliani-Miller theory, proposed by Franco Modigliani and Merton Miller, forms the basis for modern thinking on capital structure, though it is generally viewed as a purely theoretical result as it assumes away many important factors in the capital structure decision. The theory states that, in a perfect market, how a firm is financed is irrelevant to its value. This result provides the base as to which examines real world reasons why capital structure is relevant, that is, a company's value is affected by the capital structure it employs. It includes reasons such as bankruptcy costs, agency costs, taxes, information asymmetry, to name some. This analysis can also be extended to examine whether there is in fact an optimal capital structure: the one which maximizes the value of the firm.

The Modigliani-Miller proposition supports the NOI approach relating to the independence of the cost of capital of the degree of leverage at any level of debt equity ratio. The significance of their hypothesis lies in the fact that it provides behavioral justification for constant overall cost of capital and therefore total value of the firm. In other words, the MM approach maintains that the weighted average cost of capital does not change, with change in the proportion of debt to equity in the capital structure.

Basic propositions are, firstly the overall cost of capital and the value of the firms are independent of its capital structure. The second proposition of the MM approach is that cost of equity is equal to the capitalization rate of a pure equity stream plus a premium for financial risk equal to the difference between the pure equity capitalization rate (K_e) and K times the ratio of debt to equity. The third proposition of the MM approach is the

cut-off rate of investment proposes in completely independent of the way an investment is financed.

The proposition that the weighted average cost of capital is constant irrespective of the type of capital structure is based on following assumption.

-) Perfect capital market: The perfect capital market means that, security is divisible, there is no transaction cost, investors are free to buy and sell securities, and investors are rational and behave rationally.
-) The dividend payout ratio is 100 percent
-) There is no tax, this assumption was removed later.
-) The risk of investor is defined in terms of variability of the net operating income. Firms can be divided into homogeneous risk class. The firm will be considered to be belonging to homogeneous risk class if their expected earnings have identical risk characteristics.

MM theory in 1958 proposed the theory without tax and later with taxes.

MM Theory (Without Tax)

This theory can be expressed in terms of proposition I and II.

Proposition-I

This proposition states that the market value of a firm is independent to its capital structure. MM argues that for firms in the same risk class, the total market value is

independent of debt and equity mix and is given by capitalizing the net operating income (NOI) by the rate appropriate to that risk class, which is expressed as follows:

$$V = \text{EBIT}/K_o \text{ or } \text{NOI}/K_o$$

For unlevered firm,

$$V_u = \text{NOI}/K_{ou} = \text{NOI}/K_{eu}$$

For a levered firm,

$$V_L = \text{NOI}/K_{Lu}$$

Where,

K_{eu} = Equity capitalization rate of an unlevered firm.

K_{el} = Equity capitalization rate of a levered firm.

K_d = The debt capitalization rate.

K_{ou} = Overall capitalization rate of unlevered firm.

V_u = Value of an unlevered firm.

V_L = Value of a levered firm.

T = Corporate tax-rate.

K_o = The overall capitalization rate

K_{ol} = The overall capitalization Rate of a levered firm.

Proposition-II

This proposition states that the K_e is equal to the capitalization rate of a pure equity stream plus a premium for financial risk equal to the difference between the pure equity capitalization rates (K_e) and (K_d) times the ratio of debt to equity. In other words, K_e

increases in a manner to offset exactly the use of a less expensive source of funds represented by debt. The cost of equity capital for levered firm (K_{eL}) is equal to the cost of equity of an unlevered firm (K_{eu}) plus a risk premium equal to the difference between K_{eu} and K_d multiplied by the debt equity ratio.

$$K_{eL} = K_{eu} + (K_{eu} - K_d) B/S$$

Since, $K_{eu} = K_{ou}$. So,

$$K_{eL} = K_{ou} + (K_{ou} - K_d) B/S$$

This proposition shows the impact of financial leverage on the cost of equity. Due to the increase in leverage, the firm gets the benefit of cheaper debt, but the benefit is exactly offset by an increase in the cost of equity in the form of risk premium demanded by shareholders.

M-M Theory (With Taxes)

Under MM theory, the value of firm is independent to its debt policy and is based on the critical assumption that the corporate income tax do not exists. But in reality the corporate tax exists. “In their 1963 article, MM shows that the value of the firm increases with the debt due to the deductibility if interest charges for tax computation and the value of the levered firm will be higher than that of the unlevered firm” (Pandey 1999). Thus, the value of the levered firm is equal to the value of unlevered firm plus the present value of interest tax-shield as shown below.

Value of a levered firm = Value of an unleveled firm + PV of interest tax-shied.

$$V_L = V_u + DT$$

The value of an unleveled firm when corporate taxes exist is:

$$V_u = \frac{\text{NOI} (1-T)}{K_{ou}} - \frac{K_o I}{K_{cu}}$$

The above equation implies that, when corporate tax exists, the value of levered firm will increase continuously with debt. Thus, theoretically value of firm will be maximum when it employs 100 percent debt. Because of the tax deductibility of interest charges, a firm can increase its value or lower overall cost of capital by using cheaper debt funds.

Thus, the optimal capital structure is attained when we employ 100 percent debt. But, in practice firm doesn't employ large amount of debt nor are the lenders ready to lend beyond the certain limit.

Why companies do not employ extreme level of debt or the lenders ready to lend beyond the certain limit? Why companies do not employ extreme level of debt in practice? The reason behind it is that, the borrowing may involve extra cost (in addition to fixed interest cost) like costs of financial distress which may offset the advantage of using debt. Another reason may be the personal taxes involved for lenders.

2.1.5 Factors Affecting Capital Structure

Capital structure of different types of firms varies widely. There are no hard and fast

rules about how much percentage of capitalization should be represented by bonds and debentures and what should be of equity shares and preference shares. Factors affecting capital structure revolve principally around the adequacy and stability of earnings. Followings are the factors which affect the capital structure:

1. **Cost of Capital:** "The impact of financing decisions on the overall cost of capital should be evaluated and the criteria should be to minimize the overall cost of capital or to maximize the value of the firm". (Pandey;1988)
2. **Assets Structure:** Firms whose assets are suitable as securities for loans tend to use debt heavily. "Borrowed capital should not exceed a reasonable percentage of fixed assets".
3. **Flexibility:** "The Company's desire for flexibility in future financing decision also affects the capital structure of the company. Therefore, the company should compare the benefits and cost of attaining the desired degree of flexibility and balancing them properly."(Schwartzman and Ball; 1977).
4. **Control:** If management has voting control over the company and is not in a position to buy any more stock, debt, may be a choice for new financing. On the other hand, management group that is not concerned about voting control may decide to use equity rather than debt.
5. **Profitability:** The firms with very high rate of return on investment use relatively less debt. Their rate of return enables them to do most of their financing with retained earnings.
6. **Taxes:** Interest is deductible expenses while dividends are not deductible. Hence,

the higher a firm's tax rate, the greater is the advantage in using debt.

7. **Interest Rate:** This affects the choice of securities to be offered to investors. High interest rate makes financing costly. When funds are obtained easily and cheaply, there is greater attitude for choice of types of securities to be used.
8. **Operating Leverage:** The Company with a high level of earnings before interest and taxes can make a profitable use. The high degree of leverage is to increase return on the shareholder's equity.
9. **Flotation Costs:** Flotation cost is incurred only when the funds are raised. The cost of floating a debt is less than cost of floating an equity issue. This may encourage a company to use debt rather than issuing equity shares.
10. **Market Condition:** Conditions in the stock and bonds market undergo both long and short term changes which can have an important bearing on a firm's optimum capital structure.
11. **Growth Rate:** Faster growing firm's must rely heavily on external capital. Other factors are stability of sales, cash flow ability of a company, nature of industry and capital requirements etc.

2.1.6 Optimum Capital Structure

The overall cost of capital is minimized; theoretically at least, when the firm reaches its optimum capital structure. The optimum capital structure maintaining a balance between the risk and return and thus maximizes the price of the stock.

) "There is no such thing as the model capital structure for all business undertakings. One way of planning the capital structure is to make it fit into a

model compiled from a number of different experiences that may have been drawn from the historical ratio of the firm" (Kuchal; 1977).

) "Optimum capital structure can be properly defined as that combination of debt and equity that attains the stated managerial goals and maximization of the firm's market value, which finally minimizes the firm's cost of capital. As, the existence of an optimum capital structure implies the simultaneous optimization of both the cost of capital and the firm's market value, it occupies a central position in the theory of financial Management" (Phillipatos; 1974).

) "An optimum capital structure would be obtained at the combination of debt and equity that maximizes the total value of the firm (value of shares plus value of debt) or minimizes the weighted average cost of capital" (Panday; 1999).

) "Firm has certain structure of assets, which offers net operating earnings of a given size and quality. It also gives a certain structure of rates in the capital market, there is some specific degree of financial leverage at which the market value of the firm's securities will be higher (or the cost of capital will be lower) than at any other degree of leverage" (Soloman; 1963).

Some of important objectives of the optimal structure are as follows:

) To maximize return on equity capital

) To minimize cost of capital

) To minimize risk

) To increase flexibility

) To maintain control power

) To employ high grade security

2.2 Review of Journals and articles

In this section, literature related to the capital structure management is reviewed. The framework of the theory structure includes of previous writings, research and studies related to capital structure problems.

Modigliani and Miller (1958) in their first study, they used the previous work of 'Allen and Smith' in support of their independence hypothesis. In the first part of their work, MM tested their proposition I, the cost of capital is irrelevant to the firm's capital structure, by correlating after tax cost of capital, with leverage, B/V . They found that the correlation coefficient is statically significant and position in sign. The regression line does not sauciest a curvilinear, 'u' shaped cost of capital key of traditional view, and then the data are shown in scatter diagram.

In the second part of their study, they tested their proportion II, the expected yield on common shares, is a linear function of debt to equity ratio. The second part of their study is consistent with their views, i.e. if the cost of borrowed funds increases, the cost of equity will decline to offset this increase.

Modigliani and Miller (1963) conducted the second study in 1963 by correcting their original hypothesis for corporate taxes and expected cost of capital to be affected by leverage for its tax advantages. They therefore, wanted to test whether leverage had tax

advantages or not. For this, they conducted the mathematical analysis regarding the effect of leverage and other variables only because of the tax advantage involved.

Wipperfurth (1966) also conducted a study to test the empirical relationship between cost of capital and leverage. He tried to eliminate principle problem of empirical study on the leverage and attempted to offer what are hoped to be more fruitful alternatives in determining the relationship between leverage and cost of capital. He argued that the leverage either the ratio of the debt to equity at book value or at the market values, both of these measures contains important conceptual basis. He therefore, used different measures of leverage, viz. $i/e = 25$ where I is the current level of fixed charges; E is the most recent year cash flow operating income determined from a logarithmic regression of income on time over ten years period, 25 is equal to two standard error around the regression line (Wipperfurth,1966). He has also included certain variables in his test equation to account for inter firm difference. He therefore, has assumed in the past investigation that homogeneity of business risk could be achieved by comparing firm in the same industry classification.

Besides these, he employed some proxy measures based on objectively determined data and argues that the capitalization rate equals to future earnings and current market prices are not directly measurable. For the study purpose, he used the data of 50 firms from seven manufacturing industries. The years selected for the cross- section test were 1956, 1958, 1961 and 1963. He included that shareholder's wealth can be enhanced by judicious use of debt financing.

Sharma and Rao (1967) tested the MM hypothesis that after allowing for the tax advantage from the interest paid on debt the value of a firm is independent on its capital structure on the data of 30 engineering companies from Indian engineering Industry. In this cross-sectional study for the year 1963, 1964 and 1965 they concluded that debt has non tax advantages and investors prefer corporate to personal leverage. So, it can be concluded that value of a firm rises up to leverage rate considered prudent. They found the co-efficient of debt variables to be more than the corporate income tax. They introduced debt as a separate independent variable. They used two stages least square as a method of arriving at the true expected future earnings.

Rao and Lintznberges (1970) conducted the study of the effect of capital structure on the cost of capital in a less developed and less efficient capital market (India) and in a highly developed and efficient capital market (United States).

They found that the results for the American utilities are consistent to the MM proposition except for the advantages of debt financing, the cost of capital is independent of capital structure, and the results also supported that the MM hypothesis that investors are indifferent for the firm's dividend policy.

In case of Indian utilities, the results are inconsistent to the MM approach and the traditional belief, the judicious use of financial leverage will lower the firm's cost of capital and investors have a preference for current dividends. In conclusion, they

contended that the MM approach after allowing for the tax advantage of debt, the firm's cost of capital is independent to capital structure and does not appear to be the application the case of developing economy.

Pandey (1981) has tried to test the M-M approach in the developing economy by taking the sample from four different utilities, they are: cotton, chemicals, engineering, and electricity from Indian market. He made some improvement in the model derived by M-M and used multiple regression equation for the year 1968, 1969 and 1970 and for the pooled data of the three cross-section years. The improvement was made on the measurement of leverage and added earnings variability and liquidity as risk measure variable in the regression equation. Two types of leverage were used by him as follows (Pandey, 1981):

- a. The debt to total capital ratio, D/V .
- b. The debt to equity ratio, D/S .

The two ratios were measured with or without preference share capital in the debt portion. Both leverage were done on book value and included short term loan as part of leverage. He further tried to test the M-M hypothesis that the use of leverage can increase the market value of the firm to lower the cost of capital, due to the tax deductibility of interest charges. The tax adjusted stock yield is regressed with leverage and other explanatory variables. In this model, he used pooled data of three industries – cotton, chemicals, engineering and coefficient of both measure of leverage were significant and negative in sign. Therefore, the result supported the traditional belief.

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

Shrestha (1982) in his article entitled, "Analysis of capital structure in selected Public Enterprises" has concluded that the selected public enterprises under his study have a very confusing capital structure, which can be endorsed to the lack of commitment of

corporation towards its objectives based on financial plans and policies. He has also found that most of them are reluctant to eliminate debt if possible to relative financial obligation. He has suggested that the debt equity ratio should neither be highly levered to create too much financial obligation that lie beyond capacity to meet nor should it be too much low levered to introduce corporation lethargy to by pass responsibilities without performance.

Shrestha (1983) in his article, "Capital adequacy of Bank; The Nepalese context" has thrown precaution over the capital base that it should neither be too much leading to inefficient allocation of scarce resources nor so weak so as to expose to extreme risk while dealing with highly risky transactions to maintain strong capital base. He supports the fact that the operation and degree of risk associated with them are subject to change country wise, bank wise and time wise. He had suggested the banks of Nepal to adhere standard capital adequacy ratios keeping in mind various relevant factors.

Shrestha (1985) His study on "analysis of capital structure in selected public enterprises" argue that most of public enterprises have confusing capital structure since the corporation are not guided by any objectives based financial plan and policies. These corporations are using least combination of debt with equity to avoid financial burden as far as possible. According to Mr. Shrestha, the debt-equity ratio should neither be highly levered to create too much financial obligations that lie beyond capacity to meet not should be much low levered to introduce operational strategy to bypass responsibilities with out performance. He used ratio analysis as the tool of analysis of the selected public

enterprises. He further added that in many instances adhocism become the basis of capital structure and most of them want to eliminate debt if possible to relieve financial obligations.

Pradhan (1994) on his research “Financial management and practices in Nepal” found that financing decisions if not taken properly can lead to financial distress. The survey mainly deals with financial function, sources and types of financing, financing decisions involving debt effect of change in taxes on capital structure, financial distress dealing with banks and dividend policy. The major findings of study connected with financial management are given as:

-) Banks and retained earnings are the two most widely used financing sources.
-) Generally, there is no definite time to borrow the issues stocks. That is majorities of respondents are unable to predict when interest rate will be lower or rise up and are unable to predict when the stock will rise or fall.
-) The enterprises have a definite performance for bank loans at a lower level of debts.
-) Most enterprises do not borrow from one particular bank only and they do switch between banks which even offer best interest rates.
-) Most enterprises find that banks are flexible in interest rate and convenience.

2.3 Review of Thesis

Under this section, various master level dissertations related to this study, which has been done by M.B.A. students have been reviewed. These are as follows:

Baral (1996) had submitted a thesis on the topic of “Capital structure and Cost of Capital in public enterprises of Nepal.” The main objective of that study is to analyze the capital structure and cost of capital in public sector enterprises of Nepal. That study reached to a conclusion that performance of public enterprises are very poor and they are not adding the wealth of the society but diluting it, and hindering the development of the country. Furthermore, the huge amounts of adjusted losses of manufacturing and trading enterprises is quite below its cost of capital and overall cost of capital in almost all the fiscal years of the study period. Thus, it can be concluded that capital structure of enterprises in public sector in Nepal is more or less the outcome of the deliberate decision of the policy makers but not a product of market and public enterprises structures.

Regmi (1998) He had conducted study on capital structure management of NECON Air Limited. This study shows that the company is operating with debt capital relatively higher than equity capital. They need to issue more equity share or convert preference share into equity share. He further added that the company should minimize its operational cost and apply technological based management. Also, management should use competitive strategies policies to balance with its different investors as well as identify and select the based alternative finance from available fund.

Aryal (2001) had submitted a thesis study on "An evaluation of capital structure of Bottlers Nepal Limited." Objective of that study is to evaluate the capital structure of Bottlers Nepal Limited. Conclusion of that study showed bad performance of the company due to the inefficient capital structure management. The company is regarded as

highly geared up capital structured company. Thus, to design suitable pattern of capital structure for the company, the management must bring about a satisfactory compromise among these conflicting factors of cost, risk, control and timing. He recommended that the company should shift debt capital to equity capital when the company has high earning per share.

