CHAPTER 1
INTRODUCTION

1.1 Background of the Study

The importance of financial sector in general and banking sector in particular in any economy cannot be undermined. Banking sector definitely plays a pivotal role in the overall development of an economy. Nepal is one of the land locked countries in the world situated midst of two large countries India and China. Both the countries have matured economics conditions where as Nepal being under developing country in the world with increasing tendency of the economic stipulations, most of the population is still living below poverty level with lowest rate of per capita income of only $470 and a low rate of capital formation.[1] Gross domestic saving is less and almost half of the population lives below absolute poverty level. Land-locked, unfavorable topography, absence of economic infrastructure, political instability and lack of political commitment are some of the reasons behind the backward economic condition. For this purpose the process of capital accumulation, among other prerequisites, should be expedited.

The onward movement of the country solely depends upon its economic condition. As financial institutions for an instance “Commercial Banks” play an important role in the economic development of the country, commercial Banks deal in the process of channeling the available resources in the needed sectors. Banks act as an intermediary between the individuals who lend and who borrow. These institutions accept deposits from public and in turn provide credit to trade, business and industry that directly makes a remarkable impact on the economic development of a country. These institutions make the flow of investment easier.

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[1] 2008, World Bank; Organization for Economic Co-operation and Development (OECD)

Capital accumulation plays an important role in acceleration of the economic growth of a nation, which in turn is basically determined, among others, by saving and investment propensities. But the capacity to save in developing countries is quite low with a relatively higher marginal propensity of consumption. As a result, such countries are badly entrapped into the vicious circle of poverty. So the basic problem for the developing countries is raising the level of saving and investment. In order to collect the scattered meager saving and put them into productive channels, financial institutions like bank are a necessity.

Banking sector plays a vital role for the country's economic development. Bank is a mobilizing institution, which accepts deposit from various sources, and invests such accumulation resources in the field of agriculture, trade, commerce, industry and tourism etc.

In our country, the development of banking is relatively recent. The record of banking system in Nepal gives detail account of mixture of slow and steady evolution in the financial and global economy of Nepalese life. Involvement of landlord, rich merchants, shopkeepers and other individual moneylender has acted as fence to institutional credit in presence of unorganized money market.

The establishment of the "Tejarath Adda" during the year 1877 AD played a vital role in the banking system in the country. In the year 1934 AD, the establishment of Nepal Bank Ltd. Joint venture with the Imperial Bank of India came into existence under "Nepal Bank Act, 1973" as the first commercial bank of Nepal. Rastriya Banijya Bank, the second commercial bank was established in the year 1965. Rastriya Banijya Bank being the largest commercial bank plays a major role in the economy. With the opening of NABIL bank in 1985 the door of opening foreign join venture banks was opened to the private sector. The main objective of the bank is to collect the deposit and provide loans to agriculture, commerce and industries and to provide modern banking services to the people. After establishment of joint venture banks gave a new horizon to the financial

sector of the country. They are expected to enter the foreign capital, technology, experience, healthy competitive concept, expertise and skills in Nepal.

The life-blood of every business firm or bank is fund that is needed to operate it. At the time of establishment, fund generally is required by the firm/bank in two ways equity and debt. Equity provides the ownership of the firm to the shareholders. On the other hand, debt is borrowed fund and has a fixed charge irrespective to the earning of the firm (bank) and the firm has to pay the fixed charges periodically to the debt providers. In the running business, retained earnings may also be used as a source of financing.

The capital structure concept occupies an important place in the theory of financial management. The term capital structure refers to the proportion of debt and equity capital or the composition of long-term sources of finance, such as preference capital, debenture, long-term debt and equity capital including services and surpluses (i.e. retained earning) and excludes short term debts. Thus the financing decision of a firm relates to choice of proportion of debt and equity to finance the investment requirement. A proper balance between debt and equity is necessary to ensure a trade–off between risk and return to the shareholders. A capital structure with reasonable proportion of debt and equity capital is called optimal capital structure. However, it can be expected that the capital structure decision affect the total value of the firm. They should select such financing mix that will maximize the shareholders' wealth. Optimum capital structure may be defined as the capital structure or combination of debt and equity that leads to the maximum value of the firm.

Optimum leverage/ capital structure can be defined as the mix of debt and equity which will maximize the market value of a company, i.e. the aggregate value of the claims and ownership interests represented on the credit side of the balance sheet. Further the advantages of having an optimum financial structure, such an optimum does exist, is two–fold. It maximizes the value of the company creating

investing opportunities. Also by increasing the firm's opportunity to engage in future wealth-creating investment it increase the economy's rate of investment and growth *(Soloman, 1969).*

Decision-making is a process of choosing among alternatives. Alternative having minimum cost with reasonable return compare to other is acceptable. The cost of capital concept occupies a pivotal place in the theory of financial management as a criterion of allocating capital. The cost of capital refers to the discount rate that would be used in determining the present value of the estimated future cash proceeds and eventually deciding whether the project is worth undertaking or not *(Bagges, 1963)*. The concept of cost of capital is significant not only as investment criteria but can also be used to evaluate the financial performance of the top management *(Bhattacharya, 19701)*.

In addition, the cost of capital concept helps management in moving towards its target capital structure or optimal capital structure. Provided there exists relationship between the two, capital and cost of capital both are important in maximizing the wealth of the shareholder.

The firm's objective to maximize the wealth of the shareholder or return on equity is not meet by the Nepalese companies because in most of the companies there is no existence of debt in their capital structure and equity capital is only one source of financing. While in some cases, the proportion of debt is very high that creates the excess burden to the firm. Use of debt financing in the capital structure is very poor in banking sector. 'Most of companies have debt capital relatively very higher than equity capital; consequently most of them are operating at losses to the extent that payment of the interest on loan has been serious issues. Most of the losses are after changing interest on loan (*Shrestha, 1993*).

From the above discussion, it is cleared that capital structure concept is not taken seriously by Nepalese companies. Therefore optimal capital structure is not in existence at all. Cost of capital concept is not clear in Nepalese companies because it is impossible to minimize the average cost of capital without proper combination of capital structure components in financing of the firm. Determining the cost of capital is major problem in Nepalese companies. “It is in fact, an important measuring variable in the financing process of various companies for expanding the volume of companies.

Management is not able to analysis cost of capital properly in their firm for investment decision making (*Shrestha, 1993*).

1.1.1 Investment Policies of Commercial Banks

Investment operation of commercial banks is very risky one. A sound investment policy of a bank is such that it’s fund are distributed in different types of assets with good possibility on the one hand and provides maximum safety and security to the depositors and banks on the other hand. Moreover, risk in banking sector tends to be concentrated in the loan portfolio. The type of loan a bank makes, the amount of money invested as a loan and the sectors where the bank provides loan are the most important factors which affect the investment policies of a bank.

The income and profit of the bank rely upon its lending procedure and investment of funds on different securities. The greater the credit created by a bank, the greater will be the profitability. A sound lending policy is not only prerequisite for a bank’s profitability, but also crucially significant for the promotion of commercial saving of a backward country like Nepal.

Investment policy is one fact of the overall spectrum of policies that guide its investment operations. A sound and viable investment policy can be effective

one for the economy to attain the economic objectives directed towards the acceleration of the pace of development. A good investment policy attracts both borrowers and lenders, which helps to increase the volume and quality of deposits, loan and investment. Sound investment policy can minimize non-performing assets, which cause the bank failure. Good investment policy ensures maximum amount of investment to all sectors with proper utilization.

1.2 Statement of the Problem

At the present context, political and economic condition of the country is not satisfactory. The unstable political and economic condition has limited the investment opportunities. Due to which, there is ample amount of idle money in the country, which flow into banks as deposits. At the same time, there are very few profitable sectors where a bank can invest. This has forced the banks to lower down their interest rates to discourage deposit and, at the same time, to encourage loan and advances. This has decelerated the pace of economic development.

Another problem facing by the banking industry is the lack of sound investment policy of the commercial banks. The success and prosperity of a bank relies heavily upon the successful utilization of the collected resources that is deposit. Successful formulation and effective implementation of investment policy is the prime requisite for the successful performance of a commercial bank.

Yet another problem facing by the banking industry is lack of sound knowledge and application of capital structure and cost of capital concept in their operation. Though Nepalese investors are attracted towards investing in the banking sector, it can be viewed that the banks are using very low or no amount of debt finance in their total capital structure. This has avoided them from taking the benefit of other wise low average cost of capital. While the capital structure and the cost of capital help to maximize the value of the firm, the relationship between them in

underdeveloped counties like Nepal is not yet clearly know. There are few studies conducted within Nepal but most of the study is based on only financial ratio analysis except for Adhikari's study. It is the subject of curiosity for the students, researches, businessmen and other interested parties to know what is the actual position of the companies or banks regarding theories of capital structure and cost of capital. Therefore to meet the desire, this study is devoted to examine the relationship between capital structure and cost of capital, established by the scholars, in companies and banks. This study specially deals with the following problem.

- Whether or not there is effective relationship between cost of capital and capital structure in selected banks?
- Whether or not cost of capital declines with leverage in selected banks?
- How does leverage affects the cost of equity in listed Banks?
- Whether or not debt equity ratio affects the profitability of selected banks?
- Whether or not the other factors except capital structure affect the cost of capital in listed banks?

1.3 Objectives of the Study

The major objective of this study is to analyze the effect of the capital structure on cost of capital in the context of Nepal. However the following specific objectives are set in this study.

- To study relationship between cost of capital and capital structure of selected banks.

- To analyzed the relationship between cost of equity and leverage of selected bank.

- To test the relationship between profitability and the debt equity ratio.

- To examine the effect of other factors such as size of firm, growth, DPS and Liquidity on cost of capital

- To provide suggestions on the basis of finding for further growth of the banks under study.

1.4 Scope of the Study

In the context of Nepal, there is less availability of research works, journals and articles in the field of cost of capital & capital structure and activities of commercial banks as well as other financial institutions. As it is a well known fact that the commercial banks can affect the economic condition of the whole country, the effort is made to highlight the capital structure and cost of capital position of commercial banks expecting that the study would provide some information to the management of the bank that would help them to take corrective action. This study can provide information to the shareholders and investors to give decisions while making investments in various banks. Further, this study can also be used as reference material by the shareholders, investors, researchers, government organizations and non-government organizations.

1.5 Organization of the Study

The study has been organized into five chapters, each devoted to some aspects of the study of capital structure. Chapter one deals with major issues to be investigated along with background of the study, statement of the problem, and

objectives and scope of the study. Chapter two includes a discussion on the conceptual framework and review of the major empirical works as well as review of Nepalese studies. The conceptual considerations and review of related literature conducted in this chapter provides a framework with the help of which the study has been accomplished. Chapter three describes the research methodology employed in the study. This chapter deals with research design, nature and sources of data, and data analysis tools. Chapter four consists of presentation and analysis of data, which deal with the empirical analysis of the study. Chapter five indicates the summary, conclusions and recommendations of the study.

1.6 Limitation of the Study

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

- The study is mainly based on secondary data.
- The study is based on the data of 6 years only.
- Out of the numerous affecting factors only those factors related with capital structure are considered.
- Out of 25 commercial banks, only 4 banks are taken into account to do the comparative study.
- This study is concerned with capital structure and cost of capital of selected four banks only.

CHAPTER 2
REVIEW OF LITERATURE

2.1 The Conceptual Framework

This section is devoted to discuss briefly about the theoretical concept regarding the cost of capital, financial leverage and the theories of capital structure.

2.1.1 Concept of Cost of Capital

Cost of capital is the minimum amount, which must be paid annually or at any periodical interval (other than principal) to the investor or creditor. It is minimum required rate of return of an investment which must be earned by a project remain unchanged its value or wealth

The term “cost of capital” is used in different senses. In the past it was frequently used to refer to the cost of specific sources of capital, such as the cost of debt, the cost of equity etc. When used in this sense, the term carried the implication that, in order to accept or to reject the proposed projects, their profitability should be evaluated on different cost bases depending on the specific sources of funds used to finance particular project. It has been however recognized recently that this position contained a basic fallacy. A firm’s decision to use debt capital to finance its projects not only adversely affects its potential for using debt in the future by proportionately lowering its equity base, but also creates financial risk to the shareholder. Such risk in turn will influence the cost of equity, which moves upward. Similarly, a firm’s decision to use equity capital for financing its projects would enlarge its potential for borrowing in the future. Because if this connection between the method of financing and their costs. It has been now agreed that the term cost of capital should be used in the composite sense i.e. weighted average cost of capital *(Barges, 1963).*

It is this average cost which is used as an acceptance criterion to be applied to investment projects. An investment project, for acceptance, must earn minimum rate of return equal to the marginal weighted average cost of capital. In this sense, the cost of capital represents a standard for allocating the firm's funds in the most optimum manner. In theory, it is the rate of return of a project that will leave the market value of the shares unchanged.

The cost of capital is an important element as a basic information in capital investment decision. The cost of capital can be looked in slightly different prospective *(Joy, 1977)*. In the operational term, it refers to the discount rate or minimum rate of return that a firm must earn on its investment for the market value of the firm to remain unchanged. In economic term, there are two approaches to define the cost of capital. Firstly it is the cost of acquiring the funds required to finance the proposed project. That is, the cost of capital is the borrowing rate. Secondly, in terms of lending rate, it may refer to the opportunity cost of fund for the firm, that is what firm could have earned by investment funds elsewhere. A project will be accepted if it has positive net present value, in the present value method, when the future cash inflows are discounted at the cost of capital. In internal rate of return method, the project will be accepted if it has a rate of return greater than the cost of capital. In spite of these, the cost of capital is the standard against which the prospective investment project is compared. Hamptom John J. *(Hampton, 1977)* defines the cost of capital as the rate of return, the firms required from an investment in order to increase the value of the firm in the market place. Van Horne *(Van Horne,1990)* preferred to say about the cost of capital in the following words," the cost of capital in terms of discount rate to serve as vehicle to judge the alternatives of an investment opportunity." Cost of capital, also known as capitalization rate, discount rate, hurdle rate, cut off rate, minimum rewired rate of return, opportunity cost etc. that equates the net cost proceeds, the firm receives with the present value of the capital supplies.

As discussed, the cost of capital concept is of vital significance in the financial decision making of a firm, but there are number of problem attached to it. The first problem concern the measurement of the cost of specific sources of capital, and it is necessarily. The cost of specific source of finance may by defined as the discount that equates the present value of the funds received by the firm, net of under-writing and other costs, with the present value of expected outflows. These outflows may be interest payment, repayment of principal or dividends. Thus, the explicit cost of specific sources of financing can be determined by solving the following equation for K

$$I = \frac{C_1}{(1+K)^1} + \frac{C_2}{(1+K)^2} + \frac{C_n}{(1+K)^n}$$

$$I = \sum_{t=1}^{n} \frac{C_t}{(1+K)^t} \qquad \text{..... 2.1}$$

Where,

I = Outflows of funds at period 0;

Ct = Cash flow at time t;

N = Time duration over which the funds are provided,

K = Cost of capital

It is clear from the above equation that the cost of capital is the minimum rate of return, which the firm must earn through the environment, which equates the cash outflows with the cash inflows, of on investment. The cost of each component of capital is the component cost of capital and overall cost of financing of an organization is known as weighted or composite cost of capital. Capital component includes various types of debt, preference share, equity capital (including retained earning and other general resources and surplus).

Therefore, any net increase in assets must be financed by an increase by an increase in one or more capital components. The symbols of the component cost of capital under this study are as follows;

K_d = before tax component cost of debt

$K_d(1-t)$ = after tax component cost of debt, where "t" is the marginal tax rate

K_{ps} = component cost of preferred stock

K_r = component cost of retained earnings

K_e = component cost of equity capital

K_o = weighted / overall cost of capital

2.1.1.1 Cost of Debt Capital

The cost of funds raised through debt in the form of debenture or loan from financial institutions can be called cost of debt. It is easy to calculate because amount of interest is known and fixed by the agreement between lender and the firm. Component cost of debt rate is calculated by dividing the amount of interest by the total amount of loan provided or it is the ratio of interest and principal i.e.

$$K_d = \frac{\text{Total amount of interest}}{\text{Total amount of principal}} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad 2.2$$

The above equation provides the before tax annual interest rate. The cost of debt is tax deductible. Thus, after tax cost of debt is less than before tax. It is equals to the before tax cost of debt times one minus corporate tax rate i.e.