Shrestha (2003) had conducted a study on the topic “Focus on Capital Structure of Selected and Listed Public Companies”. Her objective of that study was to analyze the capital structure of selected and listed public companies. She collected data from 19 companies and her study covered different sectors from manufacturing companies to utility service oriented companies. She 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. She suggested that the government has to consider various aspects in public enterprises such as it should evaluate the relationship between use of debt and its impact on overall earning of public enterprises. So, government should be sure in deliberate use of debt capital and minimizing the cost, Government of Nepal has invested a large amount of fund in public enterprises. So, government should develop a suitable capital structure guideline to make public enterprises aware of the responsibility to repay the debt schedules. Thus, capital structure needs to be made more determinate by realistic analysis of cost.

Subedi (2005) In his thesis "A Study on Capital Structure of Nabil Bank Ltd." a study specific of objective of the capital structure of Nabil Bank Ltd. were analyzed in order to show financial position, examine the different profitability ratio and show overall trend analysis. Under this study various tools such as graph, percentage, diagram, mean, standard deviation and co-variance were used. He found and concluded that total liabilities and capital item, show the overall situation of bank which was downward sloping. Deposit had adopted a larger space in the balance sheet. Fixed deposit is taken as long term debt in the banking business. It is key determinant factor of capital structure. Debt and equity if properly utilized then optimal capital structure is formed. Price earning ratio reflects the price currently reported EPS. It measures investor's expectations and the market appraised of the performance of a firm. This study suggests, deposit is the major concern to the capital structure. It effects on investment policy. The more the fixed deposit increases, the more the long term investment becomes possible. Bank becomes more successful and competent as per its capacity to collect the fixed deposit.

Pradhan (2007) conducted a study on Capital Structure management of manufacturing companies and hotels", it found that the composition of capital structure of the concerned companies have no uniformities. The capital structure decision is not found to be considered properly by the companies. Investment and financing decision should be taken keeping the capital structure in mind. This study recommended the unlevered firms i.e. Bottlers Nepal and Unilever Nepal to use cheaper debt which may increase the value of the firm. The levered firms Hotel Shehanshah and Hotel Yak & Yeti are suggested to increase debt servicing capacity to take the benefit of leverage. To earn high level of

profit all the companies should maintain optimum level of interest rate in business. More independent variable should be adopted to capture the industry nature of Nepalese firm to better explain the variability in the profitability. Cost and benefit should be analyzed before raising fund from different sources of capital.

The study focused on the ratios of the selected organizations. The overall value of the firms can be analyzed through the size of balance sheet.

2.4 Research Gap

By the revision of above mentioned studies, it is found that different studies have been made and different areas of the studies have been covered. Some researchers have not focused on financial analysis and some other has not considered statistical analysis (correlation, simple regression analysis and multiple regression analysis). In this context, present study is different from these previous studies as I have used financial analysis and statistical analysis (correlation, simple regression analysis and multiple regression analysis) and this study is totally revolved around banking industry, which is the most important factor for economic development of country.

CHAPTER-III

RESEARCH METHODOLOGY

3.1 Introduction

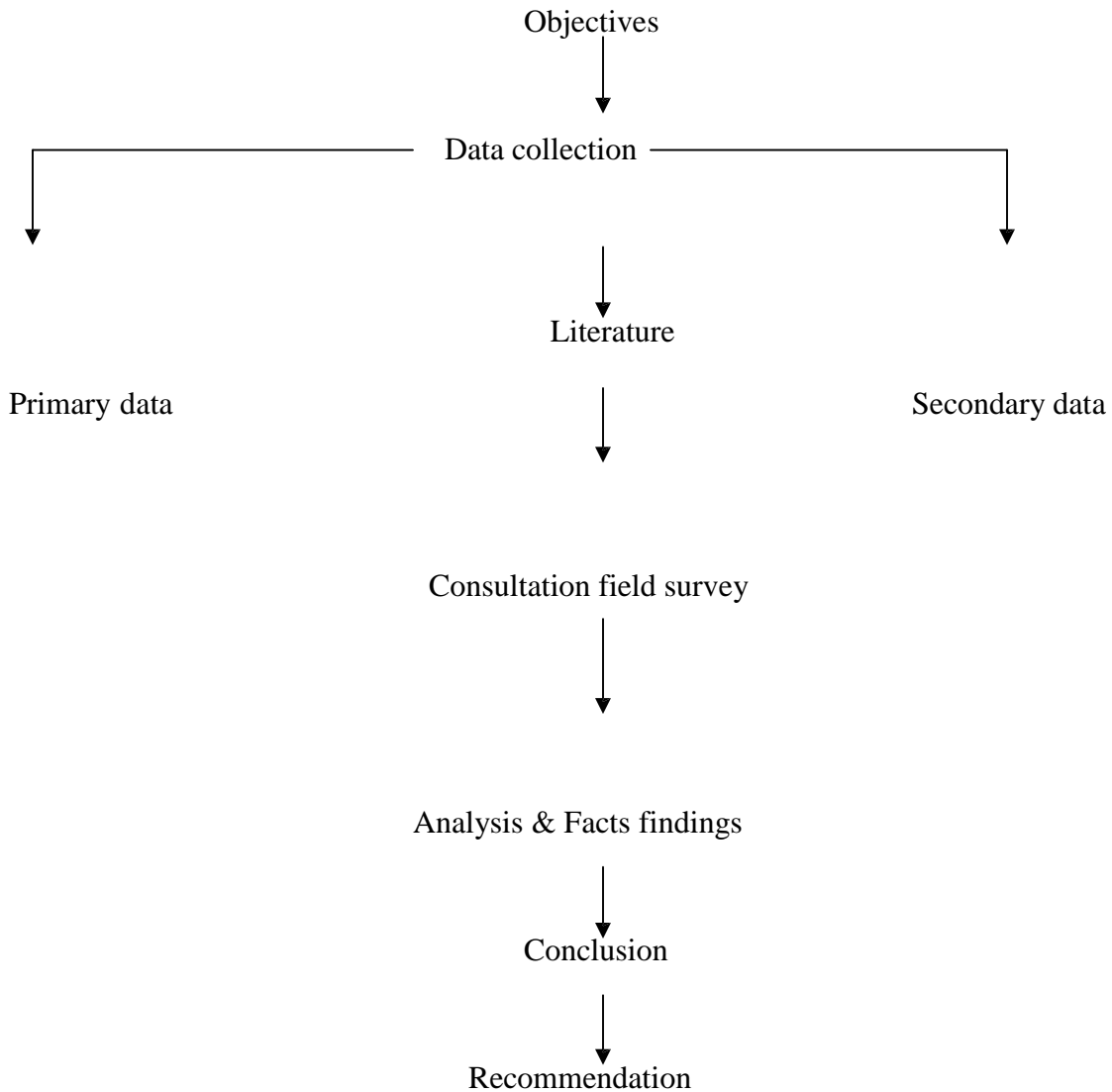
This chapter deals about research methodology which is used for research purpose. Research is a systematic enquiry for seeking facts and methodology is the method of doing research in well manner. So, research methodology means the analysis of specific topic by using proper method.

Research Methodology refers to the four various sequential steps to be adopted by a researcher in studying a problem with certain objective in view. Research methodology basically describes the methods, processes, tools and techniques applied in the entire process of a scientific research "Research is the process of systematic and in-depth study or search for any particular topic, subject or area of investigation backed by collection, presentation and interpretation of relevant details or data" (Kothari, 1984).

A research methodology helps us to find out accuracy, validity and suitability. The justification on the present study cannot be obtained without help of proper research methodology. For the purpose of achieving the objectives of study, the applied methodology will be used. The methodologies of this research include the research design, population and sample of data, nature and types of data, source of data, methods of data analysis and specification of variables.

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

Flow chart given below shows the entire methodology of this study.



Flowchart of entire methodology

3.2 Research Design

Research design is a plan, structure and strategy of investigation conceived so as to obtain answers of questions and to control variance. The analysis of this study is based on certain research design keeping in mind the objective of the study. Generally, research design means definite procedure and technique which guides in studying profound ways for research viability. The main objective of this study is to analyze and evaluate the capital structure of selected commercial bank. This study follows the analytical and descriptive research design. To complete this study following design and format has been used. First of all, information and datas are collected through various sources. The important information and data are selected. Then data is arranged by using a suitable procedure. After that data are analyzed by using different financial and statistical tools. In analysis part interpretation and feedback and recommendations are also made where ever necessary. Result and conclusion are given after analysis of data. The design has been adopted from previous research works.

3.3 Population and Sample of Data

Population is the universe about which the study has aimed to inquire and the sample is the representative of the population. Since this study is concerned with the capital structure management of the selected two commercial banks, the population for the study has, therefore been all the thirty two commercial banks which are currently in operation in our country.

For the selection of the sample from the population, judgmental sampling method has been followed. As, the study is comparative analysis of performances of the two comparable commercial banks, they are:

1. NABIL Bank Ltd.
2. Bank of Kathmandu Ltd.

3.4 Nature and Types of Data

Since, this study is basically analytical and historical on nature; most of the data are based on the past performance of the sampled commercial banks. For the purpose of the study, almost all the data used are second-hand published data of the respective banks. Such data have been derived from the financial statements of the companies concerned. Besides, that some primary data has also been collected from the officer and staffs of concerned banks.

3.5 Sources of Data

This study is related to the capital structure management; therefore the sources of data used in this study are basically of secondary nature. All the study analysis and evaluation have been based on the available annual report (Profit and loss account and balance sheet) and progress reports of the concerned banks. The other sources were Unpublished Thesis, Research Study, Several Books, Journals, Magazines and Newspapers available in different libraries. Internet can also be taken as the most integral source. Moreover, some of the data required for this study has also been obtained from the Economic Survey, publications of government of Nepal and ministry of finance, economic review,

and publications. The primary data were collected from the field visit of concerned banks but the use of these primary sources is negligible.

3.5.1 Data Gathering Procedure

After identification of the sources of data, the required data for the study have been gathered through the following procedures:

-) By obtaining the data from web site of selected banks, first of all, the financial statement and balance sheet of selected commercial banks were down loaded to the computer disk. Secondly, all the downloaded financial statements were transcribed into computer printouts and the data required for the study were taken there from.
-) For obtaining annual reports of the selected commercial banks, the authorized staffs of the respective banks were approached and required data were used selectively for the study.
-) Various thesis research of MBS students were reviewed.
-) Libraries were consulted to gather information.

3.5.2 Data Processing Procedure

Data gathered through different procedures have been further processed according to the requirements of the study. First of all the collected data were thoroughly studied to identify the required data for the study for the analytical purpose. Secondly, all the required data were extracted from those sources as per the need of the study. After that these data were used for analysis of different ratios, calculation of correlations and testing of hypothesis of both banks. For this purpose the data have been used to determine the

average return, standard deviation and coefficient of variation of NABIL and BOK. The data have also been processed for the analysis of the risks and returns of the respective banks in terms of coefficient of variance and correlation coefficient. Besides, they have been used for capital structure performance measure of the selected banks. The data have also been applied for the analysis of the risks and return of NABIL and BOK on the basis of net return. It has also been used for the purpose of hypothesis testing (i.e. testing the significance of the observed correlation coefficients and significance of the computed mean values). Further more, the collected data have been processed for the comparative analysis of the selected banks on the basis of capital adequacy risks, liquidity risks and credit risks.

3.6 Methods of Data Analysis

Although the separate sections of the techniques of analysis have not been presented in the study, the descriptive, correlation and inferential techniques of analysis have been applied from beginning to end of the study. For the purpose of descriptive analysis, risk and return of the banks under study have been analyzed on the basis of interest income and net income of the respective banks. During this course of analysis, return of the selected commercial banks along with their averages, standard deviation and coefficient of variation have been computed and arranged in the tabular form for their descriptive analysis and to observe the variability of the return over the period of the study. The risks of the selected banks have also been analyzed descriptively with respect to covariance with correlation coefficient. Descriptive analysis has also been used to analyze the risk return tradeoff of the selected banks on the basis of net return on total investments and

the capital adequacy risks, liquidity risks and credit risks of the banks under study. The technique of correlation analysis has also been applied for the study while calculating correlation coefficient of the returns of the selected banks.

3.7 Tools of Analysis

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

3.7.1 Accounting Tools

Different ratios have been used to measure the performance of the sampled banks. Ratio is the numerical relationship between two variables. It is generally expressed in percentage. It is obtained by dividing one variable to another variable and multiplied by 100. Following ratios have been calculated for the study of capital structure of these banks:

-) Debt to Equity Ratio.
-) Total Debt to Total Assets Ratio / Financial Ratio.
-) Analysis of Interest Coverage Ratio.
-) Analysis of Liquidity Ratio.
 - a) Analysis of Return on Total Assets (ROA)
 - b) Analysis of Return on Net Worth/ Return on Share holder's Equity (ROE)
 - c) Analysis of Degree of Financial Leverage.
-) Market related ratio.

- a) Earning per Share (EPS)
 - b) Dividend per Share (DPS)
 - c) Dividend Payout Ratio (DPR)
 - d) Price Earning Ratio (PE ratio)
-) Analysis of Capital Structure.
- a) Overall Capitalization Rate (Net Income Approach)
 - b) Equity Capitalization Rate (Net Operating Income Approach)
-) Analysis of Weighted Average Cost of Fund.

3.7.2 Statistical Tools

Many statistical tools are often employed in the analysis and interpretation of data is used as an aid to management and to meet the objective of the study. The statistical tools applied in this study are Expected Rate of Return, Standard Deviation, Coefficient of Variation, Karl Pearson's Coefficient of Correlation and Student's t-test. This research is related to financial subject matter, so statistical tools and formula are expressed in financial terms except correlation coefficient, coefficient of (multiple) determination (r^2) and Student's t-test.

3.7.2.1 Standard Deviation

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

Symbolically,

$$\text{Standard Deviation ()} = \sqrt{\sum_{i=1}^n p_i \times [x - E(x)]^2}$$

Where,

= The Greek Letter Sigma, which denotes the standard Deviation.

Pi = Probability distribution of ith variables for each study period.

$[X-E(X)]^2$ = Mean Deviation Squared

3.7.2.2 Coefficient of Variation

As noted above the standard deviation is the absolute measure of risk. In the case of the different mean returns, it leads to the unacceptable decision. Hence, to overcome such a problem, a standardized per unit risk can be used to measure the risk which is called Coefficient of Variation. It indicates risk per unit of average return. Variability in return (i.e. the risk) has therefore been measured by the coefficient of variation. In our study, coefficient of variation has been computed to show the Bank-wise variability or risk return relationship in respect of interest rate and rate of return on total investments. It can be computed by dividing the standard deviation by average rate of return. Symbolically,

$$\text{Coefficient of Variation (C.V.)} = \frac{\sigma X}{E(X)}$$

Where,

=Standard Deviation.

E (X) =Mean Rate of Return.

3.7.2.3 Karl Pearson's Correlation Coefficient

Correlation is defined as the 'relationship' (or association) between (among) the one dependent variable (or factor) and one (or more than one) independent variable(s) or

factor(s). In other words, correlation is the relationship between (or among) two or more variables (i.e. only one dependent variable and one or more independent variable(s)). Thus, correlation is a statistical tool, with the help of which, we can determine whether or not two or more variables are correlated and if they are correlated the degree (extent) and direction of correlation is determined. In other words, it helps in studying the covariance of two or more variables.

There are several methods of analyzing the correlation between the two variables such as, Graphic Method, Karl Pearson's Coefficient of Correlation, Concurrent Deviation Method, Least Square Method and so on. Among them, Karl Pearson's Correlation Coefficient is most wisely used method. In our study, Karl Pearson's Correlation Coefficient has been used in order to establish the relationship between the returns of NABIL and BOK.

Karl Pearson's Correlation Coefficient is denoted by the symbol r , which is mathematically defined as;

$$\text{Correlation coefficient between X and Y } r(xy) = \frac{\sum xy}{\sqrt{\sum x^2} \sqrt{\sum y^2}}$$

Where,

X and Y = variables

$r(xy)$ = correlation coefficient between variables X and Y

$\sum xy$ = summation of multiple of mean deviation of variables X and Y

$\sum x^2$ = summation of mean deviation squared of variable X

$\sum y^2$ = summation of mean deviation squared of variable Y

3.7.2.4 Coefficient of (multiple) Determination (r^2)

The coefficient of (multiple) determination is a measure of the degree of linear association or correlation between two variables one of which happens to be independent and other being depended variable(s). It measures the percentage total variation in dependent variables explained by independent variable(s). The value of the coefficient of (multiple) determination can range from zero to one (i.e. $0 < r^2 < 1$). If r^2 is equal to 0.75, it indicates that independent variables used in regression model explain 75 percentage of the total variation in the dependent variable. It is calculated as,

$$r^2 = \frac{\text{Explained Variables}}{\text{Total Variation}}$$

3.7.2.5 Student's t-Test

To test whether there is statistically significant relationship between the related variables of NABIL and BOK in terms of capital structure, profitability and associated risk. Student's t-test has been computed by applying the following

Formula:

$$t = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{s^2 \left(\frac{1}{X_1} + \frac{1}{X_2} \right)}}$$

Where,

t = Student's t-test

X1 and X2 = Expected or mean variables of NABIL and BOK

n1 = No. of observation for NABIL

n2 = No. of observation for BOK

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

Tabulated value is based on n-2 degree of freedom and 5% level of significance. If the calculated value of t exceeds the tabulated value of t at 5% level of significance and for the above mentioned degree of freedom, the null hypothesis will be rejected (or alternative hypothesis is accepted) which will imply that the value of r is significant (i.e. there is statistically significant relationship between the variables or there is statistically significant difference between the average rate of returns of the variables) and vice versa.

CHAPTER - IV

PRESENTATION AND ANALYSIS OF DATA

4.1 Introduction

In this chapter the effort has been made to analyze impact of capital structure on risk and return of commercial banks. This chapter, first proceeds with financial analysis by tabulation and then, at last, with statistical analysis. The financial analysis is done through presentation of data and calculating various financial ratios, which reflects the relationship between the variables affecting capital structure. Variables used for analysis are Long Term Debt, Total Debt, Equity Capital, EBIT, Interest, EPS, DPS, Total Assets, and Dividend Payout Ratio.

The firm should maintain a sound capital structure to run its business operation smoothly in this competitive world. Both excessive as well as inadequate capital positions are dangerous from the firm's point of view. So, an enlightened management should, therefore, maintain optimal capital structure to meet its objectives.

Based on the above mentioned variables, following ratios are computed for the purpose of this study.

1. Based on these variables, following ratios are computed.
 -) Analysis of Debt to equity Ratio.
 -) Analysis of Total Debt to Total Assets Ratio / Financial Ratio.
 -) Analysis of Interest Coverage Ratio.

J Analysis of Liquidity Ratio.

- a) Analysis of Return on Total Assets (ROA)
- b) Analysis of Return on Net Worth/ Return on Share holder's Equity (ROE)
- c) Analysis of Degree of Financial Leverage.

2. Market related ratio.

- a) Earning per Share (EPS)
- b) Dividend per Share (DPS)
- c) Dividend Payout Ratio (DPR)
- d) Price Earning Ratio (PE ratio)

3. Analysis of Capital Structure.

- a) Overall Capitalization Rate (Net Income Approach)
- b) Equity Capitalization Rate (Net Operating Income Approach)

4. Analysis of Weighted Average Cost of Fund

4.2 Analysis of Debt to Equity Ratio

The relationship between borrowed funds and owner's capital is a popular measure to the long-term financial solvency of a firm. This ratio indicates that the relative proportion of debt and equity in financing the assets of a firm. This group of ratio is intended to address the firm's long term ability to meet its obligation or more generally, its financial leverage. A higher ratio shows a large share of financing by the creditors relatively to the owners. Therefore, there is a larger claim against the assets of the firm, which is a danger signal for the creditors. Where a smaller ratios shows smaller claim of creditors. To the creditors, relatively high stake of the owners implies sufficient safety margin and

substantial protection against contraction of assets. Debt to equity ratio has been calculated as:

$$\frac{\text{Total Debt}}{\text{Shareholder's Equity}}$$

The debt –equity ratio has been presented in the table below.

Table No.4.1

Debt to Equity Ratio of NABIL Bank

(Rs. In Million)

Fiscal Year	Debt	Equity	D/E Ratio	% Change
2007/08	34695.56	2437.19	14.23	
2008/09	40737.16	3130.23	13.01	-8.57
2009/10	48315.48	3834.75	12.6	-3.15
2010/11	53527.56	4572.05	11.71	-7.06
2011/12	57796.84	5460.52	10.58	-9.65
Average			12.43	

Source: Annual Report of NABIL Bank Ltd.

Table No. 4.2

Debt to Equity Ratio of BOK

(Rs. In Million)

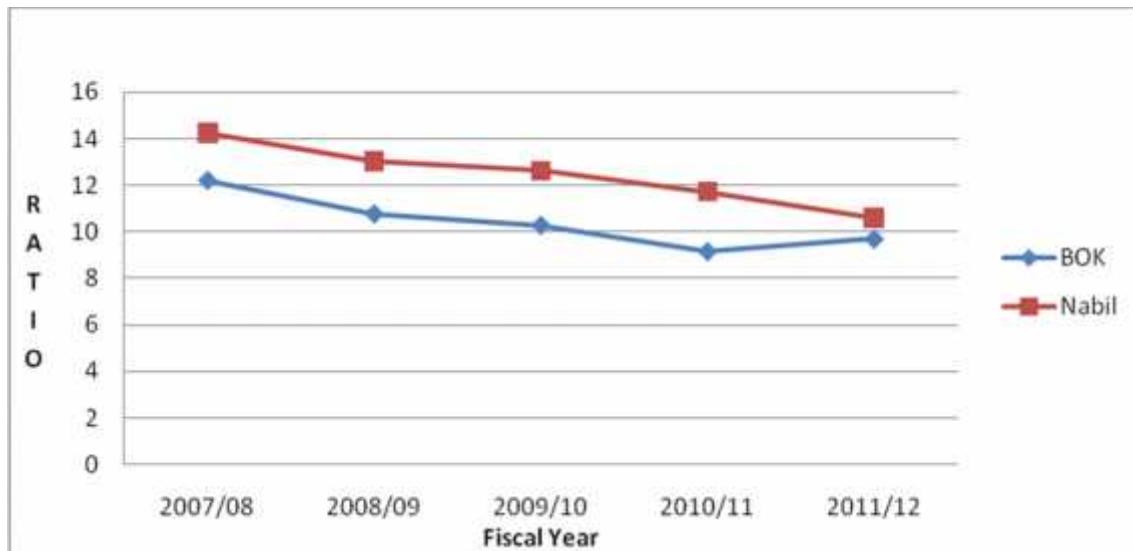
Fiscal Year	Debt	Equity	D/E Ratio	% Change
2007/08	16379.85	1342.07	12.2	
2008/09	18754.41	1741.59	10.77	11.72
2009/10	21322.67	2073.52	10.28	-4.55
2010/11	22322.56	2435.18	9.16	-10.89
2011/12	26181.16	2700.84	9.69	5.79
Average			10.42	

Source: Annual Report of Bank of Kathmandu Ltd.

The Debt to Equity ratios, calculated above, can be presented in line diagram as follows:

Figure 4.1

Debt Equity Ratio



The average debt to equity ratio of NABIL bank is higher than that of BOK. This shows creditors of BOK have less risk than the creditors of NABIL bank. After the year 2008/09 debt equity ratio of BOK is in decreasing trend. The average debt to equity ratio of NABIL is 12.43. It means debt capital financing is more than 12 times higher than shareholder's equity with the bank. Similarly, BOK has the debt to equity ratio of 10.42 and it means BOK has capital financing of more than almost 10 times higher than shareholder's equity.

4.3 Total Debt to Total Assets Ratio

Another approach to calculating the debt to capital ratio is to relate the total debt to total assets of the firm. The higher ratio indicates that bank successes in using debt to the more profitable way and also indicates about the riskier capital structure. In other words, total debt to total asset ratio shows the portion of total debt in firm's total asset, So higher ratio

indicates that the firm is using high debt in its capital structure. We can divide total asset by total debt to obtain this ratio.

Table 4.3

Total Debt to Total Asset Ratio of NABIL Bank

(Rs. In Million)

Fiscal Year	Total Debt	Total Asset	D/A Ratio	% Change
2007/08	34695.56	37132.75	93.44	
2008/09	40737.16	43867.39	92.86	-0.62
2009/10	48315.48	52150.24	92.64	-0.24
2010/11	53527.56	58141.44	92.06	-0.63
2011/12	57796.84	63200.30	91.45	-0.66
Average			92.49	

Source: Annual Report of NABIL Bank Ltd.

Table 4.4

Total Debt to Total Asset Ratio of BOK

(Rs. In Million)

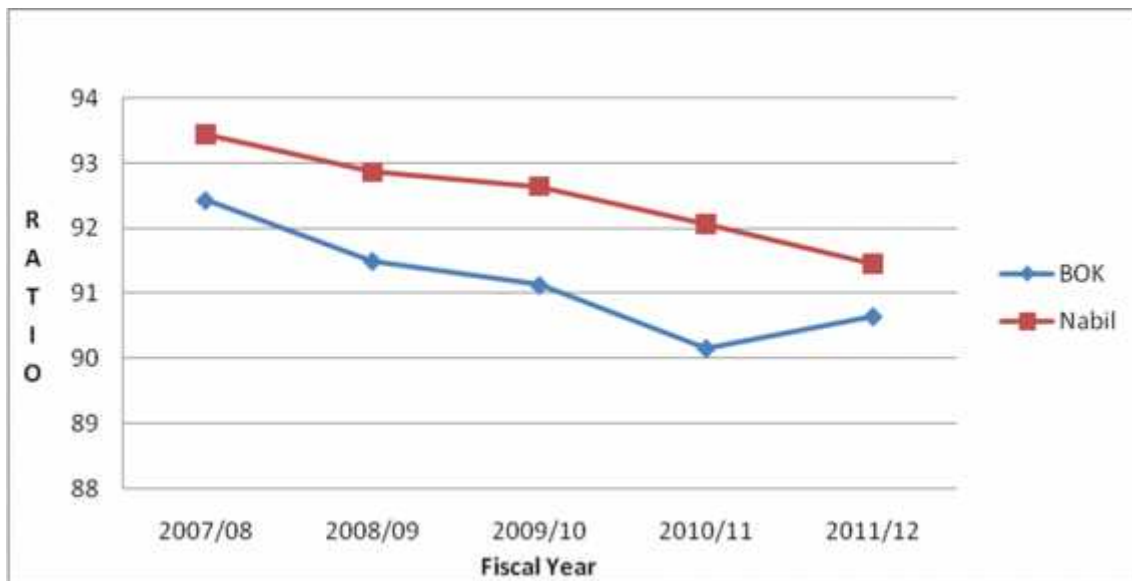
Fiscal Year	Total Debt	Total Asset	D/A Ratio	% Change
2007/08	16379.85	17721.93	92.43	
2008/09	18754.41	20496	91.5	-1.01
2009/10	21322.67	23396.19	91.13	-0.4
2010/11	22322.56	24757.75	90.16	-1.06
2011/12	26181.16	28882	90.65	0.54
Average			91.17	

Source: Annual Report of Bank of Kathmandu Ltd.

We can present above calculated D/A Ratio in a same Chart as follows:

Figure 4.2

Debt to Total Asset Ratio



The calculation shows that the share of the total assets financed by outsiders funds i.e. debt to total asset ratio of NABIL bank is higher in initial years in comparison to that of a BOK. But, after 2008/09 debt to total asset ratio of NABIL bank as well as of BOK is downward sloping. As we know that, debt to total asset ratio shows the portion of debt in total asset, here BOK and NABIL bank have average of 91.17 and 92.49 percent debt to total assets ratio respectively, in their capital structure.

4.4 Analysis of Interest Coverage Ratio (I/C Ratio)

This ratio indicates the ability of a firm to pay interest charges on its borrowed capital. It is also called “Debt Service Ratio” or “Time Interest Earned Ratio”. In order to analyze the capacity of the company, it is necessary to analyze EBIT and interest which can be analyzed through the interest coverage ratio. This ratio measures the debt servicing capacity of the firm. This is a common measure of long term solvency. It indicates the extent to which a fall in EBIT is acceptable in the sense that the ability of the firm to service its debt would not be adversely affected.

A high ratio is a sign he of low burden of borrowing of the business and lower utilization of borrowed capacity. In the opinion of creditors, debenture holders, and loan creditors the higher the coverage, the greater the ability of the firm to make payment of interest.

Interest coverage ratio can be calculated as:

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

The calculated interest coverage ratio of the sample banks are presented in the Table 4.5. and 4.6.

Table 4.5

Interest Coverage Ratio of NABIL Bank

(Rs. In Million)

Fiscal Year	EBIT	Interest Exp	I/C Ratio	% Change
2007/08	1847.42	758.43	2.43	
2008/09	2631.94	1153.28	2.28	-6.17
2009/10	3531.94	1960.1	1.82	-20.17
2010/11	4855.37	2946.69	1.65	-9.34
2011/12	5580.07	3155.49	1.77	7.27
Average			1.99	

Source: Annual Report of NABIL Bank Ltd.

Table 4.6

Interest Coverage Ratio of BOK

(Rs. In Million)

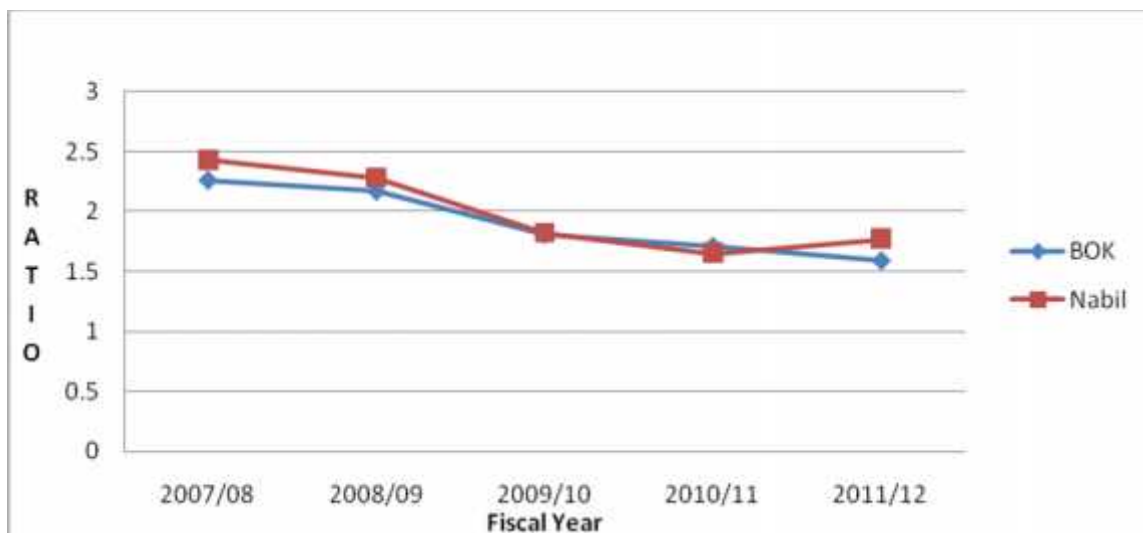
Fiscal Year	EBIT	Interest Exp	I/C Ratio	% Change
2007/08	945.44	417.54	2.26	
2008/09	1224.37	563.11	2.17	-3.98
2009/10	1634.37	902.92	1.81	-16.58
2010/11	2083.84	1218.79	1.71	-5.52
2011/12	2358.22	1484.54	1.59	-7.02
Average			1.91	

Source: Annual Report of Bank of Kathmandu Ltd.

The interest coverage ratio, calculated above can be presented in line chart as follows.

Figure 4.3

Interest Coverage Ratio



Interest coverage ratio of NABIL bank is higher than that of BOK. In the year 2007/08 NABIL Bank has I/C ratio of 2.43 times when BOK has only 2.26 times of I/C ratio. After the year 2007/08 the gap of the ratio between these two banks is narrowing. Finally in the year 2009/10 the ratios of these two banks are almost equal. The line chart clearly shows that the line of NABIL bank is falling down rapidly from the first year of the study whereas BOK's line is in slightly increasing trend. From the study of this chart we can conclude that in last five year NABIL is loosing its ability to make payment of interest but BOK is gaining the same.

4.5 Analysis of Degree of Financial Leverage

Degree of financial leverage is the percentage change in earning available to common stockholders (Earning Per Share) associated in particular percentage change in earning before interest and tax (EBIT). Whenever the percentage changes in EPS resulting from a percentage change in EBIT is greater than the percentage change in EBIT, financial leverage exists i.e when DFL is greater than one, there is financial leverage. The greater the degree of financial leverage the greater the impact of given change in EBIT on EPS. The degree of financial leverage indicates the degree of financial risk i.e. higher the value of degree of financial leverage higher will be the degree of financial risk and lower the value of degree of financial leverage lower will be the degree of financial risk. The degree of financial leverage can be calculated as:

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

The calculated degree of financial leverage of the sample banks are presented in the Table 4.7 and 4.8

Table 4.7

Degree of Financial Leverage of NABIL Bank

(Rs. In Million)

Fiscal Year	EBIT	EBT	DFL	% Change
2007/08	1847.42	1088.99	1.7	
2008/09	2631.94	1478.67	1.78	4.71
2009/10	3585.28	1625.18	2.21	24.16
2010/11	4855.37	1908.68	2.54	14.93
2011/12	5580.07	2424.58	2.30	-9.45
Average			2.11	

Source: Annual Report of NABIL Bank Ltd.