2.1.1.2 Cost of Perpetual Debt

Perpetual debt refers to the issue of debenture, which will not be redeemed during the life of the company. The cost of perpetual debt can be calculated as

After tax cost of debt = k_d (1-T) ……. 2.3

2.1.1.3 Cost of Redeemable Debt (Maturity Year)

In the case of calculation of cost of redeemable debt, repayment of the principal has to be taken into account, in addition to interest payments. It is calculated by using following formula.

$$K_d = \frac{int + (Rv-Po)/n}{(Rv-Po)/2} (1-t) \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad 2.4$$

$$P_o = \frac{Int_1+I_1}{(1+K_d)^1} + \frac{Int_2 + I_2}{(1+K_d)^2} + \ldots\ldots\ldots + \frac{Int_n + I_n}{(1+K_d)^n}$$

Where,

Int = annual interest

Rv = redeemable value

T = tax rate

Po = net proceed from sale of security

I = Installment

2.1.1.4 Cost of Preference Share Capital

The cost of preference share capital may be defined as the dividend expected by preference shareholders. Preference stock has some characteristics of common stock and some of bond. Dividend of the preference stock is fixed and in cost

calculation, it is treated as debt. The cost of preferred stock is a function of its stated dividends like the rate of interest. The computation of the cost of preference shares is conceptually difficult as compared to the cost of debt. In the case of debt, as shown above the interest rate is the basis of calculating costs because payment of specific amount of interest is a legal commitment on the part of the firm. But there is no such obligation in regard to preference dividend. Although, It is true that a fixed dividend rate is stipulated on preference shares and that the holder of such shares have a preferential rights as regards payment of dividend as well as return of original investment, as compared to the ordinary shareholders. There are two types of preference shares: irredeemable and redeemable.

2.1.1.4.1 Cost of Irredeemable Preference Shares

The cost of irredeemable preference shares, which has no specific maturity date, is calculated by using the preference share valuation model given below:

$$P_{so} = \frac{D_p}{(1+K_{ps})^1} + \frac{D_p}{(1+K_{ps})^2} + \cdots\cdots + \frac{D_n}{(1+K_{ps})^n} \quad \ldots\ldots\ldots\ldots \quad 2.5$$

Where,

P_{so} = market price of preferred stock

D_p = dividend paid to the preferred stock

K_{ps} = cost of preferred stock

The cost of preference capital equals to

$$K_{ps} = K_p/P_s \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad 2.6$$

Equation slightly modified in the presence of flotation cost

$$K_{ps} = \frac{D_p}{P_{so}(1-f)} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad 2.7$$

2.1.1.4.2 Cost of Redeemable Preference Capital

The cost of redeemable preference share is the discount rate that equates the net proceeds of the sale of preference shares with the present value of the future dividends and principal repayment. The appropriate formula to calculate cost is given below

$$P_o(1-f) = \frac{D_1}{(1+K_p)^1} + \frac{D_2}{(1+K_p)^2} + \frac{D_n}{(1+K_p)^n} + \frac{P_n}{(1+K_p)^n}$$

$$P_o(1-f) = \sum_{t=1}^{n} \frac{D_n}{(1+Kp)^t} + \frac{P_n}{(1+Kp)^n} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad 2.8$$

Where,

P_o = expected sale price of preference shares

F = flotation cost a percentage of Po

D = dividends paid on preference shares

D_n = repayment of preference share capital amount

2.1.1.5 Cost of Equity Capital

The cost of equity is defined as the minimum rate of return that a firm must earn on the equity financed portion of its investment in order to leave unchanged the market price of its stock. Measurement of cost of common stock is more difficult

and controversial. Common stock and the retained earning are the parts of equity capital. Common stock means proceeds received from the issue of equity. But a retained earning is the retained portion of earnings of the firm.

2.1.1.5.1 Cost of Retained Earning (Internal Equity)

Cost of retained earning is the opportunity cost of the shareholders because when the firm decided to retain the current earning in the firm, the shareholders give up their cash dividend. Thus, they accept that the firm should earn the same rate of return on retained earning as it earning on common equity. That means, the cost of retained earning (K_r) is equal to the rate of return on common stock (k_e). Thus in the absence of flotation cost, the cost of retained earning and the cost of common stock is same.

2.1.1.5.2 Common Stock (External Equity)

Cost of new common equity is the rate of return, which is required by the shareholder. Due to flotation cost, the cost of common stock is greater than the cost of retained earnings.

2.1.1.5.3 Approaches to Calculate the Cost of Equity

a) Gorden Model or Dividend Yield Approach

The model can be used to estimate the rate of return investors required on equity. Dividends are expected to grow at a constant rate for ever and the rate of return on equity, K_e, is greater than growth rate, g of dividends.

Gorden model is as follows;

$K_e = d_1/P_o + g$ …… 2.9

Where,

K_e = cost of internal equity

D_1 = year end expected dividend

P_o = current market price of common stock

g = growth rate of dividend

b) Earning Model Or Earning Yield Approach

According to this model, the cost of equity capital, K_e, is equivalent to the rate, which must be earned after incremental issue of ordinary share so as to maintain the present value of investment intact. In other word, cost of equity capital is measured by earning price ratio *(Ezara, Soloman, Theory Of Financial Management, 1969)*, i.e.

$K_e = E_o/P_o$ …… 2.10

Where,

E_o= current earning per share;

P_o= current market price per share

Cost of New Common Equity

$K_e = D_1/P_o(1-f) + g$

$= D_1/P_n + g$ ……..…….…… 2.11

Where,

P_n= Net price paid to the stock

D_1= year end expected dividend

F = flotation cost

G = growth rate

K_e= cost of equity

c) Capital Assets Pricing Model (CAPM)

Sharpe and Linter developed this model in 1960. The model explained the relationship between the expected return, unavoidable risk and the valuation of securities. The greater the unavoidable risk of security, the greater is the return expected by the investor from the security. Hence, in case the security doesn't provide adequate return to commensurate with its unavoidable risk, the security will not find favor with the investor and thus its market value will fall.

With reference to the cost of capital prospective, the CAPM describes the relationship between the required rate of return or the cost of equity capital and the non-diversifiable or relevant risk of the firms as reflected in its index of non-diversifiable risk i.e. beta symbolically *(Khan And Jain Financial Management , 1992)*.

K_e = Rf + (Km + Rf)b ……..…….…… 2.12

Where,

K_e = cost of equity capital

Rf = the rate of return required on risk-free assets/security/investment

Km = the required rate of return on market portfolio of assets. That can be viewed as the average rate of return on assets.

2.1.1.6 Weighted Average Cost of Capital

The weighted average or composite cost of capital is the weighted average of the cost of various sources of capital. Weight is the proportion of each of the sources used in the capital structure. In financial decision making, the term cost of capital is used in the composite sense because a firm's decision to use debt capital to finance its project will lower its cost but also make more risky. The increased risk to the shareholders will increase the cost of equity. Thus the cost of capital should be used in composite sense. The equation form of the weighted average cost of capital is given below.

$$K_o = W_1K_d + W_2K_{ps} + W_3K_r + W_4K_e \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad 2.13$$

Where,

W1, W2, W3 & W4 are the proportion of debt, preferred stock, and retained earning and new equity respectively. The weight can be expressed in book value or market value but the use of market value weight is more appropriate because it represents the current costs.

2.1.2 Financial Leverage

Leverage refers to the use of assets or sources of funds, which involve fixed cost or returns. As a result, the return to the owners is affected and also their risk. There are two types of leverage: financial and operating.

The financial leverage implies the employment of source of funds, involving fixed return so as to cause more than a proportionate change in earning per share (EPS) due to change in operating profit.

The operating leverage refers to the use of the fixed operating cost to magnify the effect of a given change in the sales revenue on the earnings per share. It affects the total risk of the firm.

The term leverage may be defined as the use of those sources of funds in the business for which the firm has to pay fixed charges, irrespective to the earnings of the firm. Weston and Brigham *(Fred Weston and Brigham, 1981) viewed* financial leverage as the ratio of total debt to total assets or the total value of the firm. Financial leverage refers to the response of shareholders income to change in EBIT (earning before interest and tax) and is created by debt or preferred stock financing with fixed interest and dividend payment *(Lawarandce, and Haley, 1983)*. There are two types of leverage, financial and operating. In financial management, leverage associated with investment activities is called operating leverage and leverage associated with financing activities is called financial leverage.

The use of fixed charged sources of funds, such as debt and preference capital along with the owner equity in the capital structure are described as financial leverage or “Trading on equity” *(Martin, 1963)*. It is derived from the fact that it is the owners equity measured by ordinary share capital and reserve and surpluses that is used as a basis to raise debt and preference capital, the equity that is

traded participation in company's profit and therefore, debt holder will insist on protection in values represented by ownership capital.

Under the favorable condition, the use of debt and preferred stock for financing provided income advantages over common stock of the firm, if it doesn't measure the risk. Thus, a company employs it intending to earn more on the fixed charges funds than their costs. The surplus will increase the return on equity. Due to the interest and principal payment is contractual obligation of the firm; the debt financing is more risky from the viewpoints of shareholders. Therefore, debt offers the greater income advantages as well as risk.

2.1.3 Capital Structure Theory

The capital structure concept has an important place in the theory of financial management. The term capital structure is also known as financial structure of financial plan or leverage. The financial decision of a firm is one of the tools for achieving firm's objectives of shareholders wealth maximization. The term capital structure refers to the proportion of debt and equity capital. Thus, the financial decision of a firm relates to choice of proportion of debt and equity to finance the investment requirement, a proper balance between risk and return to the shareholders. Capital structure with reasonable proportion of debt and equity capital is called optimal capital structure. However, it can be expected that if the capital structure decision affected the total value of the firm, a firm should select such a financing mix, which maximize the shareholders wealth.

The importance of an appropriate capital structure is, thus, obvious. There is a viewpoint that strongly supports the existence of close relationship between leverage and value of a firm. There is an equally strong body of opinion, which believes that financing-mix or the combination of debt and equity has no impact on the shareholders wealth and decision on financial structure is irrelevant. In

other words, there is nothing such as optimum capital structure *(Khan and Jain, 1992)*.

In theory, capital structure can affect the value of the company by affecting either its expected earning or cost of capital or both. While it is true that financing- mix cannot affect the total earning of a firm as they are determined by the investment decision, it can affect the share of earnings belonging to the shareholders. But the leverage can largely influences the value of firm through the cost of capital.

Different views refuting and supporting the effect of capital structure/ leverage on cost of capital or value of the firm have published by the financing expert. This section is devoted to discuss these theories. These theories can be categorized into four important group's (1) Net Income Approach (2) Net Operating Income Approach (3) Traditional Approach (4) Modigliani and Millers Approach. So as to explain the relationship between capital structure and the cost of capital in simplified and systematic manner, the following assumptions have been made:

- Firm employs only two sources of funds long-term debt and equity capital.
- No existence of income taxes. This assumption is removed later.
- Dividend payout ratio is 100%, that is the total earning are paid out as dividend to the shareholders and there are no retained earnings.
- The total assets of the firm are given, issuing debt to repurchased stocks or issuing stocks to pay-off debt can change the degree of leverage.
- The expected values of the subjective probability distribution of expected future operating earning for each company is the same for all investor in the market.

- The operating earning of the firm is not expected to grow. The expected value of the probability distribution of expected operating earning for all future period are assumed as present earnings.

In addition to above assumption, the following symbols are used in analysis of capital structure theories:

S = market value of the equity share

B = Book value of the debt

V = Market value of the firm (i.e. V = S+B)

NOI = Net operating Income (i.e., EBIT)

I = Interest payment

2.1.3.1 Net Income Approach

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

relatively cheaper than equity. For this reason, at constant cost of equity (K_s) and cost of debt (K_d), the overall cost of capital (K) declines with the increased proportion of the debt in the capital structure. This suggests that higher the level of debt, lower the overall cost of capital and higher the value of firm.

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

In summary, as per NI approach, increase in ratio of debt to total capitalization brings about corresponding increase in total value of firm and decline in cost of capital. On the contrary, decrease in ratio of debt to total capitalization causes decline in total value of firm and increase cost of capital. Thus, this approach is appeared as relevancy theory. This approach is based on the following assumptions:

- The cost of equity and debt remain constant to the acceptable range of leverage.
- The corporate income taxes do not exist.
- The cost of debt rate is less than the cost of equity.

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

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

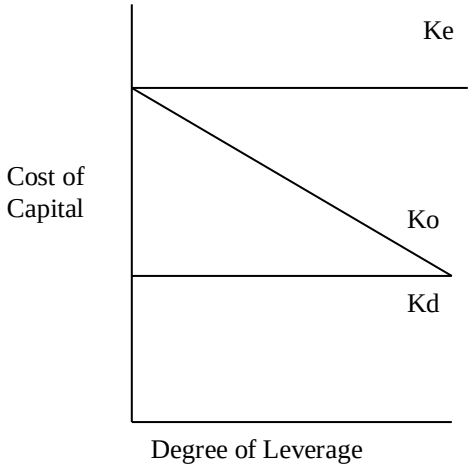

Figure 1: The Effect of Leverage on the Capital Structure

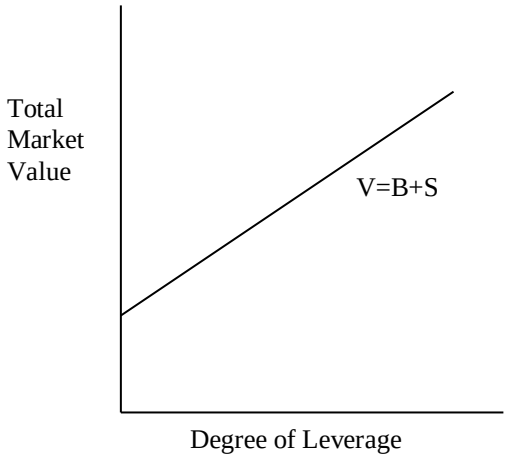

Figure 2: The Effect of Leverage on the Total Market Value of the Firm

Figure 1 shows a continuous decrease in K with the increase in debt-equity ratio, since any decrease in K directly contributes to the value of the firm, it increases with the increase in the debt-equity ratio (figure 2). Thus the financial leverage, according to the NI approach is an important variable in the capital structure decision of a firm. Under the NI approach, a firm can determine an optimal capital structure. If the firm is unleveled the overall cost of capital will be just equal to the equity capitalization rate.

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

2.1.3.2 Net Operating Income Approach (NOI)

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

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

The NOI approach is based on following assumptions:

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

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

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

- The debt-capitalization rate, K_d is constant.

- The corporate income taxes do not exist.

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

$$K_S = K + (K - K_d)\, B/S$$

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

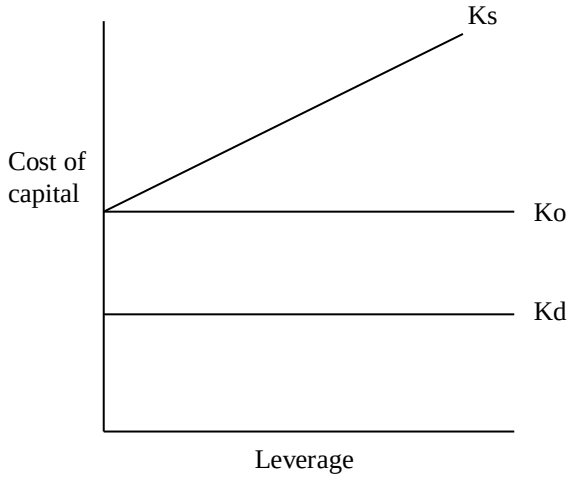

Figure 3: The Effect of Leverage on Cost of Capital

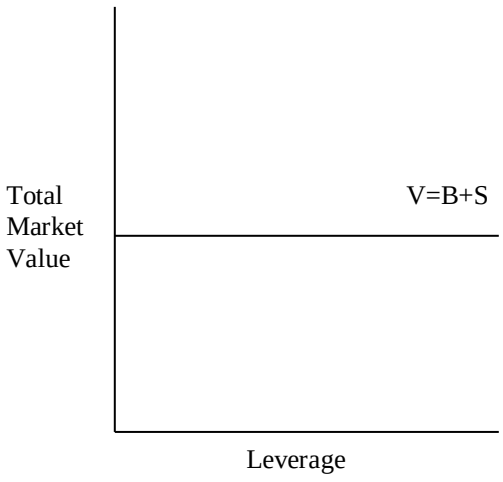

Figure 4: The Effect of Leverage on Total Market Value of the Firm

In the figure 3 above, it is shown that the curve K_o and K_d are parallel to the horizontal X-axis and Ks is increasing continuously. This is because K_o and K_d remain constant under all the circumstances but the Ks increases with the degree of increase in the leverage. Thus, there is no single point or range where the capital structure is optimum. We know obviously from the figure 4 that under the NOI approach, as low cost of debt is used, its advantage is exactly offset by increase in cost of equity in such a way that the cost of capital remains constant. By this, value of the firm also remains constant. At the extreme degree of financial leverage, hidden cost becomes very high hence the firm's cost of capital and its market value are not influenced by the use of additional cheap debt fund *(Gitman Lawrence, 1988)*.