Table 4.8

Degree of Financial Leverage of BOK

(Rs. In Million)

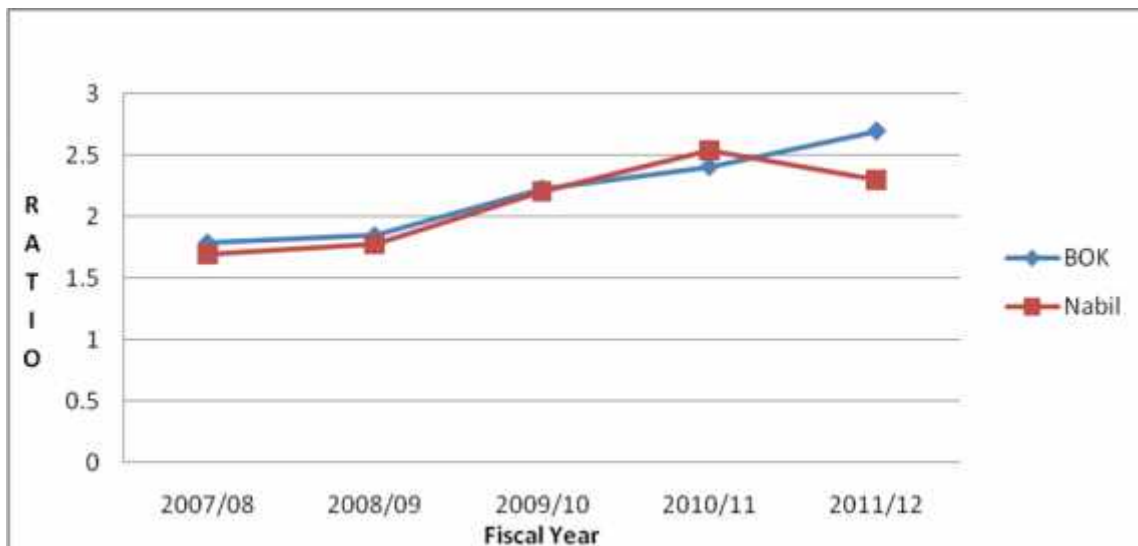
Fiscal Year	EBIT	EBT	DFL	% Change
2007/08	945.44	527.9	1.79	
2008/09	1224.37	661.26	1.85	3.35
2009/10	1634.78	731.86	2.23	20.54
2010/11	2083.84	865.05	2.41	8.07
2011/12	2358.22	873.68	2.70	12.03
Average			2.20	

Source: Annual Report of Bank of Kathmandu Ltd.

The above calculated Degree of financial Leverage can be presented in line diagram as follows.

Figure 4.4

Degree of Financial Leverage



In the above diagram, we can clearly see that degree of financial leverage of NABIL Bank is lower than that of BOK. In the year 2007/08, DFL of NABIL is 1.7 times whereas BOK has 1.79 times. After 2007/08, DFL of NABIL Bank as well as DFL of BOK is in increasing trend. We know that degree of financial leverage indicates financial risk of the company. So that, we can conclude that, in the initial years financial risk of NABIL Bank is very lower than that of BOK but in recent years, it seems almost the same.

4.6 Analysis of return on Total Asset (ROA)

This ratio establishes the relationship between net profit and total asset. This ratio is also called 'profit to asset ratio'. It is shown in percentage. Return on total assets ratio measures the profitability of bank that explains a firm to earn satisfactory return on all financial resources invested in the bank assets; otherwise its survival is endangered. The ratio explains net income for each unit of assets. Rate of return on total assets is major tool to judge the operational efficiency of bank.

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 of selected banks is given in Table 4.9 and 4.10.

Table 4.9**Return on Total Assets of NABIL Bank.**

(Rs. In Million)

Fiscal Year	EAT	Total Asset	ROA	% Change
2007/08	746.47	37132.75	2.01	
2008/09	1031.05	43867.39	2.35	-16.92
2009/10	1139.1	52150.24	2.18	-7.23
2010/11	1337.75	58141.44	2.30	5.50
2011/12	1696.28	63200.30	2.68	16.52
Average			2.30	

*Source: Annual Report of NABIL Bank Ltd.***Table 4.10****Return on Total Assets of BOK**

(Rs. In Million)

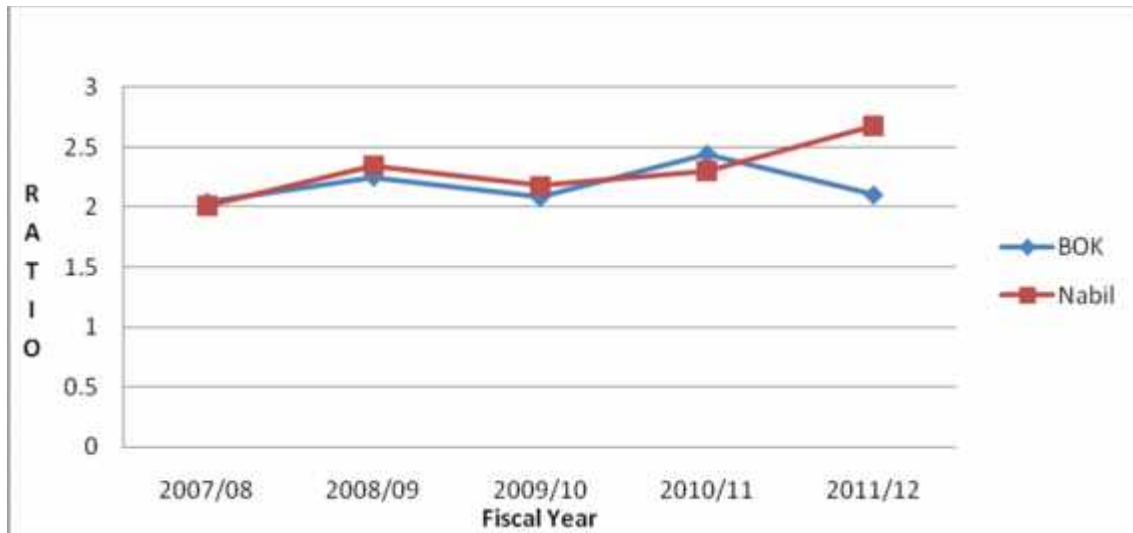
Fiscal Year	EAT	Total Asset	ROA	% Change
2007/08	361.50	17721.93	2.04	
2008/09	461.73	20496	2.25	10.3
2009/10	509.26	23396	2.08	-3.11
2010/11	605.15	24757.75	2.44	-11.92
2011/12	607.66	28882	2.10	-13.93
Average			2.18	

Source: Annual Report of Bank of Kathmandu Ltd.

Return on total asset shows the banks capacity to utilize its asset. Here, in these above two tables, if we look at the average of return on total asset we can see NABIL's average is higher than that of BOK. So, we can say that NABIL is utilizing its assets in a better way than BOK is doing.

We can show the ratio in line diagram as follows:

Figure 4.5
Return on Total Asset



In the year 2007/08 Return on total asset of NABIL is 2.01 % but in the same year BOK has 2.04% Return on total asset, which indicates that BOK is utilizing its assets in a better way. In the year 2007/08 ROA of NABIL reached to minimum at the level of 2.01% and within the study period it is upward sloping and reached to 2.68%. Unlike NABIL, BOK

has continuously increasing ROA. In 2007/08 ROA of BOK is 2.04% and it reached to 2.44% in 2010/11.

4.7 Analysis of Return on Equity (ROE)

This ratio shows the relation between the net profit after tax and shareholder's fund. The return on Shareholder's equity ratio is the measure of productivity of shareholder's funds. It carries the relationship of return to shareholder's equity. The shareholder's equity includes Common Share Capital, Preference Share Capital, and Reserve and Surplus. Management objective is to generate the maximum return on shareholder's investment. ROE is therefore the best single measure of the company's success in fulfilling its goal. This ratio is of great interest and value to the present as well as the perspective shareholders and also of great concern to management, which has the responsibility of maximizing the owner's welfare.

This ratio indicates how well the bank is using its resources contributed by the owners. It is good to the owner, if the return on investment is high. Higher ratio indicates more efficient management and utilization of shareholder's fund. The return on equity of BOK and NABIL has been presented in following tables:

Table 4.11**Return on equity of NABIL Bank**

(Rs. In Million)

Fiscal Year	EAT	Equity	ROE (%)	% Change
2007/08	746.47	2437.19	30.63	
2008/09	1031.05	3130.23	32.93	7.51
2009/10	1139.1	3834.75	29.7	-9.81
2010/11	1337.75	4572.05	29.26	-1.48
2011/12	1696.28	5460.52	31.06	6.15
Average			30.72	

*Source: Annual Report of NABIL Bank Ltd.***Table 4.12****Return on Equity of BOK**

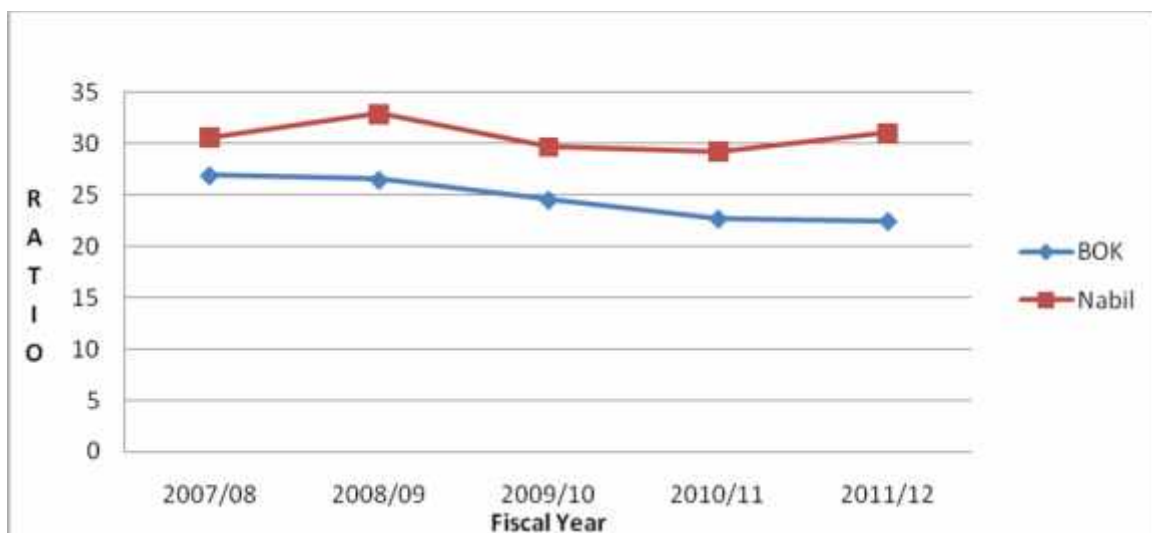
(Rs. In Million)

Fiscal Year	EAT	Equity	ROE (%)	% Change
2007/08	361.50	1342.07	26.94	
2008/09	461.73	1741.57	26.51	-1.6
2009/10	509.26	2073.52	24.56	-7.35
2010/11	605.15	2662.90	22.72	-7.49
2011/12	607.66	2700.84	22.50	-0.97
Average			24.65	

Source: Annual Report of Bank of Kathmandu Ltd.

In above table we can see that the average ROE of last five year of NABIL Bank is 30.72% and BOK has only 24.65% which means NABIL's utilization of shareholder's fund is better than that of BOK's. The ROE calculated above can be shown in above line diagram as follows:

Figure 4.6
Return on
Equity



In 2007/08 NABIL's ROE is 30.63% and BOK's ROE is 26.94%. At that time gap between these two banks was wide but in later years BOK increased its return but NABIL remained almost in same level, hence the gap is reducing. In 2008/09 both BOK and NABIL bank has its maximum return.

4.8 Market Related Ratio

In order to see market performance of the Banks (Nabil Bank and Bank of Kathmandu.) various market-related ratios are computed.

4.8 .1 Earning Per Share (EPS)

The profitability of a bank in the view of the ordinary shareholders is earning per share. This ratio explains net income for each unit of shares. Earning per share of an organization is the strength of the share in the market. As EPS does not reveal how much dividend is paid to the owners nor how much of the earnings are retained by an organization. It does not reflect how much is paid as dividend and how much is retained in the business. Thus, it only shows how much is the earning, that belongs to the ordinary shareholders. It is an important index of the bank's performance and the investors rely heavily on it for their investment decisions.

The earning per share is calculated by dividing the earning after tax (EAT) by the total numbers of common shares. The formula for calculating this ratio is:

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

Earning per share of NABIL and BOK is presented in the table below.

Table 4.13**Earning Per Share of NABIL Bank**

Fiscal Year	EAT (in million)	No of Shares	EPS (Rs.)	% Change
2007/08	746.47	6892160	108.76	
2008/09	1031.05	9657470	106.76	-1.042
2009/10	1139.1	14491240	78.61	-26.18
2010/11	1337.75	20297694	65.91	-16.15
2011/12	1696.28	20297694	83.57	26.79
Average			88.72	

Source: Annual Report of NABIL Bank Ltd.

Table 4.14**Earning Per Share of BOK**

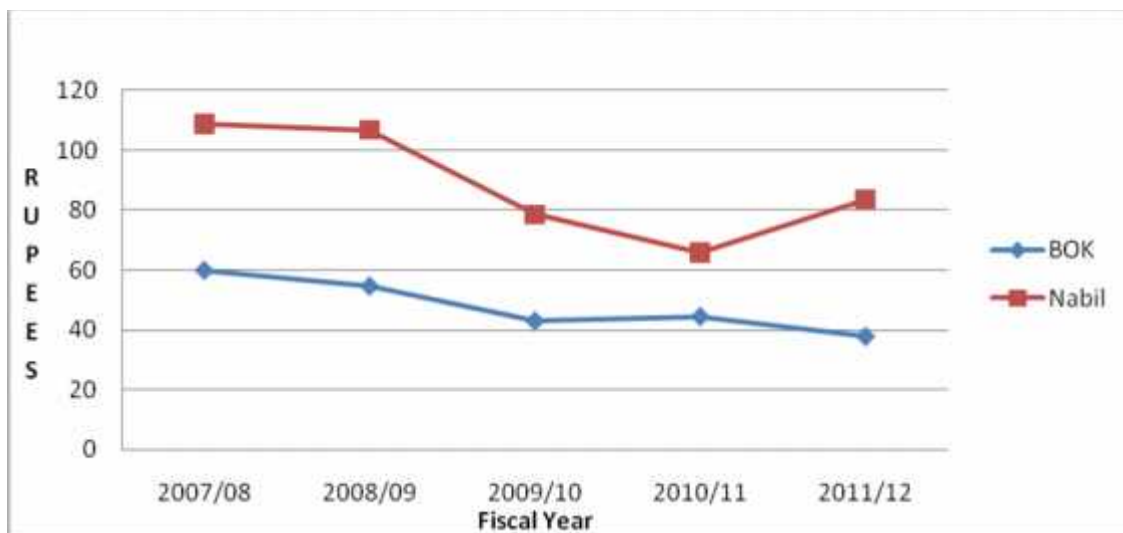
Fiscal Year	EAT (in Million)	No of Shares	EPS (Rs.)	% Change
2007/08	361.50	6031413	59.94	
2008/09	461.73	8443979	54.68	-8.78
2009/10	509.26	11821571	43.08	-21.21
2010/11	605.15	13594807	44.51	3.31
2011/12	607.66	16041873	37.88	-14.90
Average			48.02	

Source: Annual Report of Bank of Kathmandu Ltd.

Earnings per share are the rupee earned by one unit of share in an economic year. Higher the EPS higher may be the dividend per share, so it is good to have higher EPS for share holders.

Earning per share of BOK and NABIL is presented below, in the diagram.

Figure 4.7
Earning Per Share



From the year 2007/08 to 2011/12, every year EPS of NABIL bank and of BOK is in decreasing trend. NABIL's highest EPS is Rs. 108.76 in 2007/08 and lowest is Rs. 65.91 in 2010/11. At the beginning of the study period EPS was at its maximum while from the second year it is in its decreasing trend. Average earning per share of NABIL is Rs. 88.72. So, we can say it a good earning.

Earning per share of BOK is very low in comparison to NABIL bank. In 2007/08 BOK earned Rs. 59.94 per share which is the highest earning per share. From the year 2007/08 to 2011/12, the earning per share of BOK is in fluctuating trend. The average EPS of BOK is only Rs. 48.02 which is very low in comparison to NABIL bank.

4.8.2 Dividend Per Share (DPS)

The entire amount of earning may or may not be distributed to shareholders by a company. The portion of earning that is distributed to shareholders is called dividend. Dividend per share is evaluated to know the share of dividend that the shareholder's 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 earning per share. Therefore, an institution offering a high dividend per share is regarded as an efficient organization in fulfilling shareholder's expectation, which will also enable to increase the value of an institution.

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

$$\text{DPS} = \frac{\text{Earning Paid to Shareholders or Dividend}}{\text{No. of Ordinary Shares}}$$

Dividend per share of these two banks for the study period is presented in the table below:

Table 4.15**Dividend Per Share NABIL Bank**

Fiscal Year	Dividend(in Million)	No of Shares	DPS	% Change
2007/08	413.53	6892160	60	
2008/09	338.87	9657470	35.08	-41.53
2009/10	434.74	14491240	30	-14.48
2010/11	608.93	20297694	30	0
2011/12	811.91	20297694	40	33.33
Average			39.01	

Source: Annual Report of NABIL Bank Ltd.

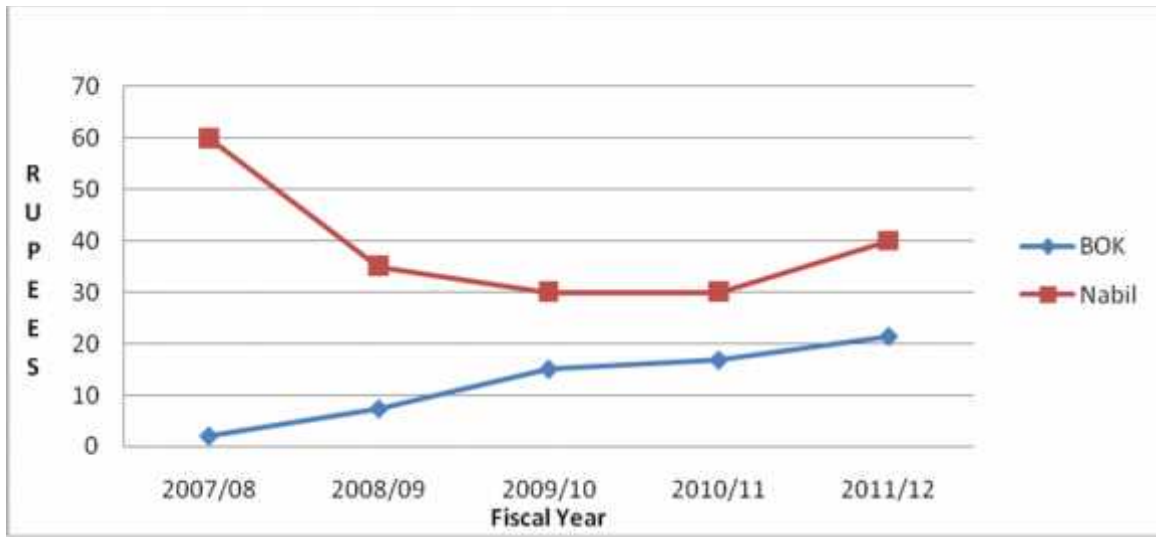
Table 4.16**Dividend Per Share Of BOK**

Fiscal Year	Dividend(in million)	No of Shares	DPS	% Change
2007/08	12.7	6031413	2.11	
2008/09	62.22	8443979	7.36	248.82
2009/10	117.32	11821571	15	103.8
2010/11	227.71	13594807	16.75	11.67
2011/12	342.01	16041873	21.32	27.28
Average			12.51	

Source: Annual Report of Bank of Kathmandu Ltd.

Above calculated DPS can be shown in line diagram as follows.

Figure 4.8
Dividend Per Share



In above diagram we can see high difference in DPS between the two banks. NABIL has distributed much of its earning as dividend, though it is not so constant. In 2007/08 DPS of NABIL was Rs.60 which is the maximum in the five years time period. But, after that year it started to decline and reached to Rs. 30 in the year 2010/11. In comparison to NABIL, BOK has very low DPS. In 2007/08 BOK has distributed only 2.11 rupees as dividend to its shareholders. BOK has its highest DPS in the year 2011/12.

In above diagram we can see that in later year banks are reducing their DPS. Not only BOK and NABIL are doing so, almost all commercial banks are reducing their cash

dividend. Commercial banks are announcing high stock dividend to increase their total capital to meet Nepal Rastra Bank's rule.

4.8.3 Dividend Payout (DP) Ratio

Dividend payout ratio represents the percentage of the profit distributed as dividend and percentage retained as revenue and surplus for the growth of the bank. The shareholders prefer usually higher ratio whereas a very high ratio may slow down the growth rate of the firm. It helps to segregate the proportion of dividend and retained earnings. DPR shows its ability to state the dividend policy of the concerned banks. It also influences the market value of the share.

The purpose of calculating this ratio is to know the portion of dividend distributed out of total earning. This ratio shows the relation between the returns belonging to equity shareholders and the dividend paid to them. It can be calculated as under.

$$\text{DPR} = \frac{\text{Divident Pershare}}{\text{Earning Per share}} \times 100$$

Dividend payout ratio of these sample banks is presented below.

Table 4.17

Dividend Payout Ratio NABIL Bank

Fiscal Year	DPS (Rs.)	EPS (Rs.)	DP Ratio	% Change
2007/08	60	108.3	55.4	
2008/09	35.08	106.76	32.86	-40.69
2009/10	30	78.61	38.16	16.13
2010/11	30	70.67	42.45	11.24
2011/12	40	83.57	47.86	12.74

Average			43.35	
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Source: Annual Report of NABIL Bank Ltd

Table 4.18

Dividend Payout Ratio BOK

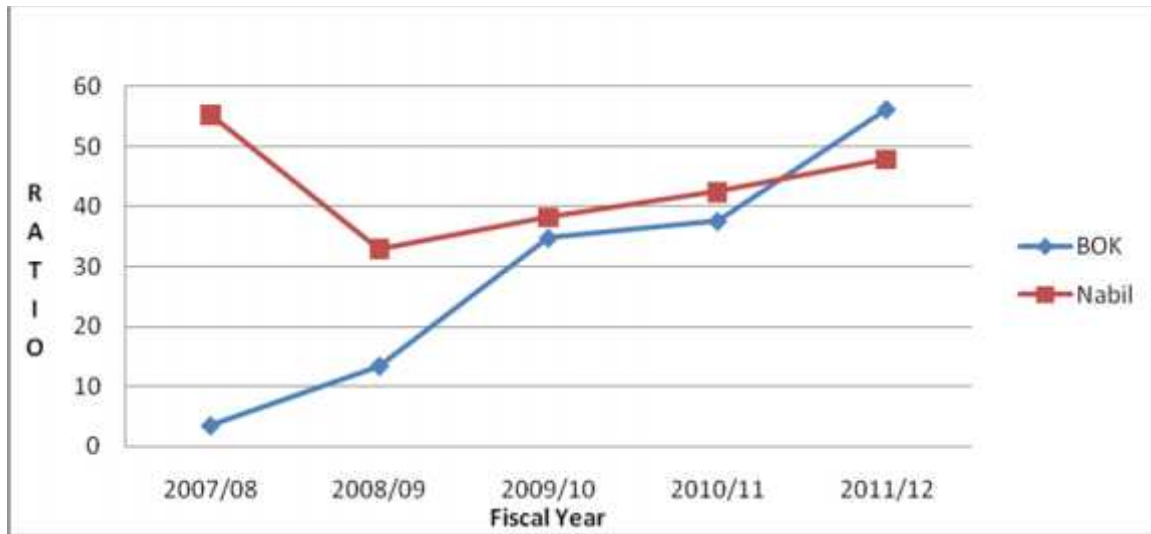
Fiscal Year	DPS (Rs.)	EPS (Rs.)	DP Ratio	% Change
2007/08	2.11	59.94	3.52	
2008/09	7.36	54.68	13.46	282.39
2009/10	15	43.08	34.81	158.62
2010/11	16.75	44.51	37.63	8.10
2011/12	21.32	37.88	56.28	49.56
Average			29.14	

Source: Annual Report of Bank of Kathmandu Ltd.

Above calculated DP-Ratio can be presented in line Diagram as follows:

Figure 4.9

Dividend Payout Ratio



Above diagram shows that NABIL bank has higher DP-Ratio than that of BOK. BOK's Dividend Payout Ratio is very fluctuating. In 2007/08 DP Ratio is only 3.52% whereas in the year 2011/12 it is 56.28 % which is it's maximum. Only 3.52 % DP-Ratio in the year 2007/08 indicates that BOK retained large portion of its earning as retained earning. In comparison to BOK, NABIL have stability in dividend payout. In 2007/08 DP-Ratio of NABIL is 55.4%. NABIL has maximum dividend payout in year 2007/08, but after that it also gradually cut-off dividend payout ratio and in year 2008/09 it reached to 32.86 % but in the last year it again increased its DPS and reached to 47.86%

4.8.4 Price Earning Ratio (PE Ratio)

Price earning ratio reflects the price currently being paid by the market for the each rupees of currently reported EPS. In other words, it measures investor expectations and the market appraisal of the performance of a firm. It is an indication of the way investors think that the banks would perform better in the future. Higher market price suggest that

investor expect earning to grow and this gives a high P/E implies that investor feel that earning are not likely to rise.

Price earning ratio is calculated as below:

$$\text{P/E Ratio} = \frac{\text{Market Price of a Share}}{\text{Earning Per Share}}$$

The ratio of NABIL and BOK is presented below:

Table 4.19

Price Earning Ratio of NABIL Bank

Fiscal Year	MPS(Rs.)	EPS(Rs.)	P/E Ratio	% Change
2007/08	5275	108.31	48.7	
2008/09	4899	106.76	45.89	-5.17
2009/10	2384	78.61	30.33	-33.91
2010/11	1252	70.67	17.72	-41.57
2011/12	1355	83.57	16.21	-8.52
Average			31.77	

Source: Annual Report of NABIL Bank Ltd.

Table 4.20

Price Earning Ratio of BOK

Fiscal Year	MPS(Rs.)	EPS(Rs.)	P/E Ratio	% Change
2007/08	2350	59.94	39.21	
2008/09	1825	54.68	33.38	-14.87
2009/10	840	43.08	19.49	-41.61
2010/11	570	44.51	12.81	-34.27
2011/12	628	37.88	16.58	29.43
Average			24.29	

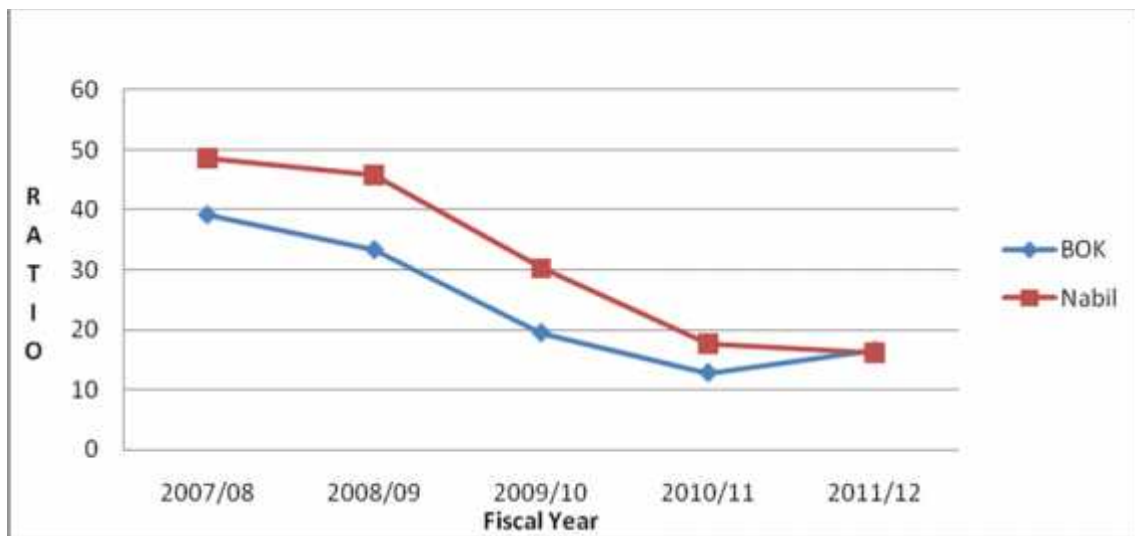
Source: Annual Report of Bank of Kathmandu Ltd.

In above tables we can see that P/E ratios of these two banks are not similar. The average P/E ratio of NABIL is 31.77 and the average of BOK is 24.29. High P/E ratio indicates that price of the company' common stock is relatively expensive as compared to its earning so, smaller P/E ratio is preferred by investors so in such case BOK's common stocks are attractive to investors than that of NABIL.

Above calculated P/E Ratio can be presented in line diagram as follows:

Figure 4.10

P/E Ratio



In above diagram it is clearly seen that up to the year 2007/08 P/E ratio of both banks are maximum and in the last two years the ratio are in decreasing trend. In the year 2007/08 Both banks have highest of their P/E ratio. In 2007/08 NABIL has P/E ratio of 48.7 and BOK has 39.21. The gap in P/E ratio between these two banks is widening every year. In 2007/08 gap of P/E ratio was nominal but in later years gap is clear and remarkable.

4.9 Analysis of Capital Structure

The analysis of Capital Structure concept is very important for this study. When debt and equity are properly mixed, it minimizes the cost of capital and maximizes the value of the firm. In order to analyze the value of the banks, fixed deposits and equity share capitals are taken into consideration. Net income approach is considered to find out the overall capitalization rate of the banks. In order to analyze the capital structure management of the banks, the value of the firm is calculated as below,

The value of firms is determined by adding debt & equity.

Value of Firm = Total Debt + Total Equity

$V = TD + TE$

The Value of the firm of NABIL and BOK is presented below:

Table 4.21

Value of the Firm of NABIL Bank

(Rs. In Million)

Fiscal Year	Total Debt (Rs)	Total Equity (Rs)	Value of Firm
2007/08	34695.56	2437.19	37132.75
2008/09	40737.16	3130.23	43867.39
2009/10	48315.48	3834.75	52150.23
2010/11	53527.56	4572.05	58099.61
2011/12	57796.84	5460.52	63257.36

Source: Annual Report of NABIL Bank Ltd.

Table 4.22

Value of the firm of BOK

(Rs. In Million)

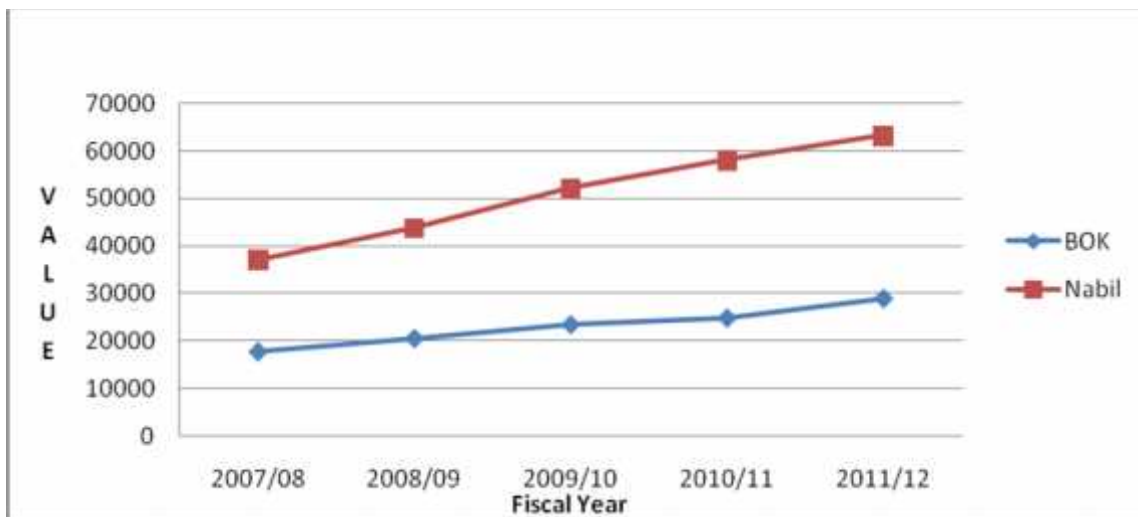
Fiscal Year	Total Debt (Rs)	Total Equity (Rs)	Value of Firm
2007/08	16379.85	1342.07	17721.92
2008/09	18754.41	1741.59	20496
2009/10	21322.67	2073.52	23396.19
2010/11	22322.56	2431.19	24753.75
2011/12	26181.16	2700.84	28882

Source: Annual Report of Bank of Kathmandu Ltd.

The value of the firm of these two banks can be shown in the diagram as below:

Figure 4.11

Value of the Firm



Value of the firm is simply the sum of total debt and total equity. Both the banks have continuously increasing value since the year 2007/08. In 2007/08 value of the firm of NABIL bank was 37,132.75 and now reached to 63,257.36. Similarly in 2007/08 value of firm of BOK was 17,721.92 and it reached to 28,882.00 in 2011/12. Value of the firm of NABIL is increasing in higher ratio than that of BOK thus, the difference of value of these banks is increasing every year.

Now, we can calculate Capital Structure of the Overall Capitalization of the Banks by considering both NI and NOI approach.

- a. Net Income Approach (NI)
- b. Net Operating Income (NOI)

a. Net Income Approach

The overall capitalization rate is calculated under Net Income approach, which measures the degree of leverage of the firm. This approach assumes that the cost of debt is less than cost of equity. So, if the degree of financial leverage is increased the weighted average cost of capital will decline, as a result value of the firm will increase. The higher use of cheaper debt lowers the cost and consequently increases the value.

Overall capitalization rate under NI Approach is calculated as:

$$KO = \frac{EBIT}{\text{Value of the firm}}$$

Overall capitalization rate of NABIL and BOK is calculated as under:

Table 4.23

Overall Capitalization Rate of NABIL Bank

(Rs. In Million)

Fiscal Year	EBIT	Value of Firm (Rs)	Ko
2007/08	1847.43	37132.75	4.98
2008/09	2631.94	43867.39	6
2009/10	3585.28	52150.23	6.89
2010/11	4855.37	58099.61	8.36
2011/12	5580.07	63257.36	8.82
Average			7.01

Source: Annual Report of NABIL Bank Ltd.