2.1.3.3 Traditional Approach

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

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

The statement that debt funds are cheaper then equity funds carries the clear implication that the interest rate of debt plus the increased yield on the common

stock, together on the weighted basis will be less than yield (cost of equity) which existed on the common stock before debt financing *(Barges, Alexander, 1963)*. That is the weighted average cost of capital will decrease with the use of debt up to a limit.

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

First stage: Increasing Value

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

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

Second Stage: Optimum Value

In the second stage, further application of debt will raise cost of debt and equity capital so sharply as to offset the gains in net income. Hence, the total market value of the firm would remain unchanged. While the firm has reached a certain degree of leverage, increase in it has a negligible effect on the value of the firm

or overall cost of capital of the firm. The increase in the degree of leverage increases the cost of equity due to the added financial risk that offsets the advantage of low cost debt. Within the range of such debt level or at a specific point, the value of the firm will be maximum or the cost of capital will be minimum.

Third Stage: Declining Value

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

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

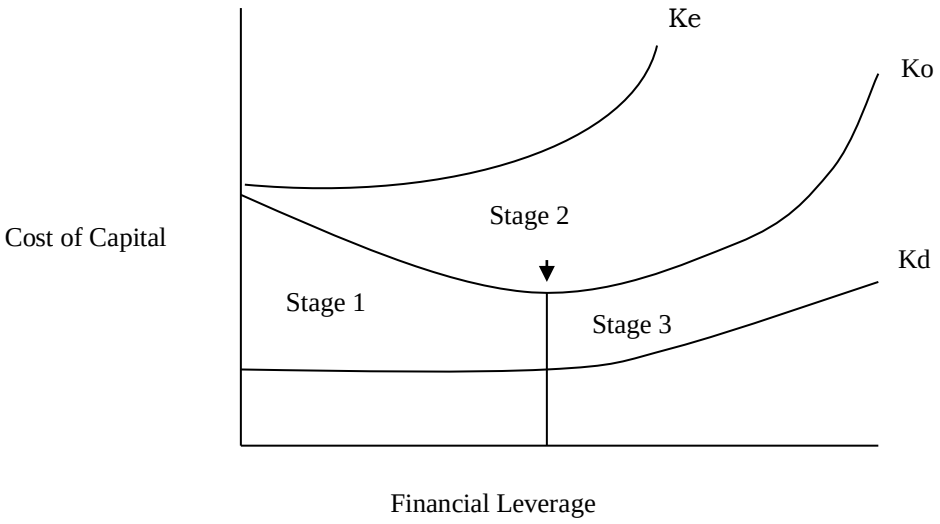

Figure 5: Effect of leverage on cost of capital under traditional theory

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

2.1.3.4 Modigliani-Miller Approach (M-M approach)

The Modigliani-Miller thesis *(Modigliani and Miller, June 1958)* relating to the relation is akin to net operating income approach. MM approach, supporting the net operating income approach, argues that, in the absence of taxes, total market value and cost of capital of the firm remain invariant to the capital structure changes. They make a formidable attach on the transitional position by offering behavioral justification for having the cost of capital, K, remain constant through all degree of leverage. MM contend that cost of capital is equal to the capitalization rate of a pure equity stream of income and the market value is ascertained by capitalizing its expected income at the appropriate discount rate of its risk class. MM position is based on the idea that no matter how you divide up the capital structure of a firm among debt, equity and other claims, there is a conversion of investment value. However, the following assumptions regarding the behavior of the investors and the capital market, the actions of the firms and the tax environment are crucial for the validity of the MM hypothesis.

1. Perfect capital markets: The implication of perfect capital market is that securities are infinitely divisible, investors are free to buy and sell

securities, investors can borrow without restrictions on the same terms and conditions as firms can, there are no transaction costs and investors are rational and behave accordingly.

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

3. Firms distribute all net earning to the shareholders, i.e., divided payout ration is 100 percent.
4. There are no taxes. This assumption is removed later.

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

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

Proposition I

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

$$\text{Value of the Firm} = \text{Market Value of Debt (B)} + \text{Market Value of Equity (S)}$$

$$= \frac{\text{Expected net operating income}}{\text{Expected overall capitalization rate}}$$

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

For an unlevered firm,

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

Where

$K = K_s$ in case of unlevered firm.

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

$$K = \frac{NOI}{S+B}$$

$$= \frac{NOI}{V}$$

K can also be expressed as

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

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

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

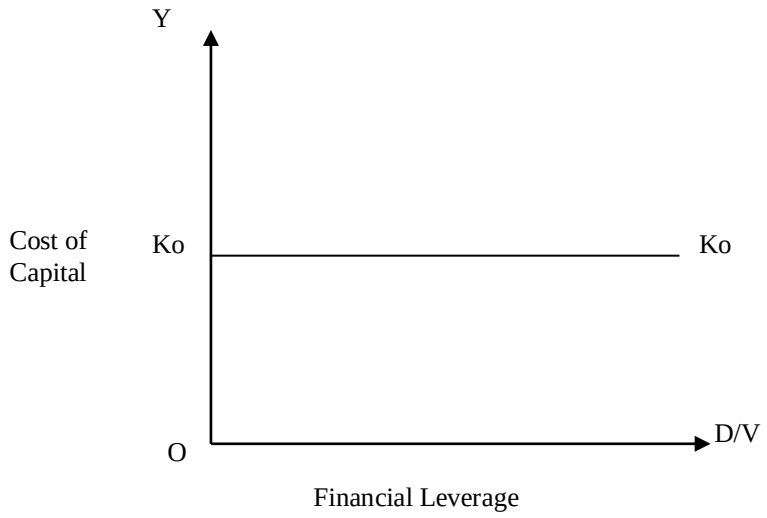

Figure 6: The Cost of Capital under the MM hypothesis

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

Proposition II

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

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

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

$$K_S = K(I + \frac{D}{S}) - \frac{K_d(D)}{S}$$

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

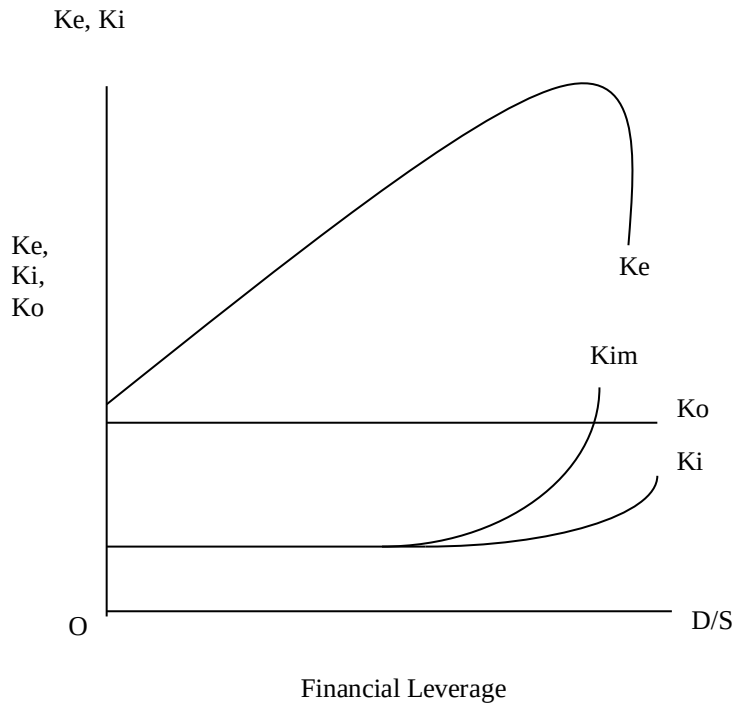

Figure 7: Behavior of Ko, Ki and Ke under M-M hypothesis

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

2.2 Empirical Studies

This section contains a comprehensive review of relevant studies related to the topic. It reviews some basic academic course book, research-based journals and other related studies on it. Mainly the studies syndicated by Modigliani and miller (2958) and (2966), western (1963), Barges (1963), Wippern (1966), Sharma and Rao (1969), Davenport (1971), Pandey (1961), and others are reviewed here.

2.2.1 The Modigliani and Miller First Study

In their first study, M-M used the previous works of Allen and smith in support of their independence hypothesis. Allen's study was consisted with the relationship between security yield and financial structure for 43 large electric utilizes, based on average figures for the year 1947 and 1648, while Smith designed his study of 42 oil companies to test whether Allen's striking results would be found in an industry with very different characteristics based on only single year 1953. In the first part of their work they tested their proposition I, the cost of capital is irrelevant to the firm's capital structure, by correlation after tax cost of capital, X/V with leverage, D/V. they used the following regression model to test their hypothesis.

$$X = a + bd$$

Where,

X = Xt/ V = sum interest, preferred dividends and stock holder's after tax income / market value of all securities

$$D = D/V = \frac{\text{market value of senior securities}}{\text{Market value of all securities}}$$

The regression results were as follows:

Electric utilities

$X = 5.3 + .006d$ $\quad R2 = 0.12$

$(\pm\ 0.008)$

Oil companies

$X = 8.5 + .006d$ $\quad R2 = 0.04$

$(\pm\ 0.024)$

These tests support their hypothesis of independence, as correlation co-efficient is statistically insignificant and positive in sign. The reversion line does not suggest a curve-liner, u-shaped, cost of capital curve, when the dates are shown in scatter diagrams.

In the second part of M-M's study, they tested their proposition II that the expected yield on common shares is a linear function of debt to equity ratio, D/S. they used following models.

$$Z = a + bh$$

Where,

$$Z = \frac{\text{shareholders net income after tax}}{\text{Market value of common shares}}$$

$$h = \frac{\text{Market Value of Seniors Securities}}{\text{Market value of common shares}}$$

The following regression results were obtained:

Electric Utilities;

$$Z = 6.6 + 0.017h$$

(+ 0.004) R2 = 0.53

Oil Companies;

$$Z = 8.9 + 0.051h$$

(+ 0.012) R2 = 0.53

Both co-relation coefficient are significant and positive, t value for h coefficient is 4.25 in both the cases, Electric utilities and oil companies, which is significant at 5% level of confidence. Thus the M.M.'s view is supported.

Their next step was to add the square of the leverage term to test the presence and direction of curvature. The following estimates were obtained.

Electric utilities

$Z = 4.6 + 0.064h - 0.007h^2$

Oil companies

$Z = 8.5 + 0.072\,h - 0.016h^2$

In both the cases the curvature is negative. For the electric utilities, the negative coefficient of the square term was significant at the 5% level. This result is consisting with their view, i.e. the cost of borrowed funds increases; the cost of equity will decline to offset this increase. Thus these results don't support traditional position.

2.2.2 The Barges Study

Barges conducted the empirical test of relationship between average cost of capital and leverage and between the stock yield and debt equity ratio with improvement on some of the limitation of the M-M's empirical work. For the study purpose, he utilized cross-section data form three different industries: railroad, departmental stores and cement industries.

For the railroad industry, he performed both yields, as was the average cost of capital tests. The average cost was computed dividing the three-year average

income before interest (1954-56) by the average total market value. He used the ratio of long term debt to total permanent capital, at book values as the measure of financial structure. He fitted second degree (U –shaped) curve to the data of 61 railroads. Results obtained were as follows:

$$Y = 12.39 - 0.22 - 44x + 0.00258x^2$$

The result suggest that the average cost of capital first tends to decline and then tends to rise as the debt capital increase in the capital structure.

To bring more homogeneity into the samples and exactness in the result, Barges selected five sub samples from the railroad industry sample in such a manner that one important variable was held constant. The five sub samples selected in this way consist of 25 small class railroad (remain less than $50 millions) 16 controlled railroad, 47 listed railroad, 21 eligible railroad, and 36 large railroad (revenue more than $50 million) except for the large rail sample least squares curves were flitted to cash sub sample and significant result were obtained as follows:

$$Y = a + b\,x_1 \qquad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad (1)$$

$$Y = A + b\,x_2 \qquad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad (2)$$

Where,

Y = stock yield

X_1 = long term debt / preferred stock plus common equity

X_2 = long term debt plus preferred stock / common equity

The following results were obtained for the railroad industry:

Model I

$y = 11.36+0.0194X_1$ R = 0.173

Model II

$y = 10.80+0.02386X_2$ R2 = 0.293

As reported by him, in model I, the correlation coefficient is not significantly different from zero, at the 5% level, while for model II, the coefficient is significantly positive at 5% level.

He also ran regression for those observations, which had a moderate leverage ratio. The results were not significantly different from zero. Regressions were run by including the square of the leverage term but the second-degree curves were found to be almost identical to the straight line results. Thus, we find that these results neither support nor contradict the M-M hypothesis.

In this study of the department store industry, leverage ratios were compared in the same manner in the railroad study. Sock yield was calculated by taking the average of earning per share for 1995 and1996 and dividend by the market price per share of 1956. Results were as follows:

Model I

$Y = 10.077 + 0.0497X_1$ R = 0.068

Model II

$Y = 10.21 + 0.03756X_2$ R2= 0.056

The result is not statistically significant thus, the result support to the traditional view.

Barges' final test was on cement industry. The sample consisted of 34 companies and was of special interest because there were a large number of observations with little or no debt. The variables were estimated in the same manner as in the case of the department store study and the result were as follows:

Model I

$Y = 9.01 + 0.0107X_1$ $R = -0.12$

Model II

$Y = 7.79 + 0.0016X_2$ $R2 = 0.018$

The correlation coefficient in both the cases is not significant at 5% level. Thus, Barges again concluded that the traditional view was supported.

2.2.3 The Western Study

The main contribution of western's study is the specification improvement of the cost of capital model. He introduced firm size (measured by assets) and growth (per share income over a ten year period) as additional explanatory variables in his model. He found the regression coefficient of leverage to be positive and significant, when he used M-M model for his sample of 54 utilities in 1959. However, when the, multiple regressions were run, the following results were obtained.

$X = 5.91 - 0.0265d + 0.0A - 0.0822E$

(0.0079) (0.001) (0.0024)

$R = 0.5268$

Where,

d = the market value of debt ration

A = the size of the firm interns of total assets

E = the earning per share growth over a period of 10 years.

The correlation coefficient is significant and the regression coefficient of leverage is negative and significant. Thus, when the influence of growth is isolated, leverage is found to be negatively correlated with the cost of capital. Western concluded that the apparent lack of influence of leverage on the overall cost of capital observed by Modigliani and Miller was due to negative correlation of leverage with earning growth. When the net effects were measured, the cost of capital was found to be significantly negatively correlated both with the leverage and growth.

Western also tested M-M's proposition II. When he used their model, his result were found to be consistent with their i.e. cost of equity was a liner function of leverage, however, when he included growth and size variables the following results were obtained:

$$Z = 6.75 - 0.0029h + 0.1352E$$

$$(0.0153)\ (0.0002)\ (0.0454)$$

$$R2 = 0.4032$$

$$h = 39.59 - 1.16E$$

$$(0.29)$$

$$R2 = -0.48$$

The results clearly shows that growth and leverage is negatively correlated with Z – the ratio of shareholder net income after taxes and market value, of common stock and when growth is included on the regression equation, coefficient of leverage becomes in significant. Thus, the results are consistent with the traditional view.

2.2.4 The Modigliani and Miller Second Study

Modigliani and Miller conducted their second study *(Miller and Modigliani, June, 1966)* in 1963 correcting their original hypothesis for corporate income taxes and expected cost of capital to be affected by leverage for its tax advantages. They wanted to test whether leverage had tax advantage or not. For this purpose, they used their three years data, viz.1965, 56 and 57 of 63 electric companies. M.M. conducted the mathematical analysis regarding the effect of leverage and other variables on the cost of capital. The equation is follows;

$$V = I/P\ \bar{x}\ (1-T) + tD + K\ \bar{x}\ (1-t)\ [(P-C)/\{C\ (1+C)\}]\ T$$

Where,

P = k = market's capitalization rate for the expected value of in certain, pure equity earning stamps.