Table 4.24

Overall Capitalization Rate of BOK

(Rs. In Million)

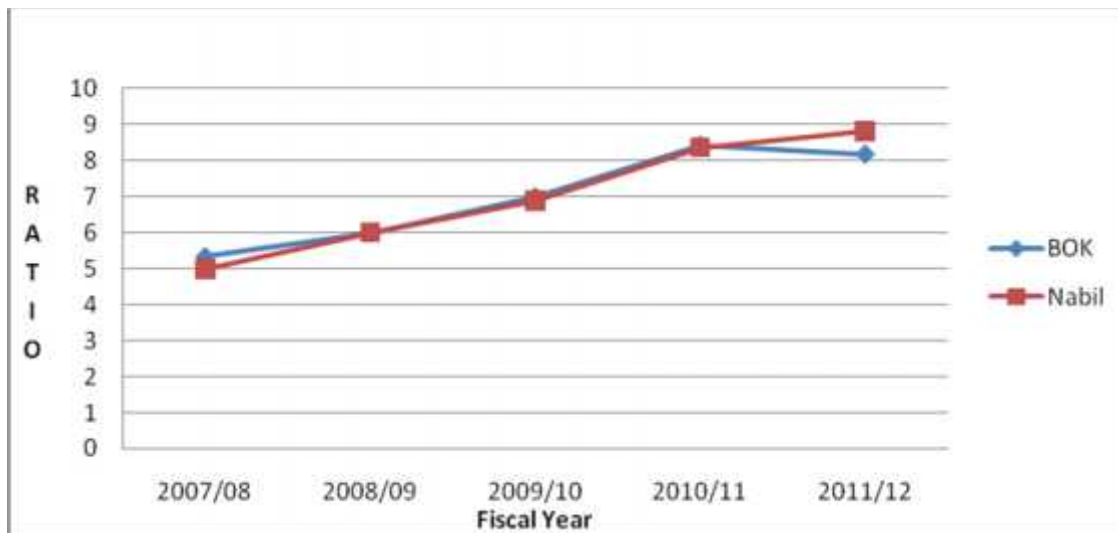
Fiscal Year	EBIT	Value of Firm (Rs)	Ko
2007/08	945.44	17721.92	5.33
2008/09	1224.37	20496	5.98
2009/10	1634.78	23396.19	6.99
2010/11	2083.84	24753.75	8.42
2011/12	2358.22	28882	8.17
Average			6.98

Source: Annual Report of Bank of Kathmandu Ltd.

The overall capitalization rate of BOK and NABIL can be shown is line diagram as follows:

Figure 4.12

Overall Capitalization Rate



In above diagram we can clearly see that overall capitalization rate of both bank is in the range of 4 to 9 percent. Highest capitalization rate of BOK is 8.42% in year 2010/11 and lowest 5.33% in 2007/08. Overall capitalization rate of BOK is not so fluctuating where as NABIL's capitalization rate is some way in fluctuating. NABIL's highest capitalization rate is 8.82 % in year 2011/12 and lowest 4.98% in year 2007/08.

b. Net Operating Income

The net operating income approach focuses on the equity capitalization rate and appears as irrelevancy theory of capital structure as mentioned earlier. According to this approach

overall capitalization rate, k_0 as well as the debt capitalization rate K_i are independent. However, the equity capitalization rate, k_i increases linearly with the financial leverage. Equity capitalization rate is obtained simply by dividing the earning before tax by market value of firm. Market value of firm can be obtained by multiplying numbers of share and market price of shares. Thus, under Net Operating Income approach the equity capitalization is calculated as follows:

$$K_e(\text{NOI}) = \frac{\text{EBT}}{\text{Market Value of the firm}}$$

Table 4.25

Equity Capitalization Rate (K_e) under NOI Approach of NABIL Bank

(Rs. In Million)

Fiscal Year	EBT	Market Value of Firm (Rs)	$K_e(\text{NOI})$
2007/08	1088.99	36356.14	3
2008/09	1478.67	47311.9	3.13
2009/10	1625.18	34547.16	4.7
2010/11	1908.68	25412.71	7.51
2011/12	2424.58	27503.37	8.82
Average			5.43

Source: Annual Report of NABIL Bank Ltd.

Table 4.26

Equity Capitalization Rate (Ke) under NOI Approach of BOK

(Rs. In Million)

Fiscal Year	EBT	Market Value of Firm(Rs)	Ke (NOI)
2007/08	527.9	14173.82	3.72
2008/09	661.26	15410.26	4.3
2009/10	731.86	9930.12	7.37
2010/11	865.05	7749.04	11.16
2011/12	873.68	10074.30	8.67
Average			7.04

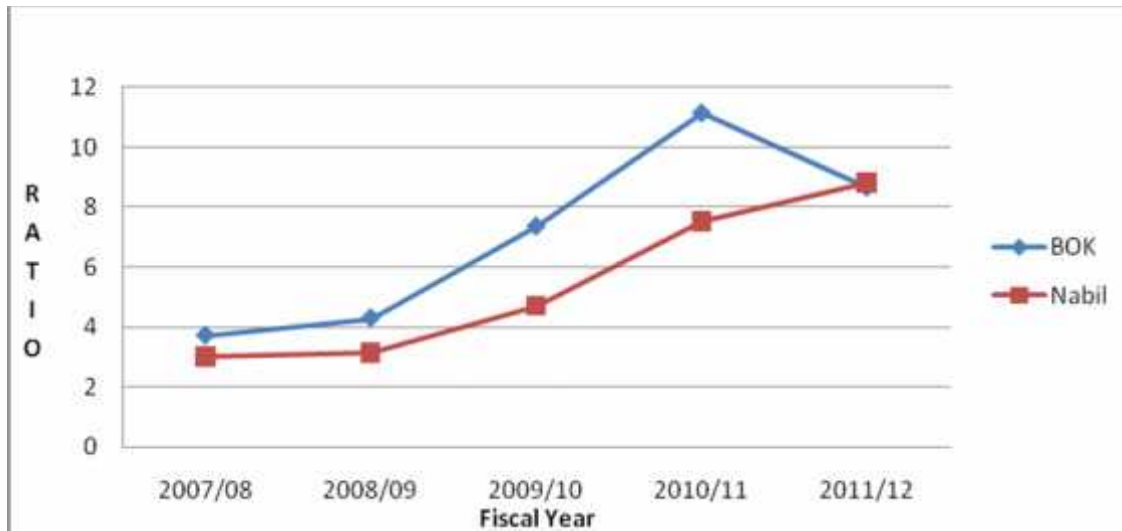
Source: Annual Report of Bank of Kathmandu Ltd.

Equity capitalization rate of both banks is increasing in recent years. In recent years MPS of both bank is increasing as a result market value of the firm is increasing. Since, equity capitalization rate (Ke) under NOI approach is obtained by simply dividing the earning before tax by market value of firm, Ke (NOI) is decreasing as Market value of the firm is increasing.

Equity capitalization rate (Ke) under NOI approach obtained above can be presented in the diagram below:

Figure 4.13

Equity Capitalization Rate



In this diagram, we can easily find that equity capitalization rate of both banks is in increasing trend. In the year 2007/08 equity capitalization rate of BOK is 3.72% which is the lowest of the study period. Similarly, in the case of NABIL bank the equity capitalization rate is only 3%. Here, both banks have similar trend in movement of ratio.

4.10 Weighted Average Cost of Fund

Every organization uses different source to raise fund. Total funds of banks and financial institutes can be broadly classified as debt and equity portion. Banks and financial institutes use large portion of debt in their total fund because it is the cheapest source to them. Banks collect large amount of deposit from public and pay certain amount of interest to depositor so in comparison to trading or manufacturing industries cost of debt is very low in banks and financial institution.

For the purpose of this study, actual cost of fund is calculated so actual amount of interest and dividends are being used to calculate the component cost of fund. Cost of debt and equity of both banks are calculated separately. Weights of debts and equity of both banks are also calculated and then weighted average cost of fund has been calculated. Cost of debt is the percentage of interest to total debt and tax rate is 30 %. Similarly cost of equity is the percentage of dividend paid to total equity.

Table 4.27
Cost of Debt of BOK

(Rs In Million)

Year	Total Debt (Rs.)	Interest Paid (Rs.)	cost of debt before tax (K_d) (%)	cost of debt after tax (K_{dt}) (%)
2007/08	16379.85	417.54	2.55	1.79
2008/09	18754.85	563.11	3	2.1
2009/10	21322.67	902.92	4.32	3.02
2010/11	22322.56	1218.79	5.46	3.88
2011/12	26181.16	1484.54	5.67	3.97

Source: Annual Report of Bank of Kathmandu Ltd.

Table 4.28**Cost of Equity of BOK**

(Rs In Million)

Year	Total Equity (Rs.)	Divident Paid (Rs.)	Cost of Equity(K_e) (%)
2007/08	1342.07	12.7	0.95
2008/09	1741.59	62.22	3.57
2009/10	2073.52	117.32	5.66
2010/11	2431.19	227.71	9.37
2011/12	2700.84	342.01	12.66

*Source: Annual Report of Bank of Kathmandu Ltd.***Table 4.29****Weights of Debt and Equity of BOK**

(Rs In Million)

Year	Total Capital (Rs.)	Total Debt (Rs.)	Total Equity (Rs.)	Weight of Debt (W_d)	Weight of Equity (W_e)
2007/08	17721.92	16379.85	1342.07	0.92	0.08
2008/09	20496	18754.85	1741.59	0.92	0.08
2009/10	23396.19	21322.67	2073.52	0.91	0.09
2010/11	24757.75	22322.56	2431.19	0.90	0.10
2011/12	28882	26181.16	2700.84	0.91	0.09

Source: Annual Report of Bank of Kathmandu Ltd.

Table 4.30**Cost of Debt of NABIL Bank**

(Rs In Million)

Year	Total Debt (Rs.)	Interest Paid (Rs.)	cost of debt before tax (K_d) (%)	cost of debt after tax (K_{dt}) (%)
2007/08	34695.56	758.43	2.19	1.53
2008/09	40737.16	1153.28	2.83	1.98
2009/10	48315.48	1960.1	4.06	2.84
2010/11	53527.56	2955.43	5.52	3.86
2011/12	57796.84	3155.49	5.46	3.82

*Source: Annual Report of NABIL Bank Ltd.***Table 4.31****Cost of Equity of NABIL Bank**

(Rs In Million)

Year	Total Equity (Rs.)	Divident Paid (Rs.)	Cost of Equity(K_e) (%)
2007/08	2437.19	413.53	16.97
2008/09	3130.23	338.87	10.83
2009/10	3834.75	434.74	11.34
2010/11	4572.05	608.93	13.32
2011/12	5460.52	811.91	14.87

Source: Annual Report of NABIL Bank Ltd.

Table 4.32**Weights of Debt and Equity of NABIL Bank**

(Rs In Million)

Year	Total Capital (Rs.)	Total Debt (Rs.)	Total Equity (Rs.)	Weight of Debt (W_d)	Weight of Equity (W_e)
2007/08	37132.75	34695.56	2437.19	0.93	0.07
2008/09	43867.37	40737.16	3130.23	0.93	0.07
2009/10	52150.23	48315.48	3834.75	0.93	0.07
2010/11	58141.44	53527.56	4572.05	0.92	0.08
2011/12	63200.30	57796.84	5460.52	0.91	0.09

Source: Annual Report of NABIL Bank Ltd

In above tables cost of debt and equity and their weights have been calculated. Now using these data weighted average cost of fund is calculated.

Table 4.33**Weighted Average Cost of Fund (WACF) of BOK**

Year	K_{dt} (%)	W_d	K_e (%)	W_e	WACF (%)
2007/08	1.79	0.92	0.95	0.08	1.72
2008/09	2.1	0.92	3.57	0.08	2.22
2009/10	3.02	0.91	5.66	0.09	3.26
2010/11	3.88	0.90	9.37	0.10	4.43
2011/12	3.97	0.91	12.66	0.09	4.75

Table 4.34

Weighted Average Cost of Fund (WACF) of NABIL Bank

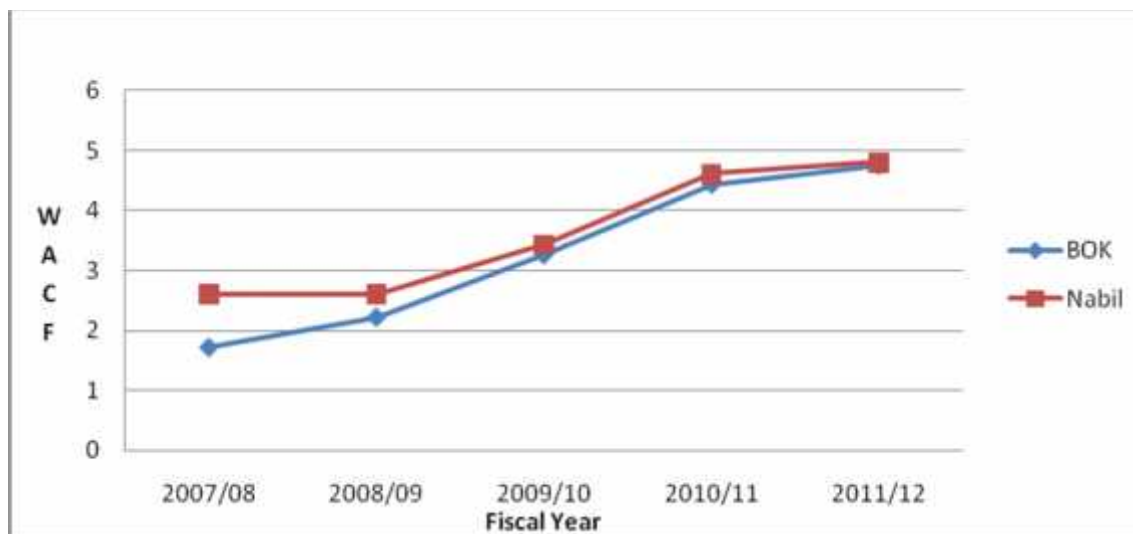
Year	K _{dt} (%)	W _d	Ke (%)	We	WACF (%)
2007/08	1.53	0.93	16.97	0.07	2.61
2008/09	1.98	0.93	10.83	0.07	2.60
2009/10	2.84	0.93	11.34	0.07	3.44
2010/11	3.86	0.92	13.32	0.08	4.61
2011/12	3.82	0.91	14.87	0.09	4.81

Weighted Average Cost of Fund (WACF) = $(K_{dt} * W_d + Ke * We)$

Above calculated weighted average cost of fund can be shown id figure as follows:

Figure 4.14

Weighted Average Cost of Fund (WACF)



This diagram clearly shows that WACF of NABIL is higher than that of BOK in every year. In 2007/08 NABIL has WACF of 2.61% and BOK has 1.72%. After 2007/08

WACF of both banks is in increasing trend. In recent year, market liquidity problem is increasing and thus banks are bound to increase the interest on their deposits so cost of fund is increasing.

4.11 Statistical Analysis

This analysis consists of some statistical tools, which are used to analyze the data to achieve the objectives of the study. Such statistical tools are Karl Pearson's correlation coefficient, multiple regression and student t-test.

4.11.1 Coefficient of Correlation between EBIT and Interest Payment

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

Table 4.35

Coefficient of Correlation between EBIT and Interest Payment of NABIL Bank

r	r²	P.E.	P.E.*6	Relationship	Level of Significance
0.993	0.986	0.004	0.024	Positive	Significant

Table 4.36

Coefficient of Correlation between EBIT and Interest Payment of BOK

r	r²	P.E.	P.E.*6	Relationship	Level of Significance
0.997	0.99	0.003	0.018	Positive	Significant

Form the Table analysis; it's clear that the correlation between EBIT and interest payment in case of NABIL is .993 and BOK is .997 which showed positive relationship. It shows that increase in EBIT, increases interest payment. On the other hand, the correlation between EBIT and interest payment of both banks are highly positive. Considering the probable error (P.E.), the value of 'r' is greater than six times of the probable error. Therefore, it is depicted that the value of 'r' in banks is significant, i.e. there is significant relationship between EBIT and interest payment. It shows that the selected banks are significantly able to enhance their debt.

4.11.2 Coefficient of Correlation between Overall Capitalization Rate (Ko) and Debt-Equity Ratio (D/E Ratio)

Correlation of coefficient between overall capitalization rate (X) and debt-equity ratio (Y) in terms o total debt to net worth is calculated in order to measure whether increase in the debt-equity ratio decreases overall capitalization rate of the banks or not. Applying Karl Pearson's correlation coefficient, following result is obtained.

Table 4.37

Coefficient of Correlation between Ko and D/E ratio of NABIL bank

r	r²	P.E.	P.E.*6	Relationship	Level of Significance
-1	1	0	0	Negative	Insignificant

Table 4.38

Coefficient of Correlation between Ko and D/E ratio of BOK

r	r²	P.E.	P.E.*6	Relationship	Level of Significance
-0.954	0.911	0.026	0.156	Negative	Insignificant

Table shows the correlation coefficient between overall capitalization rate and debt equity of selected banks over the study period. Here, correlation coefficient of NABIL and BOK are -1 and -0.954 respectively. Correlation coefficient of NABIL and BOK shows highly negative relationship i.e., increase in debt capital portion in capital structure highly decreases overall capitalization rate. Correlation coefficient of selected banks i.e. 'r' is less than six times of P.E. and the relationship of ko and D/E ratio is insignificant.

4.11.3 Coefficient of Correlation between Return on Equity (RoE) and Debt-Equity Ratio

The correlation between ROE (Y) and DER(X) is analyzed in order to know whether increase in debt capital portion in the capital structure increase return on equity or not. Positive values show positive relation and negative values shows the negative relation. The following result is obtained for NABIL and BOK.

Table 4.39

Coefficient of Correlation between ROE and D/E Ratio of NABIL

r	r²	P.E.	P.E.*6	Relationship	Level of Significance
0.174	0.030	0.29	1.74	Positive	Significant

Table 4.40

Coefficient of Correlation between ROE and D/E Ratio of BOK

r	r²	P.E.	P.E.*6	Relationship	Level of Significance
0.908	0.824	0.05	0.3	Positive	Significant

These tables show the relationship between the return on equity and debt equity ratio of selected banks over the study period. Coefficient of correlation of NABIL and BOK are 0.174 and 0.908 respectively. Here, relation of NABIL and of BOK is positive. Considering the probable error (P.E.), the value of risk is greater than six times of the probable error of both banks. Therefore, it is depicted that the value of r in both bank is significant. i.e. there is significant relationship between equity and debt to equity ratio of both banks.

4.11.4 Coefficient of Correlation between Debt-Equity Ratio and Return on Assets (RoA)

The correlation between debt equity ratio and return on assets of selected banks are analyzed in order to examine which debt capital is significant in generating more return.

It is assumed that there is significant relationship between return and debt capital. Positive values show the positive relation and negative values shows the negative relation. The following result is obtained for NABIL and BOK.

Table 4.41

Relationship between Debt-Equity Ratio and Return on Assets of NABIL

r	r ²	P.E.	P.E.*6	Relationship	Level of Significance
-0.892	0.795	0.062	0.372	Negative	Insignificant

Table 4.42

Relationship between Debt-Equity Ratio and Return on Assets of BOK

r	r ²	P.E.	P.E.*6	Relationship	Level of Significance
-0.777	0.604	0.119	0.714	Negative	Insignificant

From the table analysis, it's clear that the correlation between debt equality ratio and return on assets is negative. Correlation coefficient between debts to equity of NABIL is -0.892. Here, the relation is highly negative. Correlation coefficient of BOK is -0.777. Here, the correlation coefficient of BOK also shows the highly negative relationship. Value of 'r' is less than six times probable error of selected banks, which shows the value of r is insignificant, i.e. there is not significant relationship between debt to equity and return on assets. It shows that the selected banks are insignificant in terms of debt to equity to return on assets.

4.12 Test of Hypothesis

This research has explored some null hypothesis for the purpose of evaluating the difference between two banks regarding some financial ratio. This research has imagined that the commercial banks are operating under the same environment and are of the same class as well as have no significant difference regarding capital structure and profitability. So, the hypothesis testing i.e. t-test is performed for NABIL Bank Limited. and Bank of Kathmandu as sample units.

4.13 Student t-test regarding Capital Structure

Test of Hypothesis on Total Debt to Total Asset Ratio

Lets X1 and X2 be denoted as total debt to Total Asset ratio of NABIL bank Limited and Bank of Kathmandu Limited respectively.

Null hypothesis (H0) : $\mu_{x1} = \mu_{x2}$ i.e. there is no significance difference between the mean of Total Debt to Total Asset ratio of NABIL and BOK.

Alternative hypothesis (H1) : $\mu_{x1} \neq \mu_{x2}$ i.e. there is significant difference between the mean of Total Debt to Total Asset of NABIL and BOK.

Under H0 test statistic is

$$t = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{sp^2 \left(\frac{1}{x_1} + \frac{1}{x_2} \right)}}$$

$$t = \frac{92.49 - 91.17}{0.537 \left(\frac{1}{5} + \frac{1}{5} \right)}$$

$$= \frac{1.32}{\sqrt{0.270.2148}}$$

$$= \frac{0.3}{.523}$$

$$t = 0.575$$

$$|t| = .572$$

Tabulated value of t at 5% level of significance for 8 degree of freedom (d.f.) is 2.306 when d.f. = (N1 + N2 – 2)

Decision

Since tabulated value of 't' 2.308 is greater than calculated value i.e. .572 which means null hypothesis is accepted. Therefore, we can conclude that there is not significance difference in between mean Total Debt to Total Asset ratio of NABIL and BOK.

Test of hypothesis on Debt to Equity Ratio.

Lets X1 and X2 be denoted as Debt to Equity ratio of NABIL Bank Limited and Bank of Kathmandu Limited respectively.

Null hypothesis (H0) : $\mu_{x1} = \mu_{x2}$ i.e. there is no significance difference between the mean of Debt to Equity ratio of NABIL and BOK.

Alternative hypothesis (H1) : $\mu_{x1} \neq \mu_{x2}$ i.e. there is significant difference between the mean of Debt to Equity of NABIL and BOK.

Under H0 test statistic is:

$$t = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{sp^2 \left(\frac{1}{N_1} + \frac{1}{N_2} \right)}}$$

$$t = \frac{12.43 - 10.42}{\sqrt{1.623 \left(\frac{1}{5} + \frac{1}{5} \right)}}$$

$$= \frac{2.01}{\sqrt{0.6492}}$$

$$= \frac{0.46}{.9}$$

$$= 0.511$$

$$|t| = 0.511$$

Tabulated value of 't' at 5% level of significance for 8 degree of freedom (d.f.) is 2.306, where d.f. = (N1 + N2 - 2)

Decision

Since, calculated value of t is 0.551 which is less than tabulated value i.e. 2.306, we can conclude that there is not significance difference between mean of D/E ratio of NABIL and BOK.

4.14 Major Finding of the Study

The main findings of this study are revealed from the analysis are briefly described below:

1. Analysis of Debt to Equity Ratio.

The average D/E ratio of NABIL Bank is 12.43 times. This means that the debt financing is more than 12 times higher than shareholders equity in NABIL Bank. BOK has 10.42 times D/E ratio on average. The BOK has lesser D/E ratio than NABIL Bank Ltd. which implies that NABIL Bank Ltd. is using higher portion debt in its capital structure than BOK.

2. Total Debt to Total Assets Ratio / Financial Ratio

In terms of total debt to total assets ratio from the study we came to know that the selected banks are highly levered (i.e. more than 90 percent in average) on five year time horizon. It means the assets of selected banks are financed more by the funds collected from creditors. Bank of Kathmandu has less average ratio of than that of NABIL bank which implies that NABIL has higher portion of debt in total asset than BOK.

3. Analysis of Interest Coverage Ratio

NABIL Bank is able to maintain higher interest coverage ratio than Bank of Kathmandu. Its average interest coverage ratio during five years period is 1.99 times. BOK has average interest coverage of 1.91 times. But, this ratio shows consistent trend. The trend of two banks is almost similar as both banks have downward sloping interest coverage

ratio. The computed interest coverage ratio of both banks in the above table shows how many times the interest charges are covered by funds that the ordinary available to pay interest charges.

4. Analysis of Degree of Financial Leverage

The degree of financial leverage of BOK is higher than that of NABIL Bank. BOK's degree of financial leverage is 2.20% in average and NABIL has only 2.11% of average degree of financial leverage which reflects the bank has lower degree of financial risk

5. Analysis of Return on Total Assets (ROA)

NABIL has higher average ROA than Bank of Kathmandu i.e 2.30% where as Bank of Kathmandu has only 2.18% in average. NABIL Bank has better utilized its assets to generate profit than that of BOK .Both banks ROA trend is in decreasing order.

6. Analysis of Return on Net Worth/ Return on Share holder's Equity (ROE)

Between these two banks NABIL bank has higher average ROE i.e. 30.72%. Average ROE of Bank of Kathmandu is 24.65 percent on the shareholders equity fund. ROE of NABIL bank is strong enough, which shows the strong performance of the bank, which is in order of maximizing the shareholders equality.

7. Earning per Share (EPS)

Average earning per share of NABIL and BOK are Rs. 88.72 and Rs. 48.02. Earning per share of NABIL is much higher than that of BOK. Here, NABIL bank possesses strength

on earning per share, which helps to maximize the shareholders wealth. Earning per share of NABIL and of BOK has been steadily decreasing its EPS which shows poor prospects for coming days.

8. Dividend Per Share (DPS)

NABIL Bank is found to be paying much more dividend in average in the study period. It has distributed Rs 39.01 in average where as BOK distributed only average of Rs.12.51 as dividend in the same period. After the year 2007/08 NABIL banks have reduced cash dividend sharply whereas BOK has distributed more dividend compared to the previous years. Nepal Rastra Bank has introduced new rule regarding the level of capital so, banks are increasing their total capital and focusing on bonus share.

9. Dividend Payout Ratio (DPR)

Dividend payout ratio of NABIL Bank Ltd. is greater than that of Bank of Kathmandu Ltd. On average NABIL has distributed 43.35% of its dividend as earning to shareholders where as BOK distributed only 29.14% of its earning as dividend.

10. Price Earning Ratio (P/E Ratio)

Average price earning ratio of NABIL bank is 31.77 times. It is higher than that of Bank of Kathmandu. On an average, the investors were interested to pay 31.77 times higher than reported earning per share in the market for common stock of NABIL Bank. Price earning of BOK is lower in comparison to NABIL Bank with an average price earning ratio of Rs 24.29. Over all, trend of price earning ratio shows the fluctuating trend.

11. Overall Capitalization Rate (Net Income Approach)

Under Net income approach, the average capitalization ratio of NABIL Bank Ltd. is 7.01. Similarly, the average overall capitalization rate Bank of Kathmandu Ltd. is 6.98 which is lower than that of NABIL bank. It is found that cost of equity of NABIL is higher than that of BOK.

12. Equity Capitalization Rate (Net Operating Income Approach)

The equity capitalization rate (K_e) of both banks is fluctuating in nature. The equity capitalization rate of NABIL Bank Ltd. is 5.43% on average. Bank of Kathmandu has 7.04% on average. NABIL Bank Ltd has lower NOI or equity capitalization rate because of lower earnings to that of greater market value of share.

13. Weighted Average Cost of Fund

Actual weighted average cost of fund of NABIL Bank found to be more than that of BOK in almost all the year. Cost of debt of NABIL was not so higher than that of BOK but the cost of equity is slightly higher than that of BOK because NABIL is paying high dividend and that increased its overall cost of fund.

14. Finding of Statistical Analysis

1. The correlation between EBIT and Interest payment in case of NABIL Bank Ltd. is 0.993, which shows a positive relationship. It shows that increase in EBIT increases in interest payment. On the other hand, the correlation between EBIT and interest

payment of Bank of Kathmandu Ltd. is 0.997, which also shows positive relationship.

2. In the case of both banks the correlation between overall capitalization rate and debt to equity ratio is negative, which indicates that increase in overall capitalization rate reduces the debt equity ratio. BOK has higher negative relationship than that of NABIL Bank. The P.E of both banks is -1 and -0.954, which shows that the relationship between overall capitalization rate and debt equity ratio of both bank is insignificant.
3. Relationship between the return on equity and debt to equity ratio of NABIL Banks and BOK over the study period is positive Coefficient of Correlation of NABIL and BOK are 0.174 and 0.908 respectively. Considering the probable error (P.E.), the value of r is more than six times of the probable error of both banks. Therefore, it is depicted that the value of r in both bank is significant. i.e. there is significant relationship between return on equity and debt equity ratio of NABIL Bank and BOK.
4. Correlation coefficient between debts to equity ratio and ROA of NABIL is -0.892. Here, the relation is highly negative. Correlation coefficient of BOK is -0.777. Here, correlation coefficient of BOK also shows the highly negative relationship. Value of ' r ' is less than six times probable error of selected banks, which shows the value of r is insignificant, i.e. there is not significant relationship between debt to equity and return on assets. It shows that the selected banks are insignificant in terms of debt to equity to return on assets.

5. Test of hypothesis on Total Debt to Equity ratio reveals that calculated value of the .511 which is lower than tabulated value of 't'. So Ho is accepted, which explains that there is not significant difference in the mean D/E ratio of NABIL Bank Ltd. Bank of Kathmandu Ltd.
6. Test of Hypothesis on Total Debt to total Asset ratio of NABIL Bank Ltd and Bank of Kathmandu Ltd shows calculated value of 't' is .572, which is lower than tabulated value of 't' at 5%, so Ho is accepted, which explains that there is no significant difference between the mean ratio of total debt to total assets of NABIL and BOK.

CHAPTER - V

SUMMARY, CONCLUSION AND RECOMMENDATION

Every business needs capital to operate smoothly and capital is said to be the blood of the business. So, sound capital structure is very crucial for smooth operation of business. As in other firms, capital structure is crucial part for banking industry too. This study had been carried based on two competitive commercial banks i.e. NABIL and BOK for study of capital structure. Financial sector is a part of the industry and is regarded as the backbone or engine of the growth of the economy in developed or developing country whether it is in transition phase or emerging. It plays a very crucial role in the development of all sectors of the economy and actually works as a lubricator by the financial resources. Banking industry is a part of financial sector and it has great contribution in economic development of the country. By the various functions it

increases employment opportunity, industrial activities, trade business etc. NBL is the first bank established in the year 1937 A.D. and dominated the whole financial sector in the country for almost three decades.

After liberalization policy, which initiated in mid 1980s, it created the path to the foreign investors. In 1984 A.D., the Nepal Arab Bank Limited was established as the first joint venture commercial bank of the country. Capital Structure is a crucial part of planning and decision making for the managers who are involved in business. It is not only challenging job for organization but also challenging study for a researcher.

A brief introduction of the study and overall introduction of the companies that have been undertaken for study purpose have been presented in first chapter. Second chapter is good review of the issues related with abstracts of capital structure. The possible valid use of ratios and mechanics; financial and statistical tools and techniques are briefly reviewed in chapter third research methodology. Lastly, fourth chapter consists of analytical framework of data and findings that is considered as the important part concerning the performance of the selected banks. This is the final chapter which includes dealing with summary, conclusion and recommendation derived from the entire study.

5.1 Summary

Basically, it concerns on the various aspect of the study on capital structure of selected commercial banks in Nepal. It covers five fiscal years starting from 2007/08 to 2011/12. It includes the data of two competitive commercial banks.

To accomplish the setting objectives in first chapter, the necessary data and others various information were collected from the financial statements of each individual bank. Similarly, the required data's for the study were collected from the annual report of the selected banks. Some data's were also collected by the help of the staff's of the concerned bank.

The capital structure position has been analyzed by calculating various ratios. The ratio of debt ratio is in slightly fluctuating trend, the creditor's margin of safety is very low, which shows high risk. NABIL has debt to equity financing higher than BOK i.e. 12.43 in average. BOK has decreased this ratio from 12.2% to 9.69% where as NABIL's ratio is also is in decreasing trend i.e. from 14.23% to 10.58% in the study period. In case of debt asset ratio both banks are quite similar. Interest coverage ratio shows consistent trend in case of both banks. NABIL bank was able to maintain higher interest coverage ratio than BOK in beginning years of this study but in last year it is almost equal in both banks. But, average ratio of NABIL is still higher (1.99%) than that of BOK (1.91%) during the five year's period. Degree of financial leverage of NABIL has low ratio which shows low risk and BOK has higher degree of financial coverage which shows high financial risk to the creditor. Average DFL of NABIL is 2.11 times and BOK is 2.20 times. Leverage ratio measure the long term solvency of firm. ROA ratio of two banks have mixed trend. NABIL has better utilized its assets to generate profit than BOK. ROA of BOK is less fluctuating over the study period but ROA of NABIL is in increasing trend over the study period. Average of ROA of NABIL is much better than that of BOK, NABIL has average

of 2.30% ROA where as BOK has only 2.18 %. Similarly, ROE of NABIL is higher than that of BOK. Average ROE of NABIL is 30.72% whereas BOK has only 24.65%.

Earning per share of NABIL is greater than that of BOK. Here, NABIL's EPS is more than double than of BOK's. It shows the strength of earning per share of NABIL, which helps to maximize the share holder's wealth. Average EPS of NABIL is Rs.88.72 but the average of BOK is only Rs.48.02. Dividend per share of NABIL is very much higher than the dividend per share of BOK. Average dividend of NABIL for the study period is Rs. 39.01 where as it is only Rs. 12.51 for BOK. Both Banks distributed bonus share in this period. The issue of bonus share is advantageous in same case. It reduces the market price per share and it's more attractive to investor. Dividend payout ratio is also higher in NABIL. In the study period average DPR of NABIL is 43.35% and BOK is 29.14%. Price earning ratio of NABIL is 31.77 times and of BOK is 24.29 times. There is not big difference in PE ratio between these two banks. In 2007/08 NABIL's PE ratio was 48.7 times and BOK's ratio was 39.21 times but in 2008/09 it decreased significantly and reached to 16.21 and 16.58 times in 2011/12 respectively. This shows that investors are ready to pay higher price for common stocks of both banks in these years.

The NI approach implies that proportion of high leverage consequently increases the value of the firm. This approach is well acquainted with the study as the value of the banks has increased in accordance to the increasing portion of leverage. The K_0 of selected bank are positive. NABIL has the higher overall capitalization rate in the study period than BOK. But under NOI approach, equity capitalization rate of BOK is slightly

higher than that of NABIL. The actual cost of fund, over the study period, of NABIL is slightly higher than that of BOK.

The correlation coefficient between EBIT and interest payment of both banks shows positive and significant relationship. The relationship between overall capitalization rate and debt equity ratio are of negative value and relationships are insignificant in both banks. The correlation between ROE and debt to equity ratio of both the banks shows positive and significant relationship. The relationship between ROE and debt to equity ratio of both banks is significant. Correlation between Debt equity and ROA of both banks are negative and their relationship is also insignificant. We have performed two hypotheses in this research. While testing these hypotheses it is proved that there is not significant difference between mean of debt equity ratio to total asset ratio of NABIL and BOK. Similarly, it is also proved that there is not significant difference between mean of debt to total asset ratio of these banks.

5.2 Conclusion

From the study the selected bank are found to be highly levered. The companies' financial mix accounts to a higher proportion of debt and it is increasing every year. The growth and increasing integration of the world's economy has been parallel in expansion of global banking activities. Nepal though a developing country, couldn't identify the fact that commercial banking which is responded by extending loan and developing new and highly innovative financial techniques that laid the foundation for totally new approaches to the provision of banking services on the basis of entire research study. The analysis of

capital structure is very significant in project appraisal of tough competition. Most of the banks cannot manage the current assets. Because of the inefficient current management, organization cannot fulfill the organizational objective, i.e. to earn maximum profit and maximizing the share holder equity.