X = firm's expected total earnings

T = t = the (constant) marginal and average rate of corporate taxation

D = debts of the firm

C = P = cost of capital

P = profitability rate of new investment

They omitted dividend variable from their valuation equation because of the confounding of the earning and dividend co-efficient. For the testing purpose, they used the following regression equation model

$$(V- tD) = a_0 + a_1 \bar{x} (1-t) + a_2 \bar{\Delta} A + u$$

where,

a_0 = an intercept term whose size and sign will measure any effects of scale on valuation.

a_1 = the marginal capitalization rate for pure equity streams in the class.

a_2 = an intercept term whose size and sign will measure any effects of scale on valuation.

U = a random disturbance term

$\bar{\Delta}$ = $\{1/5 (A_t – A_{t-5})\} / A_{t-5}$

A_t = a linear five year average of total assets times current total assets.

In connection with their regression equation they observed that since, the theory implies that the co-efficient of the leverage variable, D, is equal to the marginal tax rate, t, we have so constrained it is the above equation by incorporating it with the dependent variable. Before using their regression equation they resolved the problem of hetroscedasticity by dividing it by the book value of total assets. The equation was used in the following form:

$$\frac{V – tD}{A} = a_0 \frac{1}{A} + a_1 \frac{x (1-t)}{A} + a_2 \frac{\bar{\Delta} A}{A} + U$$

Form the result this equation they concluded that these finding are in agreement with their hypothesis that the leverage factor is significant only because of the tax advantage involved.

They also tested their regression equation in its yield form,

$$\frac{x\,(1-t)}{V-tD} = a_0 + a^1_0 \frac{1}{v-tD} + a^1_2 \frac{\bar{\Delta} A}{V-tD} + U$$

Where,

A_1^1 = P = the reciprocal of the capitalization rate for pure equity streams (or equivalently, the marginal cost of equity)

$A_0^1 = a_0 p = a_2 p$

And $U^1 = P \frac{V}{C(v-ta)}$ With var (U^1)

Approximately a constant for all firms. They argue that this equation was used only to check their results obtained in other ways.

2.2.5 The Wippern Study

Wipper has also conducted a test of the relationship between leverage and the cost of capital by running regression on the data of 50 firms from seven manufacturing industries in the years 1956,1958,1961 and 1963 *(Wippern, Dec. 1966)*. He tried to eliminate the principle problem of empirical study on the alternatives in determining the relationship between leverage and cost of capital. He urged that the leverage either the ratio of debt to equity at book values or at market values both of these measures contains important conceited basis. He therefore, used a different measure of leverage. VIZ. I/e =25, where 'I' is the current level of fixed charges; E is the most recent years cash flow operating

income determined from a logarithmic regression of income on time over ten years period and 25, is equal to two standard error around the regression line. He has also included uncertainty variables in his test equation to account for the inter-firm differences. He therefore has been assumed in past investigation that homogeneity of business risk could be achieved by comparing firm in the same industry classifications. Besides these, he employed some proxy measures based on objectively determined data, and argues that the capitalization rate equates future earning to current market prices are not directly measurable.

The following equation was used to cost of capital hypothesis:

$Y = a + b_1$leverage $+ b_2$ growth $+ b_3$ payout $+ b_4$ log of size $+ b_5 \ldots\ldots\ldots + b_{10}$ industry dummy variables.

Y = earning / price ratio

He concluded that shareholder wealth could be enhanced by a judicious use of debt financing.

2.2.6 Sharma and Rao Study

Sharma and Hanumanta Rao *(Sharma and Rao, Sep. 1969)* also tested the M-M hypothesis. They followed their 1966 article with little modification and employed two stage least square method on the data of 30 Indian engineering firms for three years. They argued that estimate of cost of capital arrived at through this model will be accurate only when their hypothesis on debt and dividends are correct, this is an essential condition for the employment if this model. Calculate of variables were done in exactly the same ways as done by M-M with two expectation. They experimented with total assets and sales for deflecting the variables and the results were meaningful when fixed assets were used as the deflator. They argued that when the growth rates of total asses or fixed assets

were used as the growth variable, the result was somewhat inconsistent with economic reasoning. They, therefore, took the earning growth rate as the growth variables because this would take into account growth of earning due to both the utilization of existing capacity and the addition of operating capacity.

They found the co-efficient of debt variables to be more that t, the cooperate income tax rate, they introduce debt as a separate independent variable. The equation they used is,

$$\frac{V}{f} = a_1 \frac{Xr\text{-}tR}{F} + a_2 \frac{1}{F} + a_3 \frac{Xr\text{-}tR}{F} + a_4 \frac{D}{F} + M$$

Where,

V = value of the firm

Xr – tR = expected tax adjusted earning

Δ Xr- tR = growth rate of tax adjusted earning calculate as a liners tree years average growth rate of tax adjusted earning times current tax adjusted earning.

D = debt

F = fixed assets used as a deflator to reduce hetroscedasticity.

They also used two stage least square as method of arriving at the true expected future earnings.

They conducted that debt has tax advantages also. Thus this paper support that the investors prefer corporate to personal leverage and therefore the value of the firm rises up to a leverage rate considered prudent.

2.2.7 The Davenport Study

Davenport *(Davenport, May 1971)* tested the cost of capital hypothesis using British data. Regression equations were estimated for chemicals, food and metal manufacturing industries for 1961, 1962 and 1963. He took 59 firms in chemicals, 28 firms of food and 51 firms in metal manufacturing as sample. He concluded that the results of his study don't support the M-M contention that the overall cost of capital is independent of the proportion of debt and preference share in the capital structure of the firm. They supported the traditional view of cost of capital schedule with respect to leverage as his result shoes the U shape cost of capital schedule with respect to leverage. He stressed the problem of holding constant growth the prospects and the future risk evaluation and raised the question whether an industry was the best sample classification or whether firms might not with advantage are classified into growth and risk classes. Another point stressed is that the choice of years over which cross section regression are run is crucial as it related to the problem of growth and risk variables.

2.2.8 The Rao and Lintzerberges Study

Rao and Lintzerberges *(Rao, and Lintzerberger, April 1970)* also 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 state).

They used 28 Indian utilities and 77 American Utilities. They conducted the study for the five cross sectional years 1962-1966 and used the following regression model to test the M-M is dependence theory.

$$\frac{Xr - tR}{V - tD} = y_0 + y_1 \text{ growth} + y_2 \text{ leverage} + y_3 \text{ payout} + y_4 \text{ size} + M$$

Where,

Xr = the firms after tax operating earning (as average of reported earning for the cross sectional and previous two years is used as a proxy)

T = the corporate marginal income tax rate

R = the firm's fixed interest rate changes for the cross sectional year

D = the market value of the firm's debt at he beginning of the cross sectional year

V = the market value of the firms at the beginning of the cross sectional Year

Leverage = the book value of the firm's senior securities divided by the book value of the firm's long term capital (debt, preferred stock and common stock)

Payout = the ratio of the dividend paid during the cross sectional years and the cross sectional years after tax earnings to a common stock

Growth = the average annual compound rate of growth of total assets at book value over the previous five years

Size = the logarithm of the book value of total assets at the close of the cross sectional year.

M = a random disturbance term

They found that the result for the American utilities are consistent to the M-M proposition that except for the advantages of financing, the cost of capital is

independent of capital structure and the result also supported that the M –M hypothesis i.e. investor are indifferent for the firm's dividend policy.

In case of Indian utilities the results are inconsistent to M-M approached and support the traditional belief, the judicious use of financial leverage will lower the firm's cost of capital and investor have preference for current dividends.

In conclusion they contended that the M –M approached after allowing for the tax advantage of debt; the firm's cost of capital is independent of capital structure does not appear to be applicable in the case of a developing economy.

2.2.9 The Pandey Study

Pandey also tried to test the M-M approach in the developing economy with taking the sample from four different utilities: cotton, chemicals, engineering and electricity, form Indian market. He made some improvement in the model derived by M.M approach and he 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 earning variability and liquidity as risk measure variable in the regression equation. He used two types of leverage as follows:

1 .The debt to total capital ratio, D/V

2. The debt to equity ratio, D/S

These two ratios were measured with or without preference share capital in the debt portion. Both leverages were done on book value and included shot term loan as part of leverage. The regression equation used as follows;

$K_o = a_1 + b_1 l_1 + b_2 \text{logs} + b_3 g + b_4 D/p + b_5 \text{Liq} + b_6 \text{Ev} + U$

Where,

K_o = average cost of capital

l = leverage

S = size

G = growth

D/P = dividend payout ratio

Liq. = liquidity

E.V. = earning variability

U = random disturbance term

In the above, regression equation, the average cost of capital is regressed with both the measure of leverage, i.e. debt to total capital and debt plus preferred stock to total capital, with other explanatory variables and the result were consistent with the traditional view, the average cost of capital declines with increasing debt in financial structure.

He further tried to test the M-M approach that the use of leverage can increasing the market value of the firm or lower the cost of capital due to tax deductibility of interest charges. The tax adjusted stock yield as regressed worth leverage and other explanatory variables. The model of that case was as follows:

$$\frac{X - tR}{V - td} = a + b_1 l_1 + b_2 \text{ logs} + b_3 G + b_4 D/p + b_5 \text{ liq} + b_6 \text{ E.V.} + U$$

Where,

$\frac{X - tR}{V - td}$ = tax adjusted stock yield of the firm

In this model, he used pooled data of three industries; cotton, chemicals, and engineering, and coefficient of both measure of leverage were significant and negative in the sign. Therefore, the result supported the traditional belief.

To determine the relationship between cost of equity and leverage with other explanatory variable he used third regression model, which is as follows:

$$K_e = a_1 + b_1 l_1 + b_2 \text{logs} + b_3 g + b_4 D/p + b_5 \text{Liq} + b_6 \text{Ev} + U$$

Where,

K_e = cost of equity

Calculations of leverage were done in two ways. The first leverage variable considered the preference capital as a part of equity capital i;e

$$L_1 = \frac{\text{LTD+STD +PC}}{\text{E.C+PC}}$$

The second measure of leverage, variable treated it as a part of debt capital i.e.

$$L_2 = \frac{\text{LTD+STD +PC}}{\text{E.C}}$$

Where,

LTD = long term debt

STD = short term debt

PC = preference share capital

EC = equity share capital

The result of this model was also considered to be consistent with the traditional approach, the cost of equity decline with leverage at an acceptable range of debt and then starts to increase with increasing debt in capital structure.

2.3 Related Nepalese Studies

2.3.1 Adhikari Study

Adhikari *(Adhikari, April 1991)* conducted the empirical study of M –M proposition in the Nepalese context. He used simple as well as multiple regression equation to test the relationship between cost of capital and capital structure with other explanatory variables. His study was based on the five listed companies for the period of 1976-77 to 1988-89. For the testing purpose he used the following equations:

$K_o = a_1 + b_1 l_1 + b_2 \text{ logs} + b_3 g + b_4 D/p + b_5 E.V. + b_6 \text{ liq}$

Where,

K_o = average cost of capital

l = leverage

S = size

G = growth

D/P = dividend payout ratio

Liq. = liquidity

E.V. = earning variability

Using the above equation on his study, he concluded that the traditional proposition, cost of capital is the function of leverage is accepted and again stated that the result is not enough to establish the relationship between cost of capital and capital structure because coefficient of determination was very small.

He also tried to test the M-M hypothesis that the use if leverage can lower the cost of capital, due to the tax deductibility of interest charges and concluded that there were no changes in the result between the previous and later.

His last study was based on the cost of equity and debt equity ratio and other explanatory variables. The model used by him was as follows:

$K_o = a_1 + b_1 l_1 + b_2 \text{logs} + b_3 g + b_4 D/p$

In this study using above model, he concluded that the result was not enough to establish the relationship between cost of equity and capital structure.

2.3.2 The Krishna Raj Ghimire study

Ghimire (1999) conducted the study on capital structure and cost of capital in selected listed Nepalese firms. His study was based on two sectors, they were financial sector and non financial sector. For financial sector he selected 3 banks and 1 firm as insurance and finance companies. For the non financial sector he selected 4 manufacturing and processing companies, 3 trading companies and 1 from other. His study was based on in total 11 enterprises for the data of 1991/92 to 1996/97. For the study purpose, he used simple as well as multiple regression models to examine the relationship between capital structure and cost of capital.

For the testing purpose, he used the following multiple regression models.

$K_o = a_1 + b_1 l_1 + b_2 \text{logs} + b_3 g + b_4 D/p + b_5 \text{E.V.} + b_6 \text{liq.}$

Where,

K_o = average cost of capital

I = leverage

S = size

G = growth

D/P = dividend payout ratio

Liq. = liquidity

E.V. = earning variability

Using the above equation or model on his study, he concluded that the capital structure pattern of Nepalese firms are the traditional view and reject the M-M proposition.

The second multiple regress equation was used for the purpose of testing the hypothesis that cost of capital declines with leverage even in the absence of tax deductibility of interest charges. The model was:

$$\frac{X - tR}{V - td} = a + b_1 I_1 + b_2 \text{ logs} + b_3 G + b_4 D/p + b_5 \text{ E.V.} + b_6 \text{ liq}$$

Where,

$\frac{X - tR}{V - td}$ = tax adjusted earning of the firm

By using above model, he concluded that the M-M proposition-I, i.e. the use of leverage can increase the market value of the firm or lower the cost of capital due to the tax deductibility of the interest, is not adopted. However, the result were not able to strongly support the traditional view, i.e. cost of capital declines

with the leverage even in the absence of the tax deductibility of interest charges, because of co-efficient of leverage in banking and financial sector is positive while it is negative in manufacturing and trading sector. Both results were not significant.

The third multiple regression model was used to examine the relationship between cost of equity and other explanatory variables, i.e. testing M-M preposition. The model was:

$K_o = a + b_1 l_2 + b_2 \text{logs} + b_3 g + b_4 D/p + b_5 E.V. + b_6 liq$

Where
l_2 = Leverage

By using this model, he concluded that “as the coefficient of leverage variable is insignificant in manufacturing and trading sector, in general the traditional view i.e. the cost of equity remains horizontal over a wide rage of leverage is supported”. He stated that in certain cases the cost of equity will decrease up to a point, in others the use of debt may increase the cost of equity.

2.3.3 Khatri Study

Khatri *(Khatri, 1998)* conducted the empirical study of M-M proposition in the Nepalese context. Khatri took 12 random selections of various enterprises of two different sectors out of 75 listed companies in Nepal stock exchange using secondary data from 1980 –1996. He used simple and multiple regression models and found that regression coefficient positive for banking and insurance sector while negative for manufacturing and trading sector. Making overall 28 observations for all given descriptive statistics of the variables, average cost of capital is found to be negatively correlated with leverage, size, growth, dividend payout ratio in case of manufacturing and trading sector. This indicates that

negative sign of correlation coefficient between average cost of capital with use of leverage. However in case of banking and insurance sector; cost of capital is found to be positively correlated with leverage employing that cost of debt financing is greater than cost of internal sources of fund. As such there is negative relationship with size, liquidity and payout ratio and positive with growth and earning variability.

2.3.4 The Khanal Study

Mr. Khanal conducted the study *(Khanal, 1992)* on the capital structure of Nepalese companies. He selected samples from industries public enterprise of Nepal and used financial ratio and correlation analysis as the tool of analysis. He concluded that the capital investment and earning were not correlated. Most of the public enterprises were in loss position. Debt equity ratio was not satisfactory. Financial performances of these companies were not good. He suggested that the management should reduced government subsidy and donation. They should improve their performance efficiency.

2.3.5 The Shrestha study

Mr. Shrestha conducted the study of capital structure management of selected public enterprises and use ratio analysis as the tool of analysis. He found that the selected public enterprises under the study have a very confusing capital structure since the corporation are not guided by objectives based financial plans and polices. He further added that in many instance adhocism become the basis of capital structure and most of them want to eliminate debt if possible relieve financial obligation. There were neither the public enterprises nor HMG development criterion in determining capital structure and this is the reason as to why debt equity ratio became a tick-list problem.