The debt-shareholder's fund ratio calculated in relation to the proportion of funded debt to shareholder fund which shows % of funded debt is many times greater than shareholder's fund in the bank. The interest coverage ratio during the study period was positive in both banks. In case of both ROA and ROE, NABIL has higher ratio than BOK. This indicates that NABIL bank is able to better utilize its resources to generate profit. The average EPS of NABIL is higher than that of BOK but the EPS of BOK is found to be increasing and EPS of NABIL is found almost constant during the study period. In Nepalese banking industry, trend of profit is increasing, profit level is quite satisfactory. But, the level of profit can decrease if they cannot control the costs. The main causes of cost are unskilled manpower, unsystematic arrangement of materials, high level of unnecessary expenses and misuse of the facilities and resources. The correlation coefficient of the variable of selected bank for the statistical analysis is found positive to each other. The coefficients are all statistically significant in more than average banks. A positive correlation means both of the variables are moving toward the same direction.

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

5.3 Recommendation

From the above findings and conclusion, we can say that Nepalese commercial banks have not been properly using capital structure and cost of capital concept in practice. Theories developed by the scholars have not been able to attract the management of the Nepalese commercial banks. Thus, overall structural scenarios of the banks are in confusing state. Therefore, we may recommend that the management of the commercial banks should be clear about the generation of fund desired for investment. It means that the knowledge of capital structure and cost of capital plays vital role in uplifting the financial position of the banks. The analysis of cost of capital is very important in making investment at different projects because of aggressive competition. Therefore, the management of the banks should always be well informed about the sources of capital, their reliability and their cost. The manager should not take any financial decision randomly and should always keep in mind the vision of cost of capital concept and theories of capital structure, which helps the manager in intriguing right decision.

Similarly, commercial banks are basically concentrated on mobilization of their deposit funds in productive areas. So, they are proposed to come forward to match government obligation by financing the priority sector development programs. Finally, banks are required and recommended to expand assets and branches that ultimately affect the banks capital structure and expected to increase the profitability more than present. All the sample banks vary in case of total assets, number of staffs and number of bank branches and their volume of transactions. In conclusion, these banks are well established and doing well.

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APPENDICES

ANNEX-I

Coefficient of Correlation between EBIT and Interest Payment of NABIL

Bank

Year	Interest (x)	EBIT (Y)	dx	dy	dxdy	dx ²	dy ²
2007/08	758.43	1847.42	1236.37	1841.84	2277195.72	1528610.77	3392374.59
2008/09	1153.28	2631.49	-841.52	1057.77	890134.61	708256.90	1118877.37
2009/10	1960.10	3531.94	-34.7	-157.32	5459.004	1204.09	24749.58
2010/11	2946.69	4855.37	951.89	1166.11	1110008.45	906094.57	1359812.53
2011/12	3155.49	5580.07	1160.69	1890.81	2194644.26	1347201.28	3575162.45
	X= 9973.99	Y= 18446.29			dxdy= 6477442.04	dx ² = 4491266.63	dy ² = 9470976.53

$$\bar{X} = \frac{\sum X}{N} = \frac{9973.99}{5} = 1994.80$$

$$\bar{Y} = \frac{\sum Y}{N} = \frac{18446.29}{5} = 3689.26$$

$$r = \frac{\sum dx \cdot dy}{\sqrt{\sum dx^2} \sqrt{\sum dy^2}}$$

$$r = \frac{6477442.04}{\sqrt{4491266.63} \sqrt{9470976.53}}$$

$$r = \frac{6477442.04}{6522022.65}$$

$$r = 0.993$$

$$r^2 = .986$$

Probable Error,

$$PE = 0.6745 \frac{1-r^2}{\sqrt{n}}$$

$$PE = 0.6745 \frac{1-.986}{\sqrt{5}}$$

$$PE = .004$$

ANNEX-II

Coefficient of Correlation between EBIT and Interest Payment of BOK

Year	Interest (x)	EBIT (Y)	dx	dy	dx dy	dx ²	dy ²
2007/08	471.54	945.44	-499.76	-703.81	351736.08	249760.06	495348.52
2008/09	563.11	1224.37	-354.19	-424.88	150488.25	125450.56	180523.01
2009/10	902.52	1634.37	-14.78	-14.88	219.93	218.45	221.41
2010/11	1218.79	2083.84	301.49	434.59	131024.54	90896.22	188868.47
2011/12	1484.54	2358.22	567.24	708.97	402156.14	321761.22	502638.46
	X= 4586.5	Y= 8246.24			dx dy= 1035624.94	dx ² = 788086.50	dy ² = 502638.46

$$\bar{X} = \frac{4586.5}{5} = 917.30$$

$$\bar{Y} = \frac{8246.24}{5} = 1649.25$$

$$r = \frac{\sum dx \cdot dy}{\sqrt{\sum dx^2} \cdot \sqrt{\sum dy^2}}$$

$$r = \frac{1035624.94}{\sqrt{788086.50} \cdot \sqrt{502638.46}}$$

$$r = \frac{1035624.94}{1038158.66}$$

$$r = 0.997$$

$$r^2 = 0.99$$

Probable Error,

$$PE = 0.6745 \frac{1-r^2}{\sqrt{n}}$$

$$PE = 0.6745 \frac{1-0.99}{\sqrt{5}}$$

$$PE = 0.003$$

ANNEX-III

Coefficient of Correlation between Ko and D/E ratio of NABIL bank

Year	Ko (x)	D/E (Y)	dx	dy	dx dy	dx ²	dy ²
2007/08	4.98	14.23	-2.03	1.8	-3.65	4.12	3.24
2008/09	6.00	13.01	-1.01	0.58	-0.58	1.02	0.34
2009/10	6.89	12.60	-0.12	0.17	-0.29	0.014	0.03
2010/11	8.36	11.71	1.35	-0.72	-0.97	1.82	0.52
2011/12	8.82	10.58	1.81	-1.85	-3.35	3.28	3.42
	X= 35.05	Y= 62.13			dx dy= -8.84	dx ² = 10.25	dy ² = 7.55

$$\bar{X} = \frac{35.05}{5} = 7.01$$

$$\bar{Y} = \frac{62.13}{5} = 12.43$$

$$r = \frac{\sum dX.dY}{\sqrt{dX^2} \sqrt{dY^2}}$$

$$r = \frac{-8.84}{\sqrt{10.25} \sqrt{7.55}}$$

$$r = -1$$

$$r^2 = 1$$

Probable Error,

$$PE = 0.6745 \frac{1-r^2}{\sqrt{n}}$$

$$PE = 0.6745 \frac{1-1}{\sqrt{5}}$$

$$PE = 0$$

ANNEX-IV

Coefficient of Correlation between Ko and D/E ratio of BOK

Year	Ko (x)	D/E (Y)	dx	dy	dx dy	dx ²	dy ²
2007/08	5.33	12.20	-1.65	1.78	-2.94	2.7225	3.1684
2008/09	5.98	10.77	-1	0.35	-0.35	1	0.1225
2009/10	6.99	10.28	0.01	-0.14	-0.0014	0.001	0.0196
2010/11	8.42	9.16	1.44	-1.26	-1.8144	2.0736	1.5876
2011/12	8.17	9.69	1.19	-0.73	-0.8687	1.4161	0.5329
	X= 34.89	Y= 52.1			dx dy= -5.9745	dx ² = 7.2123	dy ² = 5.431

$$\bar{X} = \frac{34.89}{5} = 6.98$$

$$\bar{Y} = \frac{52.1}{5} = 10.42$$

$$r = \frac{\sum dx \cdot dy}{\sqrt{\sum dx^2} \sqrt{\sum dy^2}}$$

$$r = \frac{-5.9745}{\sqrt{7.2123} \sqrt{5.431}}$$

$$r = \frac{-5.9745}{6.2585}$$

$$r = -0.954$$

$$r^2 = 0.911$$

Probable Error,

$$PE = 0.6745 \frac{1-r^2}{\sqrt{n}}$$

$$PE = 0.6745 \frac{1-0.911}{\sqrt{5}}$$

$$PE = 0.026$$

ANNEX-V

Coefficient of Correlation between RoE and D/E Ratio of NABIL

Year	D/E (x)	RoE (Y)	dx	dy	dx dy	dx ²	dy ²
2007/08	14.23	30.63	1.8	-0.09	-0.162	3.24	0.0081
2008/09	13.01	32.93	0.58	2.21	1.2818	0.34	4.8841
2009/10	12.60	29.70	0.17	-1.02	-0.1734	0.03	1.0404
2010/11	11.71	29.26	-0.72	-1.46	1.0512	0.52	0.17987
2011/12	10.58	31.06	-1.85	0.34	-0.629	3.42	0.1156
	X= 62.13	Y= 153.58			dx dy= 1.3686	dx ² = 7.55	dy ² = 8.1798

$$\bar{X} = \frac{62.13}{5} = 12.43$$

$$\bar{Y} = \frac{153.58}{5} = 30.72$$

$$r = \frac{\sum dx \cdot dy}{\sqrt{\sum dx^2} \cdot \sqrt{\sum dy^2}}$$

$$r = \frac{1.3686}{\sqrt{7.55} \cdot \sqrt{8.1798}}$$

$$r = \frac{1.3686}{7.8584}$$

$$r = 0.174$$

$$r^2 = 0.030$$

Probable Error,

$$PE = 0.6745 \frac{1-r^2}{\sqrt{n}}$$

$$PE = 0.6745 \frac{1-0.030}{\sqrt{5}}$$

$$PE = 0.29$$

ANNEX-VI

Coefficient of Correlation between RoE and D/E Ratio of BOK

Year	D/E (x)	RoE (Y)	dx	dy	dx dy	dx ²	dy ²
2007/08	12.20	26.94	1.78	2.29	4.0762	3.1684	5.24
2008/09	10.77	26.51	0.35	1.86	0.651	0.1225	3.4596
2009/10	10.28	24.56	-0.14	-0.09	0.0126	0.0196	0.0081
2010/11	9.16	22.72	-1.26	-1.93	2.4318	1.5876	3.7249
2011/12	9.69	22.50	-0.73	-2.15	1.5695	0.5329	4.6225
	X= 52.1	Y= 123.23			dx dy= 8.7411	dx ² = 5.431	dy ² = 17.0592

$$\bar{X} = \frac{52.1}{5} = 10.42$$

$$\bar{Y} = \frac{123.23}{5} = 24.65$$

$$r = \frac{\sum dx \cdot dy}{\sqrt{\sum dx^2} \cdot \sqrt{\sum dy^2}}$$

$$r = \frac{8.7411}{\sqrt{5.431} \cdot \sqrt{17.0592}}$$

$$r = 0.908$$

$$r^2 = 0.824$$

Probable Error,

$$PE = 0.6745 \frac{1-r^2}{\sqrt{n}}$$

$$PE = 0.6745 \frac{1-0.824}{\sqrt{5}}$$

$$PE = 0.05$$

ANNEX-VII

Relationship between Debt-Equity Ratio and Return on Assets of NABIL

Year	D/E (x)	RoA (Y)	dx	dy	dx dy	dx ²	dy ²
2007/08	14.23	2.01	1.8	-0.29	-0.52	3.24	0.0841
2008/09	13.01	2.35	0.58	0.05	0.029	0.34	0.0025
2009/10	12.60	2.18	0.17	-0.12	-0.020	0.03	0.0144
2010/11	11.71	2.30	-0.72	0	0	0.52	0
2011/12	10.58	2.68	-1.85	0.38	-0.703	3.42	0.1444
	X= 62.13	Y= 11.52			dx dy= -1.214	dx ² = 7.55	dy ² = 0.2454

$$\bar{X} = \frac{62.13}{5} = 12.43$$

$$\bar{Y} = \frac{11.52}{5} = 2.30$$

$$r = \frac{\sum dx dy}{\sqrt{\sum dx^2} \sqrt{\sum dy^2}}$$

$$r = \frac{-1.214}{\sqrt{7.55} \sqrt{0.2454}}$$

$$r = -0.8918$$

$$r^2 = 0.795$$

Probable Error,

$$PE = 0.6745 \frac{1-r^2}{\sqrt{n}}$$

$$PE = 0.6745 \frac{1-0.795}{\sqrt{5}}$$

$$PE = 0.062$$

ANNEX-VIII

Relationship between Debt-Equity Ratio and Return on Assets of BOK

Year	D/E (x)	RoA (Y)	dx	dy	dx dy	dx ²	dy ²
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2007/08	12.20	2.04	1.78	-0.14	-0.2492	3.1684	0.0196
2008/09	10.77	2.25	0.35	0.07	0.0245	0.1225	0.0049
2009/10	10.28	2.08	-0.14	-0.1	0.014	0.0196	0.01
2010/11	9.16	2.44	-1.26	0.26	-0.3276	1.5876	0.0676
2011/12	9.69	2.10	-0.73	-0.08	-0.0584	0.5329	0.0064
	X= 52.1	Y= 10.91			dxdy= -0.5967	dx ² = 5.431	dy ² = 0.1085

$$\bar{X} = \frac{52.1}{5} = 10.42$$

$$\bar{Y} = \frac{10.91}{5} = 2.18$$

$$r = \frac{\sum dX.dY}{\sqrt{dX^2} \sqrt{dY^2}}$$

$$r = \frac{-0.5967}{\sqrt{5.431} \sqrt{0.1085}}$$

$$r = -0.777$$

$$r^2 = 0.604$$

Probable Error,

$$PE = 0.6745 \frac{1-r^2}{\sqrt{n}}$$

$$PE = 0.6745 \frac{1-0.604}{\sqrt{5}}$$

$$PE = 0.119$$

ANNEX-IX

Test of Hypothesis on Total Debt to Total Asset Ratio

Year	X ₁	X ₂	dX ₁	dX ₂	dX ₁ ²	dX ₂ ²
2007/08	93.44	92.43	0.95	1.26	0.9025	1.5876
2008/09	92.86	91.50	0.37	0.33	0.1369	0.1089
2009/10	92.64	91.13	0.15	-0.04	0.0225	0.0016
2010/11	92.06	90.16	-0.43	-0.01	0.1849	0.0001
2011/12	91.45	90.65	-1.04	-0.52	1.0816	0.2704
	X ₁ = 462.45	X ₂ = 455.87			dx ₁ ² = 2.33	dx ₂ ² = 1.97

Where,

X₁ = D/A ratio of NABIL

X₂ = D/A ratio of BOK

$$\bar{X}_1 = \frac{462.45}{5} = 92.49$$

$$\bar{X}_2 = \frac{455.87}{5} = 91.17$$

$$S^2_p = \frac{\sum dX_1^2 + \sum dX_2^2}{n_1 + n_2 - 2}$$

$$= \frac{2.33 + 1.97}{8}$$

$$= \frac{4.3}{8}$$

$$S^2_p = 0.537$$

Now,

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

$$t = \frac{92.49 - 91.17}{0.537 \left(\frac{1}{5} + \frac{1}{5} \right)}$$

$$= \frac{1.32}{\sqrt{0.2702148}}$$

$$= \frac{0.3}{.523}$$

$$t = 0.575$$

$$|t| = .575$$

Tabulated value of T at 5% level of significance for 8 degree of freedom (df) is 2.306. (Where $df = n_1 + n_2 - 2$)

Decision,

Since, tabulated value of T (2.306) is greater than calculated value i.e. 0.572, null hypothesis is accepted. Therefore we can conclude that there is no significance difference in between men D\A Ratio of NABIL & BOK.

ANNEX-X

Test of Hypothesis on Debt to Equity Ratio

Year	X ₁	X ₂	dX ₁	dX ₂	dX ₁ ²	dX ₂ ²
2007/08	14.23	12.2	1.8	1.78	3.24	3.1684
2008/09	13.01	10.77	0.58	0.35	0.3364	0.1225
2009/10	12.6	10.28	0.17	-0.14	0.0289	0.0196
2010/11	11.71	9.16	-0.72	-1.26	0.5184	1.5876
2011/12	10.58	9.69	-1.85	-0.73	3.4225	0.5329
	X ₁ = 62.13	X ₂ = 52.1			dx ₁ ² = 7.55	dx ₂ ² = 5.431

Where,

X₁ = D/E ratio of NABIL

X₂ = D/E ratio of BOK

$$\bar{X}_1 = \frac{62.13}{5} = 12.43$$

$$\bar{X}_2 = \frac{52.1}{5} = 10.42$$

$$S^2_p = \frac{\sum dX_1^2 + \sum dX_2^2}{n_1 + n_2 - 2}$$

$$= \frac{7.55 + 5.431}{8}$$

$$= \frac{12.98}{8}$$

$$S^2_p = 1.623$$

Now,

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

$$t = \frac{12.43 - 10.42}{\sqrt{1.623 \left(\frac{1}{5} + \frac{1}{5} \right)}}$$

$$= \frac{2.01}{\sqrt{0.6492}}$$

$$= \frac{0.46}{.9}$$

$$= 0.511$$

$$|t| = 0.511$$

Tabulated value of T at 5% level of significance for 8 degree of freedom (df) is 2.306.

(Where df = n₁ + n₂ - 2)

Decision,

Since, the calculated value of T is 0.66, which is less than the tabulated value, it explains that there is not significant difference in between mean D\E ratio of NABIL and BOK.