2.3.6 G.B. Tamang Study

G.B. Tamang (an impact of Capital Structure in profitability, a Comerative study between Soaltee and Yak and Yeti hotel,2001) found the profiles one of the measurements of successful organization in planning it must optimum Capital Structures to provide maximum return to its share holders and to increase the value of firm, further he found debt equity ratio in term of longterm debt to share holders equity for both hotels not higher than standard ratio of 1:1.

2.3.7 Parajuli Study

(Capital structure and its impact on Nepal lever Ltd 2001) has analyzed that the appropriate mix of capital keeps of firrm sound and healthy. In long run liquidity may depend on the profitabiity of firm but to survive to achive long run profitability, it has to depend on its capital structure to some extend.

Similarly Mr. Shiva prasad Jaishi (Capital structure and cost of capital Nepalese listed companies and empirical study 2001) use 16 observation comprising banking and finance, hotel and air line manufacturing and trading in hotel and conclude exactly same with the findings of Mr. K.R. Ghimire.

2.3.8 Ale Study

Suman Ale (2003) conduted a study by taking seven manufacturing companies from Nepal stock exchange. He took Nepal Battery Company Limited, Nepal Khadya Udhyog Limited,Bottlers Nepal (Terai), Jyoti Spinning Mills LTD., Nepal Lube oil LTD, Bottlers Nepal Limited (Balaju) and Nepal lever LTD. of a sample which covers 5 year period. He used three models in study.

Model I , regress seperatly average cost of capital against leverage and other variable that are believed to effect cost of capital.

Model II regressed cost of capital against each variable that is thought to effect cost of capital separately while

model III used to comparision have been made between the return on investment against the average cost of capital . His study conclude that leverage have effect on cost of capital . As one increase its leverage one can lower its cost of capital. It also shows that the performance of selected companies in terms of return on investment is satisfactory.

2.3.9 Shrestha Study (2003)

Having a study on capital structure of Necon Air Limited found the company is highly levered . Debt capital is proportionality higher than the equity capital consequently, financial risk is also higher and the outsider claim on the assets is more than the share holders. Considering all the facts Ms Shrestha conducted that the company's capital structure is not satisfactory level of debt equity mix. So he suggested such type of higher debt capital may not be a applicable for the future capital may not be applicable for the future explanation . For that , company management should seek for a well planned capital structure, which can provide the company maximum return and minimum cost. (Shrestha Tajendra) , A study on capital structure of Necon Air Limited Masters Degree thesis, Nepal Commerce Campus 2003, Kathmandu.

2.3.10 Subedi Study , (2005)

In his MBA Thesis, "A study on capital structure of Nabil Bank Ltd" In this studies specific objective were analyzed the capital of Nabil Bank Ltd. to show financial position, examine the diffrent profitability ratio and show overall trend analysis. Under this study used various tools such as graph, percentage, diagram, mean standard deviation and covarience. He found and concluded that total liabilities and capital item.Show the overal situations of bank infallin down. Deposite is the bigest amount in the balance sheet, fix deposited is taken as longterm debt in banking business. It is key determinant factor to capital structure debt & equity are properly mixed good capital structure is found. Price earning ratio reflectsd

the price currently reported EPS. It measures ivestrs expectation and the market appraised of the performance of a firm. This study suggests, deposite is the measure concern to the capital structure. It effects on investment policy. The more the fix deposite increase, the more longterm investment become possible is become more successful and competent as per tis capacity to collect the fix deposite. So fix deposite should be collected as more as possible.

2.3.11 Pradhan (2007)

He conducted a study on capita structure management of manufacturing companies and hotels,it is found that the composition of capital structure of the concerned companies have no unifornities. The capital structure decision is not found to be consideraed properly by the company. Investment and financing decision should be taken keeping the capital structure in mind. The study recomended the unilevered firms i.e.bottlers Nepal and Unilever Nepal to use cheaper debt which may increase to value of the firm. The lever firms Hotel shehansha 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 valuable should be adopted to capture the industry nature ot the Nepalese firm to better explain the variability in the profitability.Cost and benefit should be analyzed before raising fund firm diffrent source of capital.

The study has focus on the ratios of the selected organizations. The overall value of the firm of the firms can be analyzed through the size of balance sheet. The excluded such assumptions.

2.4 Research Gap

Variours studies have been conducted on Capital structure management of various study owned and public limited companies of Nepal. Most of the study indivudual that a sound principle of capital structure, cost of capital and it's management have not been followed thoroughly by the enterprises in Nepal. The studies also obeserved defect in capital structure. As for , example in many enterprises their debt capital was comparatively high than equity , progress of time,there to bring down the amount of beta capital.Despite the companys performance have not better signs of recovery the defective capital structure shown in the studies induced the research for the further study on the subject.

The researcher has tried he's best to fill up the gap created by previous studies. Even there arenot enough study conduted on the topic of relationship between capital structure and cost of capital.Terefore thies study is also devoted to test the relationship and effect between structure and cost of capital in Nepalese enterprise.

Most of the researsher didnot use SPSS programe so I used that programme and calculate the statistical tool which is used in multiple correlation and regression.

2.5 Concluding Remarks

From the review of above studies, it can be seen that the relationship between capital structure & cost of capital is almost non-existing in Nepal. Viewed in this way there is a need to carry out a study specific to the study of impact of capital structure on cost of capital. This kind of study is expected to provide useful information for policy implementation at both macro and micro levels.

There are persistent differences across companies in the capital structure. Studying these differences, why they persist, is a crucial and as yet unresolved issue in financial economics. However, despite the extensive body of literature surrounding the impact of capital structure on the cost of capital, the question of optimal capital structure still remains. A great deal of controversy has been developed over whether the capital structure of a firm as determined by its financing decision, affect its overall value.

Traditionalist argues that the firm can lower its cost of capital and increase market value per share by the judicious use of leverage. They suggest that there is an optimal capital for each firm, which is obtainable by the trade off between the cost and benefit of using debt in capital structure. Net income approach and M-M study on the other hand, argue that in the absence of taxes and other market imperfection, the total value of the firm and its cost of capital are independent of capital structure.

The review of studies on capital structure and cost of capital shows that decade of 1960s was centered around the M-M independent hypothesis and M-M tax correction hypothesis. Many researchers worked under the M-M hypothesis and their results concluded that the cost of capital is the function of leverage. Among the foreign studies such as Barges, Weston, Wippern, Sharma & Rao, Davenport, Rao & Lintznberges, Pandy, all have supported the traditional belief. Nepalese studies such as Adhakari & Ghimire also supported traditional approach.

CHAPTER 3
RESEARCH METHODOLOGY

The purpose of this chapter is to discuss the method of research followed in this study. The regression approach followed is to the cost of capital to the leverage and other explanatory variables. The research methodology refers to the various sequential steps to be adopted by a researcher in studying a problem with certain objectives in view *(Kothari, 1994)*. In other word research methodology describes the method and process applied in the entire aspect of the study. A focus is given to research questions, the model used, definitions of variables, samples selection and size, source of data.

3.1 Research Design

A definition of research that fits to different views is a systematic careful inquiry or examination to discover new information or relationship and to expand verifies existing knowledge for some specific purpose. The specific purpose may be academic (i.e. problem of theory) or applied (i.e. problem of practice) or both.

Thus research methodology is the systematic method of finding solution to a problem i.e. systematic collection, recording, analysis, interpretation and reporting of information about various facts of a phenomenon under study. In this study, research methodology refers to achieve the objective of the study.

Research design is a plan, structure and strategy to obtain the objective of the study. The research will be mainly based on secondary data and information. To conduct this study the research design should be explanatory or descriptive as well as analytical using the variables related

with the performance of the company and return to investors. The financial statement reports of the company and the relevant subject will be included in the study.

3.2 Population & Sample Selection

There are all together 25 commercial banks functioning in Nepal which is the size of the population.Out of them, 4 leading private commercial banks; Bank of Kathmandu, Himalayan Bank Limited, Nepal Bangladesh Bank Limited and Nepal Investment Bank Limited are considered as sample to carry out this thesis. It should be 16% out of 25 banks.

Table 1

List of Selected Sample Banks

S/No	Name of Banks	Period
1	Bank of Kathmandu Limited	2003-2008
2	Himalalyan Bank Limited	2003-2008
3	Nepal Bangladesh Bank Limited	2003-2008
4	Nepal Investment Bank Limited	2003-2008

3.3 Nature and Source of Data

This study is basically based on secondary data, which is derived from data of selected companies. These data have been collected from financial statement of listed companies published by Nepal Stock Exchange Ltd, Kathmandu. Other sources of data are financial reports annual reports, periodical reports, and other information provided by the companies. This study is based on the historical data of 6-year period.

All the secondary data are compiled, processed and tabulated in the time series as per the need and objective. Formal and informal talks with the concerned authorities of the bank were also helpful to obtain the additional information of the related problem.

Likewise, various data and information are collected from the economic journals, periodicals, bulletins, magazines and other published and unpublished reports and documents from various sources.

3.4 Tools for Analysis

Mainly the financial and statistical tools such as ratio analysis, mean, standard deviation, coefficient of variation, correlation, simple and multiple regression have been employed to achieve the objective of the study. The evaluation of data will be carried out to the pattern of data available.

3.4.1 Financial Tools

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

3.4.1.1 Ratio Analysis

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

only those ratios have been covered in this study, which are related to investment operation of the bank. This study contains following ratios:

3.4.1.1.1 Long Term Debt to Total Debt

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

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

3.4.1.1.2 Debt to Total Assets

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

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

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

3.4.1.1.3 Debt to Equity Ratio

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

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

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

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

3.4.1.1.4 Interest Coverage Ratio

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

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

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

3.4.1.1.5 Return on Total Assets

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

The ratio explains net income for each unit of assets. The return on total assets ratio is calculated using the formula below:

$$\text{Return on Total Assets} = \frac{\text{Net Profit After Tax}}{\text{Total Aassets}} \text{ x } 100$$

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.

3.4.1.1.6 Return on Shareholders Equity

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

$$\text{Return on Sharholder's Equity} = \frac{\text{Net Profit After Tax}}{\text{Shareholders' Equity}} \text{ x } 100$$

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

3.4.1.1.7 Earning Per Share (EPS) Analysis

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

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

3.4.1.1.8 Dividend Per Share (DPS) Analysis

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

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

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

3.5 Models

The method of analysis used in this study includes simple as well as multiple regression models to test the relationship between capital structure and cost of capital. The models used in the study are as follows.

3.5.1 Model – I

In this model, the average cost of capital regressed against each of the selected explanatory variable such as leverage, size, growth, dividend payout ratio, earning variability and liquidity. The equations are

$K_o = a + b_1L_1$ 3.1

$K_o = a + b_2Logs$ 3.2

$K_o = a + b_3G$ 3.3

$K_o = a + b_4DPR$ 3.4

$K_o = a + b_5E.V.$ 3.5

$K_o = a + b_6Liq$ 3.6

Where,

K_o = Average cost of capital

L_1 = Leverage 1

Logs = Size

DPR = Dividend payout ration

G = Growth

E.V. = Earning variability

Liq. = Liquidity

The above models assume the following reasonable prior expected signs of beta co-efficient.

$b_1, b_2, b_4, b_5, b_6 < 0$ and $b_3 > 0$

3.5.2 Model – II

In this model the cost of capital is regressed against leverage together with other explanatory variable. The theoretical statement of the model is that the cost of capital would depend on leverage, size, growth, dividend payout ration, earnings variability, and liquidity. In other words, the cost of capital is function of leverage, size, growth, dividend payout ration, earnings variability, and liquidity.

The theoretical statement framed above may be stated as

$K_o = F(L, S, G, DPR, E.V., Liq.)$

The equation of the model is

$K_o = a + b_1L_1 + b_2Logs + b_3G + b_4DPR + b_5E.V. + b_6 liq$ 3.7

The notation and the expected sign of beta co-efficient are similar as above.

3.5.3 Model – III

In this model, the cost of equity is regressed with each of the explanatory variables such as leverage, size, growth, dividend payout ration, earning variability, and liquidity.

The equations are as follows

$K_e = a + b_1L_2$ 3.8

$K_e = a + b_2Logs$ 3.9

$K_e = a + b_3G$ 3.10

$K_e = a + b_4DPR$ 3.11

$K_e = a + b_5E.V.$ ……. 3.12

$K_e = a + b_6Liq.$ ……. 3.13

Where,

K_e = Cost of equity

L_2 = Leverage 2

Other notations are similar as above.

3.5.4 Model – IV

This model is used to test the M-M hypothesis proposition II, the cost of equity is linear function of leverage. In this model, the cost of equity regressed against leverage together with other explanatory variables. The equation of the multiple regression is as follows

$K_e = a + b_1L_2 + b_2Logs + b_3G + b_4DPR + b_5E.V. + b_6Liq.$ ……. 3.14

Symbols are similar as above

The above models are tested by using the pooled data of the selected companies.

3.6 The Specification of the Variables

The empirical definitions of the variables employed and rational for their inclusion are given below.

3.6.1 The average cost of capital (K_o)

The average cost of capital is the dependent variables. It is calculated by dividing the expected earnings by the average of the high and low market values of the equity share plus the book value of preference shares and debt. The expected earnings are approximated by calculating the weighted average of two year after-tax net operating income (net income + interest) including the cross-section year. The weights assigned to the after-tax net operating income are 2 and 1 respectively for the cross-section year and the previous years.

3.6.2 Leverage

Leverage generally refers to using borrowed funds, or debt, so as to attempt to increase the returns to equity. Financial leverage takes the form of a loan or other borrowings (debt), the proceeds of which are reinvested with the intent to earn a greater rate of return than the cost of interest. If the firm's rate of return on assets (ROA) is higher than the rate of interest on the loan, then its return on equity (ROE) will be higher than if it did not borrow. On the other hand, if the firm's ROA is lower than the interest rate, then its ROE will be lower than if it did not borrow. Leverage allows greater potential returns to the investor than otherwise would have been available. The potential for loss is also greater, because if the investment becomes worthless, the loan principal and all accrued interest on the loan still need to be repaid.Leverage is used in this study the following two measures or ways

$$L_1 = \frac{LTD + STD}{LTD + STD + EC + PC}$$

$$L_2 = \frac{LTD + STD + PC}{LTD + STD + EC + PC}$$

Where,

LTD = Long term debt

STD = Short term debt

E.C. = Equity capital

PC = Preference capital

M-M in their study included preference capital in debt to calculate leverage. This procedure has been questioned by Barges because nonpayment of preference dividend does not present risk of bankruptcy as is the case with pure debt. We however use two measures of leverage, once including preference capital in the numerator, while other excluding it from here.

3.6.2 Size (Logs)

The natural logarithm of the capital employed at the balance sheet, value is used as a measure of the firm size. Capital employed comprises share capital (equity and preference), plus reserves and surpluses, plus long term loans, plus short term loans. This measure is preferred over other measures of size, viz. total assets, fixed assets, sales or employment, because it represents firms investment and also its magnitude indicates the confidence and attitude of investors towards the firm in providing financial resources. It has been suggested that in the empirical works the size is correlated with valuation. *(Crockett and Friend., Dec 1967)*. Therefore, size has been included as a control variable in the regression models used in this study. The larger size firms are expected to have higher market value.

3.6.3 Growth (G)

Weston showed in his empirical work *(Weston, 1963)* the growth being correlated to the leverage variable, would tend to influence the relationship between the cost of capital and leverage. Growth in assets should normally be followed by increase in the earning capacity of the business. At least, it indicates the potentiality for increase in earning. This also determines the technological improvement and is considered a sign of managerial efficiency. Thus it is included as a proxy for expected growth, i.e.,

$$G = \frac{EPS_{present} - EPS_{past}}{EPS_{past}}$$

EPS = Earning per Share

3.6.4 Dividend Payout Ratio (D/P)

A widely held belief is that the share holders give more weight age to dividends than on the retention of earning. *(Gramam, Dodd and Cottle, 1962)* This implies a negative correlation between the cost of capital and the pay out ratio. But this belief is not founded on a prior reasoning as retained earnings are reflected in share price, and can be realized as capital gains by selling the share. The pay out ratio is calculated by dividing cross-section years ordinary shares divided by the cash flow earnings of the shareholders in the cross-section year, i.e.,

D/E = dividend per share/earning per share

3.6.5 Earning Volatility (EV)

A firm's optimal debt level is a decreasing function of the volatility of its earnings. Higher the volatility of earnings, lower would be debt ratio. In this study the volatility is measured as percentage change in operating income.

3.6.6 Liquidity ratio (Liq.)

Liquidity ratio measures the ability of a company to use its near cash or quick assets to immediately extinguish its current liabilities. Quick assets include those current assets that presumably can be quickly converted to cash at close to their book values. Such items are cash, marketable securities, and some accounts receivable. This ratio indicates a firm's capacity to maintain operations as usual with current cash or near cash reserves in bad periods. As such, this ratio implies a liquidation approach and does not recognize the revolving nature of current assets and liabilities. The ratio compares a company's cash and short-term investments to the financial liabilities the company is expected to incur within a year's time. To account for the short-term risk of the firms, liquidity ratio has been included in the models. It is calculated by dividing current assets by current liabilities.

$$\text{Liquidity Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

3.6.7 Cost of Equity (K_e)

The cost of equity dependent variable is measured by dividing the shareholders expected weighted average of two years after tax net income (NI) by the market value of the ordinary share of the cross-sectional year. The weight assigned to the after tax net income are 2 and 1 respectively for the cross-section year and previous years.

CHAPTER 4
ANALYSIS AND INTERPRETATION OF DATA

This is the most important chapter of the study. The main focus of this chapter is to present and analysis the collected data according to the research methodology to attain the objective of the study. Accordingly this chapter is using financial tools as well as statistical tools for analysis and interpretation of collected data.

4.1 Results of Financial Analysis

Financial ratio is the mathematical relationship between two accounting figures. Financial tools are used to examine the strength and weakness of bank. In this study financial tools like ratio analysis and financial statement analysis have been used.

4.1.1 Results of Ratio Analysis

Ratio analysis is a part of the whole process of analysis of financial statements of any business or industrial concern especially to take output and credit decisions. Thus ratio analysis is used to compare a firm's financial performance and status to that of other firm's to it over time. The qualitative judgment regarding financial performance of a firm can be done with the help of ratio analysis.

4.1.1.1 Long Term Debt to Total Debt Ratio

The relationship between long term debt and total debt has a decisive impact on the financial structure of the companies. This relationship indicates what percentage of total debt is covered by long-term debt of the firm. Normally firms use short-term and long-term debt. The higher ratio of long term debt to total debt indicates the higher claim of long term debt holders upon the total debt and the lower ratio indicates the higher portion of short term loans and current liabilities in

the total debt of the firm. This relationship of long term debt and total debt is presented in the following table.

Table 2

Long-Term Debt to Total Debt Position (in percentage)

F/Y	BOK	HBL	NBBL	NIBL
2003	29.00	16.14	44.86	20.17
2004	25.77	21.83	26.01	28.16
2005	31.51	24.59	27.12	23.70
2006	12.32	24.23	21.67	30.01
2007	11.54	27.29	15.97	32.40
2008	23.83	21.64	18.79	24.89
Average	26.31	27.48	33.22	31.44

(Note: Average is based on average long-term debt upon average total debt)

Chart No.1

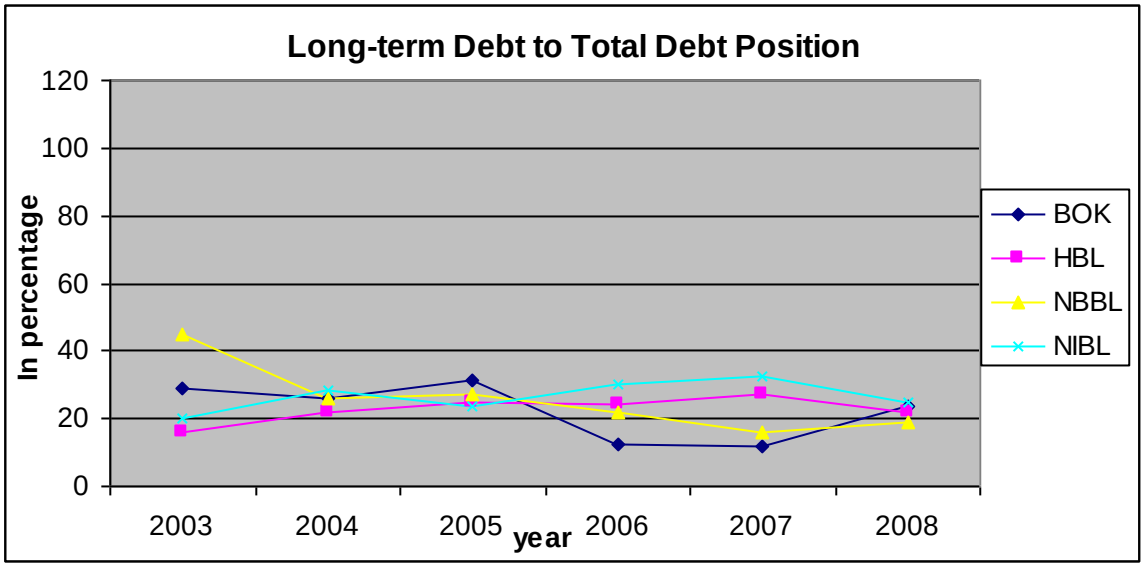

Table 2 and chart no 1 show that the ratio of long-term debt to total debt of BOK constituted 29 % in fiscal year 2003. This means the contribution of long-term debt in total debt is 29 % and the remaining portion is contributed by the current

liabilities. Similarly in fiscal year 2004, 2005, 2006, 2007 and 2008 are 25.77%, 31.51%, 12.32, 11.54 and 23.83 respectively. The ratios are in the fluctuating trend. The highest ratio is in the year 2005 and the lowest in year 2007. The bank has 26.31% of average long-term debt to total debt ratio .

In the case of HBL, it shows the ratio in year 2003, 2004, 2005, 2006, 2007 and 2008 to be 16.14%, 21.83%, 24.59%, 24.23%, 27.29% and 21.64% respectively. The ratios are in the fluctuating trend. The highest ratio is in the year 2007 and the lowest in year 2003. The average ratio is 27.48%**.** At the chart , Position of HBL lies 3rd in comparision with all other sampled banks .

In the case of NBBL, it shows the ratio in year 2003, 2004, 2005, 2006, 2007 and 2008 to be 44.86, 26.01, 27.12, 21.67, 15.97 and 18.79 respectively. The ratios are in the fluctuating trend. The highest ratio is in the year 2003 and the lowest in year 2007. The average ratio is 33.22%. At the chart , Position of NBBL seems higher than all other sampled banks except NIBL. .

Similarly, in the case of NIBL the ratio in fiscal year 2003, 2004, 2005, 2006, 2007 and 2008 are 20.17%, 28.16%, 23.70%, 30.01%, 32.40% and 24.89% respectively. The ratios are in the fluctuating trend. The highest ratio is in the year 2007 and the lowest in year 2004. The average ratio is 31.44%. At the chart , Position of NIBL seems higher than all other sampled banks. .

4.1.1.2 Debt to total assets ratio

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

Table 3

Comparative Debt – Asset Ratios (in percentage)

F/Y	BOK	HBL	NBBL	NIBL
2003	26.74	15.40	42.29	18.74
2004	24.01	20.67	24.81	26.61
2005	29.21	23.23	26.64	21.96
2006	23.71	22.78	24.57	28.02
2007	22.22	25.54	21.75	30.19
2008	22.02	20.13	23.18	23.17
Average	28.92	25.86	35.57	29.35

(Note: Average is based on long-term upon total asset)

Chart no.2

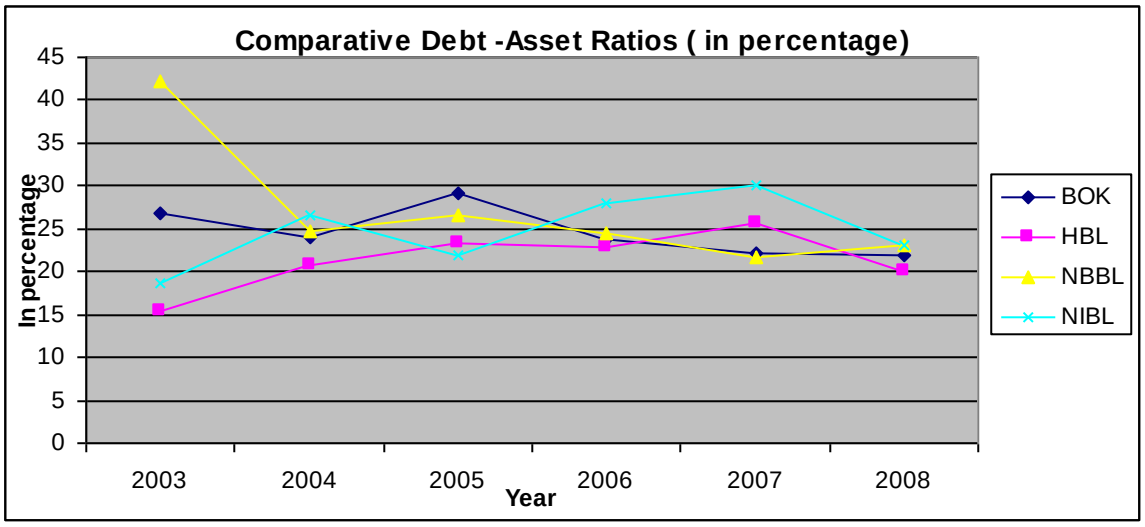

Table 3 and chart no. 2 show that the debt to assets ratio of BOK in the year 2003 is 26.74%. It indicates that in total assets, creditors provide 26.74% of amount. Similarly in year 2004, 2005, 2006, 2007 and 2008 are 24.01%, 29.21%, 23.71% , 22.22% and 22.02 respectively. The ratios are in the fluctuating trend. The highest ratio is in the year 2005 and the lowest in year 2008. The average ratio is 28.92.

Similarly in case of HBL, it shows the debt to total assets ratio in the year 2003, 2004, 2005, 2006, 2007 and 2008 to be 15.40%, 20.67%, 23.23%, 22.78% ,25.54% and 20.13 respectively. The ratios are in the fluctuating trend. The highest ratio is in the year 2007 and the lowest in year 2003.The average ratio is 25.86%.

Similarly, in case of NBBL It shows 42.29%, 24.81%, 26.64%, 24.57%, 21.72% and 23.18 in the year 2003, 2004, 2005, 2006, 2007 and 2008 respectively. The ratios are in the fluctuating trend. The highest ratio is in the year 2003 and the lowest in year 2007. Average ratio is 35.57%.

Again, it shows the debt to assets ratio of NIBL to be 18.74% in year 2003. Which means it has 18.74% of amount provided by creditors. In year 2004, 2005, 2006, 2007 and 2008 are 26.61%, 21.96%, 28.02%, 30.19% and 23.17 respectively. The ratios are in the fluctuating trend. The highest ratio is in the year 2007 and the lowest in year 2004. Average ratio of it is 29.35%.

Similarly looking at chart, BOK and NBBL is slightly declining form since started period to ending period (2003-2008). NBBL is in high form during the startinb period. HBL and NIBL are in growing form from starting period to year 2007 and then after it is slightly decline till 2008. Similarly NIBL is also growing form but after year 2004 it is slightly declined till 2005 then after it is again growing up till 2007 amd then after is again declined till 2008.

4.1.1.3 Debt to Equity Ratio

The debt-equity ratio measures the long-term components of capital structure. It reflects the relative claims of creditors and shareholders against the assets of the firm. Debt to Equity ratio indicates the relative proportions of debt and equity. The relationship between outsiders claim and owners' capital can be shown by debt-

equity ratio. This ratio can be calculated by simply dividing long-term debt by shareholders equity of the firm. This ratio is also known as debt to net worth ratio.

Table 4

Comparative Debt – Equity Ratios (in percentage)

F/Y	BOK	HBL	NBBL	NIBL
2003	0.00	36.89	0.02	2.54
2004	0.00	30.73	0.00	2.67
2005	0.00	23.35	0.00	26.70
2006	23.82	20.38	0.00	39.84
2007	20.37	16.77	0.00	43.32
2008	14.90	34.22	0.00	39.56
Average	11.73	26.45	-0.76	32.73

(Note: Average is based on average debt upon average equity)

Chart no 3

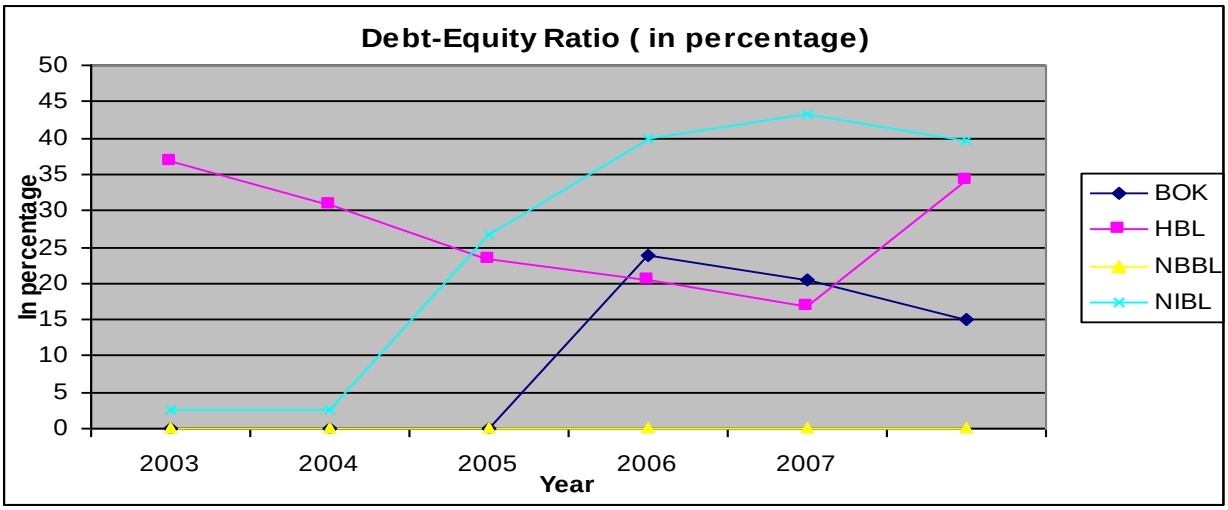

Table 4 and chart no 3 shows the average debt to equity ratio of BOK to be 14.08, which implies the percentage of debt finance over shareholders equity. The debt to equity ratio of BOK in FY 2003, 2004, 2005, 2006, 2007 and 2008 are 0.00%, 0.00%, 0.00%, 23.82%, 20.37% and 14.90 respectively. The ratios

are in the fluctuating trend. The highest ratio is in the year 2006 and the lowest is in the year 2003 to 2005.

In case of HBL, the debt to equity ratio is 36.89%, 30.73%, 23.35%, 20.38% ,16.77% and 34.22 in the FY 2003, 2004, 2005, 2006, 2007 and 2008 respectively. The ratios are in the decreasing trend. The highest ratio is in the year 2003 and the lowest is in the year 2007. It has an average ratio of 31.74%.

In case of NBBL, the debt to equity ratio is 0.02%, 0.00%, 0.00%, 0.00% , 0.00% and -.063 in the FY 2003, 2004, 2005, 2006 , 2007and 2008 respectively. The ratios are in the decreasing trend. The highest ratio is in the year 2003. In the following years it has no debt. It has an average ratio of -0.76 %.

Similarly, in the case of NIBL the debt to equity ratio is 2.54%, 2.67%, 26.70%, 39.84%, 43.32% and 39.56 in the F/y 20003, 2004, 2005, 2006, 2007 and 2008 respectively. The ratios are in the increasing trend. The highest ratio is in the year 2007 and the lowest is in the year 2003. It has an average ratio of 39.27%.

Looking at the chart , Position of Debt – Equity ratio of BOK is steady growing up from 2004 to 2006 and then after it is starting to decline till 2008 .HBl is in high form during the staring period of sampled data but sarply declining from 2003 to 2007 and then it is steady growing up till 2008. NIBL seems grown up high than all sample banks since 2004 to 2007 and then it is slightly decline.NBBL has no debt equity.

4.1.1.4 Interest Coverage Ratio

The interest coverage ratio is useful tool to measure long-term debt serving capacity of the firm. Interest is fixed charges of the companies, which is charged in long-term and short-term loans. Generally, Interest coverage ratio measures the debt serving capacity of a firm and it is concerned with long-term loans. It shows how many times the interest charges are covered by EBIT out of which

they will be paid. This ratio uses the concept of net profit before tax because interest is tax deductible or tax is calculated after paying interest on loan. This ratio examines the interest paying capacity of the firm by how many times the interest charges are covered by EBIT. Interest coverage ratio is calculated dividing EBIT by interest. So, it is necessary to analyze EBIT and interest. The calculated interest coverage ratios of three companies are presented in the following table.

Table 5

Comparative Interest Coverage Ratio (in times)

F/Y	BOK	HBL	NBBL	NIBL
2003	1.44	2.70	1.32	1.90
2004	1.64	2.78	1.16	1.71
2005	1.85	1.93	-0.19	1.94
2006	1.98	2.04	-2.31	2.03
2007	2.13	1.93	-1.03	1.74
2008	2.03	2.16	2.91	1.51
Mean	2.24	2.55	0.36	2.09

(Note: Average is based on earning before interest and tax upon interest)

Chart no.4

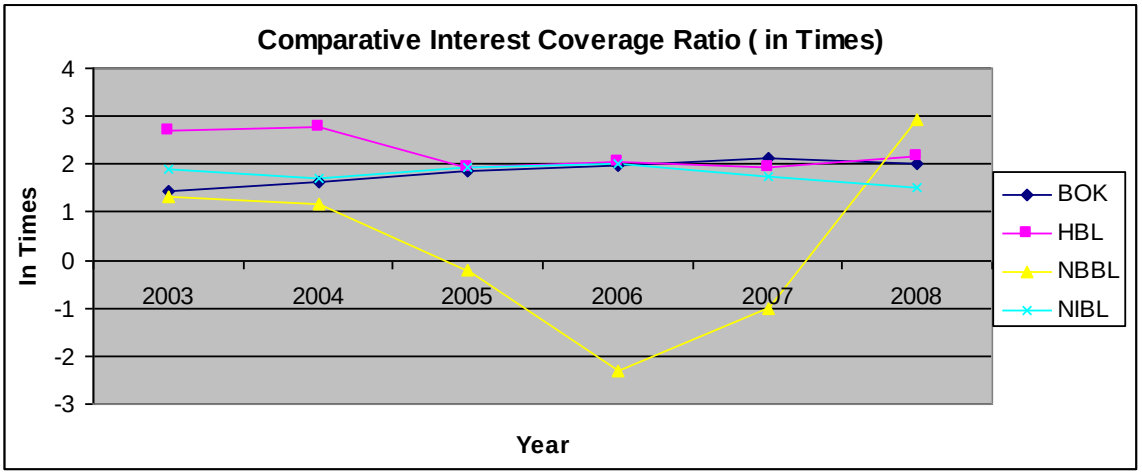

Table 5 and chart no.4 shows the average interest coverage ratio of BOK to be 2.24, which implies the number of times the interest covered by its EBIT. The interest coverage ratio of BOK is in increasing trend. The interest coverage of BOK in FY 2003, 2004, 2005, 2006, 2007 and 2008 are 1.44, 1.64. 1.85. 1.98, 2.13 and 2.03 times respectively. The highest ratio is in the year 2007 and the lowest in year 2003.

In case of HBL, the interest coverage ratio is 2.70, 2.78, 1.93, 2.04, 1.93 and 2.16 times in the FY 2003, 2004, 2005, 2006, 2007 and 2008 respectively. The interest coverage ratio of HBL is in fluctuating trend. The highest ratio is in the year 2004 and the lowest in years 2005 and 2007. It has an average ratio of 2.55 times.

In case of NBBL, the interest coverage ratio is 1.32, 1.16, -0.19, -2.31, -1.03 and 2.91 in the FY 2003, 2004, 2005, 2006 , 2007 and 2008 respectively. The interest coverage ratio of NBBL is in fluctuating trend. The highest ratio is in the year 2008 and the lowest in year 2005. The average ratio is 0.36 times.

Similarly, in the case of NIBL the ratios are 1.90, 1.71, 1.94, 2.03, 1.74 and 1.51 in the F/y 20003, 2004, 2005, 2006, 2007 and 2008 respectively. The interest coverage ratio of NIBL is in fluctuating trend. The highest ratio is in the year 2006 and the lowest in year 2008. The average ratio is 2.09 times.

Similary Looking at the chart, Interest Coverage Ratio of BOK and NIBL have more or less same patturn during the period of first six year but NIBL is slightly declined from 2006 to 2008 . HBL is in high form during the starting period than all sampled banks. NBBL is sharply declining from the year 2004 up to negetive position till 2006 and then it is again steady growing up till end of the period.

4.1.1.5 Return on Total Assets

Return on total assets ratio measures the profitability of bank that explains a firm to earn satisfactory return on all financial resources invested in the banks' assets. The ratio explains net income for each unit of assets. Higher ratio indicates efficiency in utilizing its overall resources and vice versa. From the point of view of judging operational efficiency, rate of return on total assets is more useful measure.

Table 6

Position of comparative Return on Total Assets (in percentage)

F/Y	BOK	HBL	NBBL	NIBL
2003	1.10	0.91	0.60	1.30
2004	1.34	1.06	0.02	1.15
2005	1.42	1.11	-5.65	1.45
2006	1.65	1.55	-15.35	1.64
2007	1.80	1.47	-14.63	1.27
2008	1.48	1.76	6.35	0.90
Average	1.81	1.62	-5.20	1.48

(Note: Average is based on net profit after tax upon total assets)

Chart no.5

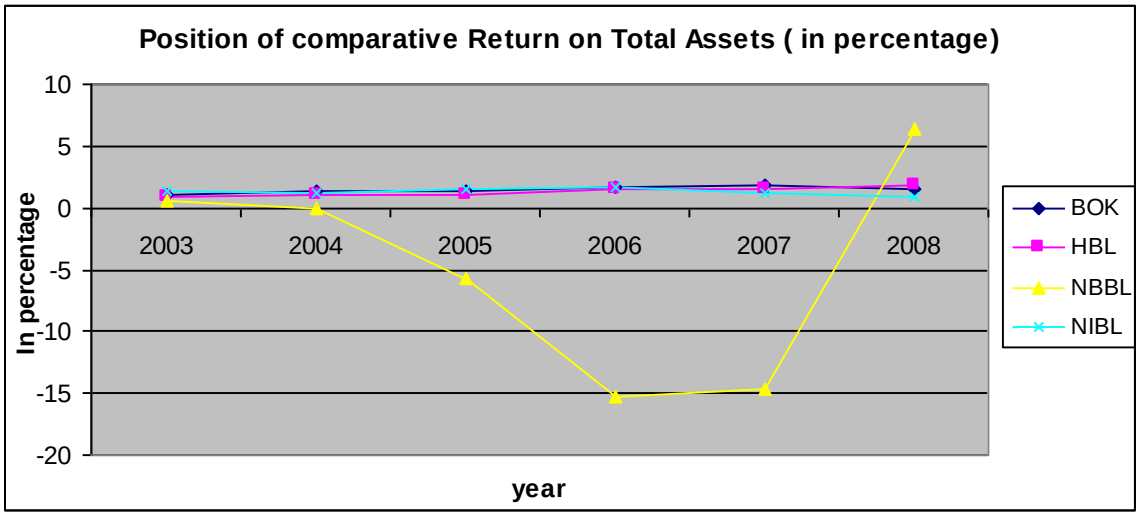

Table 6 chart shows the comparative position of return on total assets of the four commercial banks. From the table, the ROA of BOK in the year's 2003, 2004, 2005, 2006, 2007 and 2008 are 1.10%, 1.34%, 1.42, 1.65% , 1.80% and 1.48 respectively. The ratios are in the increasing trend. The highest ratio is in the year 2007 and the lowest in year 2003. The average ratio is 1.81%.

Similarly, The ROA of HBL in the year's 2003, 2004, 2005, 2006, 2007 and 2008 are 0.91%, 1.06%, 1.11%, 1.55%, 1.47% and 1.76% respectively. The ratios are in the fluctuating trend. The highest ratio is in the year 2008 and the lowest in year 2003 and the average return is 1.62%.

And the ROA of NBBL in the year's 2003, 2004, 2005, 2006, 2007 and 2008 are 0.60%, 0.02%, -5.65%, -15.35%, -14.63% and 6.35 respectively. The ratios are in the fluctuating trend. The highest ratio is in the year 2008 and the lowest in year 2006 and the average return is -5.20%.

Again, from the above table, the ROA of NIBL is 1.30, 1.15, 1.45, 1.64, 1.27 and 090 in the years 2003, 2004, 2005, 2006, 2007 and 2008 respectively. The ratios are in the fluctuating trend. The highest ratio is in the year 2006 and the lowest in year 2008. The average return is 1.48%.

Similary Looking at the graph Return on Total Assets of BOK, NBBL and NIBL are in high form during the starting period of sampled data and have more or less same patturn during the period of first six years. But NBBL sharply declining form up to negetive position but after crossing the period of 2007/08 it is in steady growing trend. HBL and BOK have more or less same patturn during the period of first six years.

4.1.1.6 Return on Shareholders' Equity

Shareholders' fund represents that part of long-term source of funds, which is collected by issuing equity shares and preference shares. Shareholders are actually the owners of the company. Shareholders have ultimate claim in the return of the company. To measure the return earned by shareholders, return on shareholders equity (ROE) is used or this ratio is calculated to find out the profitability on the owners' capital or investment. Earning after tax (EAT) is the profit of the shareholders. Therefore this ratio is calculated on the basis of EAT. In this study, the sampled companies have not employed the preference share thus it includes only return on shareholders' equity. The high ROE represents the high profitability of the firm and vice versa. This ratio can be calculated simply by dividing earning after tax by shareholders' equity (SE), which is presented in the following table.

Table 7

Return on Shareholders' Equity (in percentage)

F/Y	BOK	HBL	NBBL	NIBL
2003	14.18	19.95	10.45	18.29
2004	19.59	19.87	0.40	20.94
2005	19.36	20.00	-319.54	19.67
2006	24.11	25.90	115.01	24.77
2007	26.72	22.91	40.45	18.66
2008	19.55	25.30	-27.22	13.05
Average	25.25	27.45	73.39	21.86

(Note: Average is based on net profit after tax upon shareholders' equity)

Chart no.6

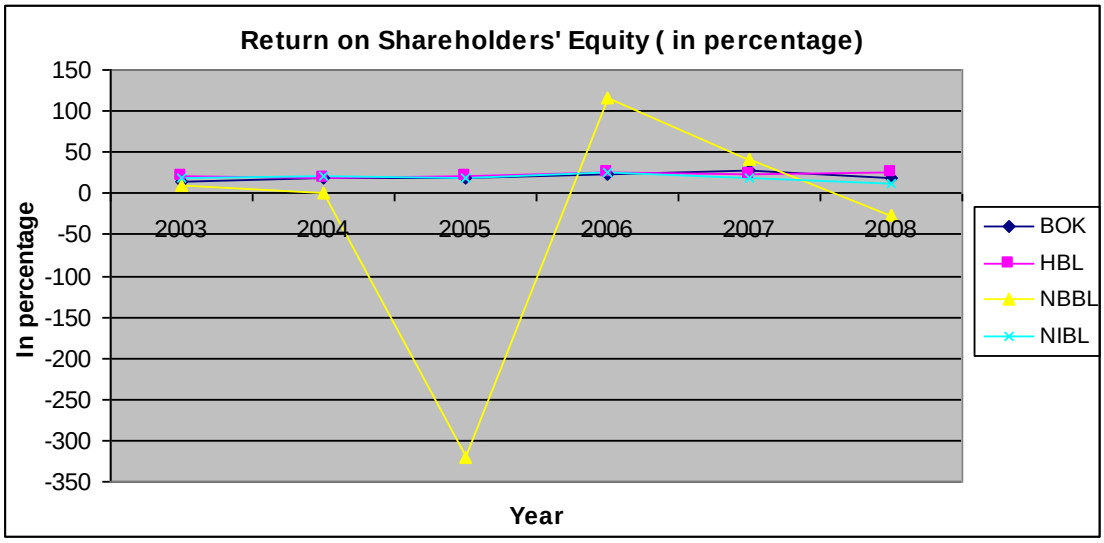

Table 7 and chart exhibits Return on Shareholder's Equity of sample banks. In case of BOK, in the fiscal year 2003, the ratio is 14.18% that implies that one rupee investment by shareholders' equity earned 14.18 paisa in one-year. Similarly it is 19.59%, 19.36%, 24.11%, 26.72% and 19.55 for the years 2004, 2005, 2006 ,2007 and 2008 respectively. Return on Shareholder's Equity of BOK is in the fluctuating trend. The highest ratio is in the year 2007 and the lowest in year 2003. The average is 25.25%.

Similarly in the case of HBL, in the fiscal year 2003 the ROE is 19.95%. In the following years it is 19.87%, 20.00%, 25.90%, 22.91% and 25.30 respectively for the years 2004, 2005, 2006, 2007 and 2008. Return on Shareholder's Equity of HBL is in the fluctuating trend. The highest ratio is in the year 2006 and the lowest in year 2004. The average ratio is 27.45%.

In the case of NBBL, ROE in years 2003, 2004, 2005, 2006, 2007 and 2008 are 10.45%, 0.40%, -319.54%, 115.01%, 40.45% and -27.22 respectively. But return on equity for year 2005 and 2008 is not applicable as the overall equity capital for these years is negative due to negative value of shareholders reserve. Return on Shareholder's Equity is in the fluctuating trend. The highest ratio is in the year 2006 and the lowest in year 2005.

Similarly in the case of NIBL, ROE in years 2003, 2004, 2005, 2006, 2007 and 2008 are 18.29%, 20.94%, 19.67%, 24.77%, 18.66% and 13.05 respectively. Return on Shareholder's Equity is in the fluctuating trend. The highest ratio is in the year 2006 and the lowest in year 2008. The ratios are in the fluctuating trend. The average ROE is 21.86%.

Similary Looking at the graph shareholder's equity of BOK ,HBL and NIBL are in high form during the starting period of sampled data and more or less same patturn during the period of first six years. NBBL is in sharply declining form up to negetive position till 2005 but after crossing the period of 2005 is steady growing up till 2006 and it's again starting to decline trend from 2006 to 2008.

4.1.1.7 Earning Per Share

The profitability of bank from the point of view of the ordinary shareholders is earning per share. The ratio explains net income for each unit of share. Earning per share of an organization gives the strength of the share in the market. It shows how much theoretically belongs to the ordinary shareholders. This ratio can be calculated simply by dividing net income by number of shares outstanding, which is presented in the following table.

Table 8

Position of comparative EPS (in Rs.)

F/Y	BOK	HBL	NBBL	NIBL
2003	17.72	49.45	19.87	39.56
2004	27.50	50.10	0.73	51.70
2005	30.10	58.72	-104.12	39.50
2006	43.67	59.24	-249.66	59.35
2007	43.50	60.66	-147.47	43.74
2008	43.50	62.74	80.16	29.12
Mean	34.33	56.82	-66.75	43.83

Chart no.7

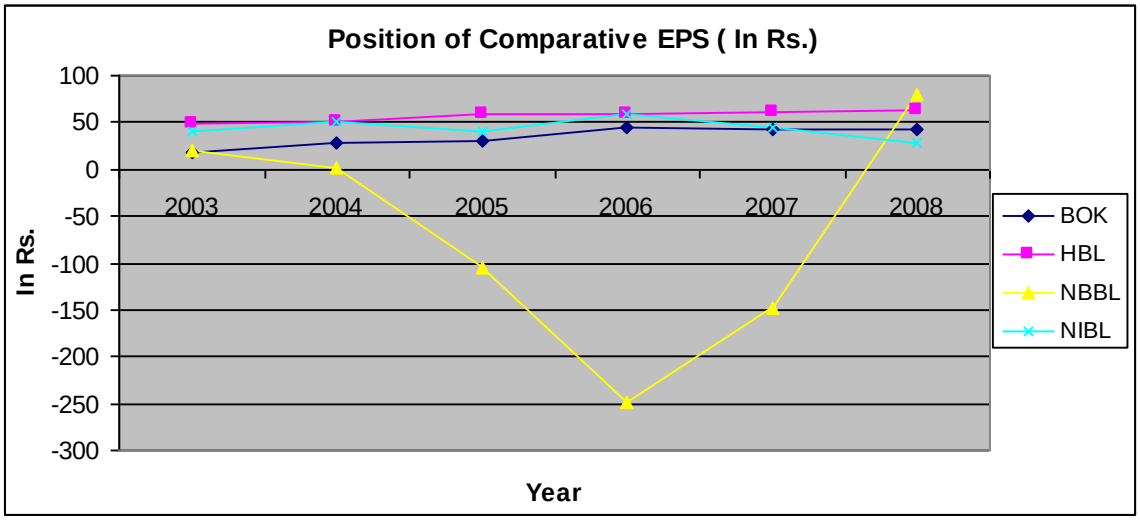

Table 8 and chart exhibits the earnings per share of the selected banks. In case of BOK it is Rs.17.72, Rs.27.50, Rs.30.10, Rs.43.67, Rs.43.50 and 43.50 in the years 2003, 2004, 2005, 2006, 2007 and 2008 respectively. Earning per share of BOK is in the fluctuating trend and is highest in the year 2006 and lowest in the year 2003. The average earning per share is Rs.34.33.

Similarly, the earnings per share of HBL in the years 2003, 2004, 2005, 2006, 2007 and 2008 are Rs.49.45, Rs.50.10, Rs.58.72, Rs.59.24,Rs.60.66 and 62.74 respectively. It is in the increasing trend with highest earning per share in the year 2008 and lowest in the year 2003. And the average earning per share is Rs.56.82.

Again, the EPS of NBBL in the years 2003, 2004, 2005, 2006, 2007 and 2008 is Rs.19.87, Rs.0.73, Rs.-104.12, Rs.-249.66, Rs.-147.47 and 80.16 respectively. It is in the fluctuating trend with highest earning per share in the year 2008 and lowest in the year 2006. Average EPS is Rs.-66.75.

And, the earnings per share of NIBL in the years 2003, 2004, 2005, 2006, 2007 and 2008 is Rs.39.56, Rs.51.70, Rs.39.50, Rs.59.35, Rs.43.74 and 29.12

respectively. It is in the fluctuating trend with highest earning per share in the year 2006 and lowest in the 2008. Average EPS is Rs.43.83.

Similary Looking at the graph EPS of BOK and NIBL have more or less same patturn during the period of first six years but the trend of HBL is slightly growing up till 2008.NBBL is in sharply declining form up to negetive position but after crossing the period of 2006/07 again in steady growing trend. So it seems good trend for NBBL since that period.

4.1.1.8 Dividend Per Share (DPS) Analysis

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

Table 9

Position of comparative DPS (in Rs.)

F/Y	BOK	HBL	NBBL	NIBL
2003	5.00	1.32	0.00	20.00
2004	10.00	0.00	0.00	15.00
2005	15.00	11.58	0.00	12.50
2006	18.00	30.00	0.00	20.00
2007	20.00	15.00	0.00	30.00
2008	20.00	15.00	0.00	40.30
Mean	14.67	12.15	0.00	22.97

Chart no.8

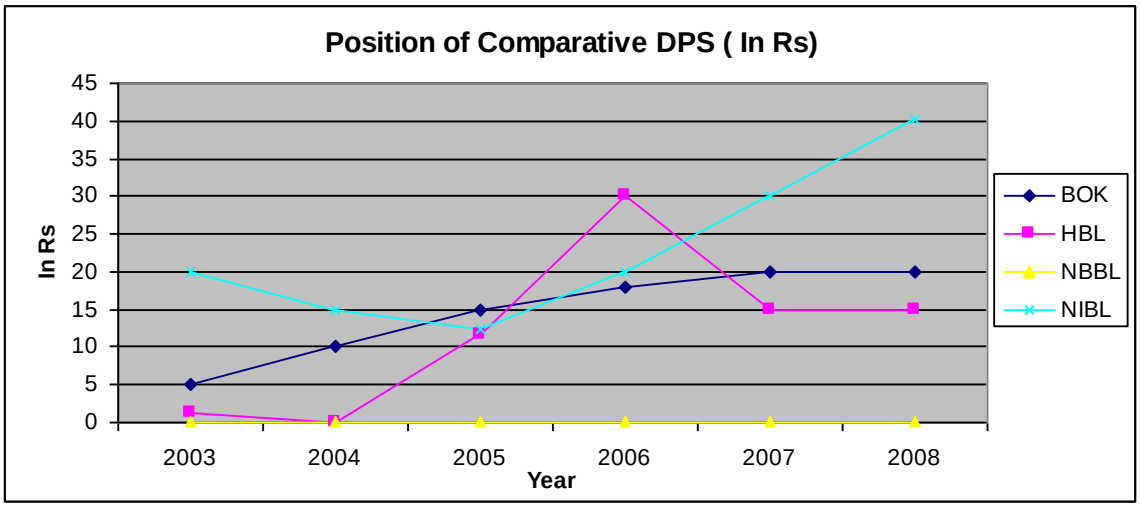

Table no.9 and chart 8 shows The dividend per share of BOK is Rs.5.00, Rs.10.00, Rs.15.00, Rs.18.00 Rs.20.00 and Rs.20.00 in the years 2003, 2004, 2005, 2006, 2007 and 2008 respectively. It is in the increasing trend with the highest dividend per share in the year 2007and 2008 and lowest in the year 2003. The average dividend per share is Rs.14.67.

Similarly, HBL shows a dividend per share of Rs.1.32, Rs.0.00, Rs.11.58, Rs.30.00, Rs.15.00 and Rs.15.00 in the years 2003, 2004, 2005, 2006 and 2007 respectively. It is in the fluctuating trend with highest dividend per share in the year 2006 and lowest in the year 2004. The average DPS is Rs.12.15.

Similarly, NBBL shows zero DPS over the study period of 6 years starting from 2003 till 2007.

Again, NIBL shows a DPS of Rs.20.00, Rs.15.00, Rs.12.50, Rs.20.00, Rs.30.00 and Rs.40.30 in the years 2003, 2004, 2005, 2006, 2007 and 2008 respectively. It is in the fluctuating trend with highest dividend per share in year 2008 and 2003 and lowest in the year 2005. The average dividend per share is Rs.22.97.

Looking at the chart no., Position of Comparative DPS of BOK and HBL dirstributed less divident than NIBL . NBBL have same patturn during the period of six years ie it has 0 DPS. NIBL seems higher than all other sampled banks. But it is decline first 3 years and then after it is steady growing up till 2008 .This informs that NIBL distributed more divident to ordinary share holders.

4.2 Results of Statistical Analysis

Statistics is a mathematical science pertaining to the collection, analysis, interpretation or explanation, and presentation of data. It is applicable to a wide variety of academic disciplines, from the natural and social sciences to the humanities, and to government and business.

Statistical methods can be used to summarize or describe a collection of data; this is called descriptive statistics. In addition, patterns in the data may be modeled in a way that accounts for randomness and uncertainty in the observations, and then used to draw inferences about the process or population being studied; this is called inferential statistics. Both descriptive and inferential statistics comprise applied statistics

4.2.1 Descriptive statistics of the variables

First of all means, standard deviation and the correlation are determined, the means and standard deviation are presented in table 10 and correlation coefficients are presented in table 11.

Table 10

Mean and standard deviation of the variables

(Ko = Cost of Capital, L_1 = Leverage, Log S = Size of firm, DPR = Dividend per share, Liq. = Liquidity, G = Growth, E.V. = Earning volatility, Ke = Cost of Equity)

Variables	No. of Observations	Mean	St. dev	Status
Ko	24	0.02	0.03	Dependent
L_1	24	0.90	0.19	Independent
Log S	24	5.42	5.06	Independent
DPR	24	0.26	0.21	Independent
Liq	24	1.33	0.25	Independent
G	24	-5.51	29.06	Independent
E.V.	24	0.18	0.22	Independent
Ke	24	-0.03	0.23	Dependent

Table 10 exhibits mean and standard deviation of the eight variables evaluated and analyzed in this study. Here cost of capital and cost of equity are the dependent variables and rest of the variables, i.e. leverage , Size of firm, dividend per share, liquidity, growth and earning volatility are the independent variable. The study is conducted with five years data of four selected banks. They are, Bank of Kathmandu Limited, Himalayan Bank Limited, Nepal Bangladesh Bank Limited and Nepal Investment Bank Limited. Therefore we have altogether twenty four observations. The mean value of cost of capital is 0.02 and its standard deviation is 0.03. Similarly, mean value of leverage is 0.90 and its standard deviation is 0.19. Again, mean value of size is 5.42 and its standard deviation is 5.06. Mean value of dividend per share is 0.26 and its standard deviation is 0.21. Mean value of liquidity is 1.33 and its standard deviation is 0.25. Mean value of growth is -5.51 and its standard deviation is 29.06. Mean value of earning volatility is 0.18 and its standard deviation is 0.22. Finally, mean value of cost of equity is -0.03 and its standard deviation is 0.23.

Table 11

Individual variables

(BOK = Bank of Kathmandu Limited, HBL = Himalayan Bank Limited, NBBL = Nepal Bangladesh Bank NIBL = Nepal Investment Bank Limited)

Banks	Ko	L1	Log S	DPR	Liq	Growth	E.V.	Ke
BOK	0.04	0.86	7.21	0.39	1.30	1.56	0.20	0.05
HBL	0.03	0.87	7.74	0.21	1.35	0.02	0.05	0.05
NBBL	0.00	0.99	-0.68	0.00	1.28	-23.37	0.12	-0.25
NIBL	0.03	0.87	7.42	0.44	1.40	0.12	0.34	0.04
Average	0.02	0.90	5.42	0.26	1.33	-5.51	0.18	-0.03

It is clear from table 11 that cost of capital of Bank of Kathmandu within our study period is 4% which is higher than the average cost of capital of selected four banks. Similarly, axcept NBBL all 3 banks have higher than average cost of capital of 4% and 3% and 3% respectively. Nepal Bangladesh Bank has 0 average cost of capital .

Leverage of BOK in the study period is 86%, which is below the average of selected banks and is the lowest leverage among the selected banks. Similarly, the leverage of HBL is 87%. In the case of NBBL, it has a highest leverage of 99%. The leverage of NIBL is also 87%.

Size of BOK during the study period is 7.21. HBL has the highest size of 7.74 and NBBL has the lowest average size of -0.68. Similarly NIBL has a size of 7.42 and is greater than the average of 6.37.

Dividend per share of BOK is 39%.Similarly HBL has 21% which is less than the average. NBBL has not given any dividend during the study period hence its

DPR is 0% and NIBL has 44% which is the highest among the four banks and is far greater than the average of the selected banks which is equal to 26%.

Liquidity of BOK,HBL and NIBL have 1.30,1.35 and 1.40 times respectively,and NBBL have1.28 time which is the lowest and so far below the average value of 1.33 . The optimal standard ratio should be 2:1, but this standard ratio is not applicable in banks and financial institutions. So the ratio maintained by the commercial banks at the level of around 1:1 is regarded as good and sufficient to meet the normal contingencies.

The growth of BOK is higher than other banks i.e. 156% which is very high than average growth and lowest growth rate is -2375% of NBBL. Similarly HBL and NIBL have growth rate of 2% and 12% respectively.

Earning variability of BOK is 20% which is just above the average of selected banks which is 18%. HBL has the lowest E.V. of 5%. Similarly NBBL and NIBL have E.V. of 12% and 34% respectively.

BOK and HBL have a highest cost of equity, i.e. 5% where as NBBL has the lowest of -25%. This is justified by the lowest leverage of BOK and the highest of NBBL. Similarly cost of equity of NIBL is 4% .

4.2.2 Cost of Capital and Leverage

The cost of capital for a firm is a weighted sum of the cost of equity and the cost of debt. It is minimum required rate of return of an investment which must be earned by a project remain unchanged its value or wealth.

Leverage generally refers to using borrowed funds, or debt, so as to attempt to increase the returns to equity. Financial leverage takes the form of a loan or other borrowings (debt), the proceeds of which are reinvested with the intent to earn a greater rate of return than the cost of interest.

Here below, attempt has been made to show the effect of leverage on the overall cost of capital of the concerned banks.

4.2.2.1 Correlation Coefficient between Variable

Table 12 indicates the correlation between the variables in listed banks.

Table 12

Correlation Matrix of the variables

Variables	L1	LogS	Growth	DPR	EV	Liq
Ko	-0.633** (0.001)	0.713(**) (0.000)	0.614(**) (0.001)	0.356 (0.088)	-0.130 (0.545)	0.517** (0.010)
L1		-0.308 (0.143)	-0.257 (0.225)	-0.305 (0.147)	0.164 (0.444)	-0.166 (0.438)
LogS			-0.257(**) (0.007)	.511(*) (0.011)	-.065 (0.762)	0.538.(**) (0.007)
Growth				0.264 (0.213)	0.365 (0.079)	0.211 (0.323)
DPR					0.299 (0.155)	.126 (0.556)
EV						-0.086 (0.691)

P-value is given in the bracket

** Correlation is significant at the 0.01 level (2-tailed)

* Correlation is significant at the 0.05 level (2-tailed)

Table 12 shows the correlation between each of the variables. Our main concern is the correlation between cost of capital and other variables taken one at a time. The cost of capital is negatively correlated with leverage, size and E.V. and is positively correlated with growth, DPR and Liquidity. The negative correlation between cost of capital and leverage indicate that, an increase in the portion of debt in a capital structure decreases the cost of capital. Same is the case with

size and E.V. with negative correlation as well. The positive correlation between cost of capital and growth indicates that large and growing banks are needed with greater amount of capital. As they seek more and more capital, as a result, cost of capital is increased. Similarly there is positive correlation between DPR and liquidity as well. The correlation between cost of capital and leverage, size, growth, DPR, E.V. and liquidity is -63.3%, 71.3%, 61.4%, 35.6%, -13.% and 51.7% respectively. P-value exhibits that correlation between cost of capital and leverage, growth and liquidity are significant and remaining are insignificant.

The leverage has negative correlated with size, growth, DPR and liquidity where as positive correlation with E.V. This means increase in size, growth, DPR and liquidity decreases leverage by -30.8%, -25.7%, -30.5% and -16.6% respectively. The leverage has positive relation with E.V. It indicates that with an increase in E.V of the companies, the leverage of companies will increase by 16.4%. P-value exhibits that correlation between leverage and size is significant at 0.05 level and rest are insignificant.

Size has positive correlation with DPR and E.V. and is negatively correlated with growth and liquidity. Larger size of companies tends to pay significantly high percentage of dividend to shareholders, which is indicated by figure. Also they have higher E.V. This indicates larger size of companies have less risk. But the P-value exhibits that the correlation between the variables are insignificant at 0.05 level. The correlation between size and growth, DPR, E.V. and liquidity is -.257%, 51.1% , -6.5% and 53.8% respectively.

The growth has positive correlation DPR, E.V, and liquidity of firm but is negatively correlated with size and leverage. This mean increase in DPR, E.V. and liquidity will increase the growth of firm where as large size and high leverage will decrease the growth rate of firm. But the P-value exhibits at the correlation between the variables are insignificant at 0.05 level. The correlation

between growth and DPR, E.V. and Liquidity is 26.4%, 36.5% and 21.1% respectively.

DPR has negative correlation with leverage and liquidity hence with increase in these factors DPR will decrease where as it has positive correlation with size, growth and E.V. Hence it increases with increase in these factors. But the P-value exhibits at the correlation between the variables are insignificant at 0.05 level. The correlation between DPR and E.V is 29.9% and liquidity is 12.6%

Similarly E.V. has positive correlation with Leverage, size, growth and DPR. Increase in these factors will increase E.V of a firm. It has negative correlation with liquidity. This mean increase in all the remaining factors except liquidity will increase firm's E. V. where as increase in liquidly with decrease the E.V. But the P-value exhibits at the correlation between the variables are insignificant at 0.05 level. The correlation between E.V. and liquidity is -8.6%

The important point to be noted here is that the relation of cost of capital to the leverage. The table clearly shows that it has negative correlation. Hence the increase in leverage will decrease the cost of capital. P-value also exhibits that the correlation between cost and capital and leverage is significant at 0.05 level. Thus, it supports the theoretical expectation made in previous chapter.

4.2.2.2 Simple Regression Analysis of the Variables

The simple regression (model I) results for the pooled data of the sample banks for our companies are presented in table 13. There are four companies under this head. The observation is undertaken for five years each. So there are 20 observations, each independent variable is regressed against cost of capital separately.

Table 13

Simple regression Result with average cost of capital

As Dependent variable (Model I)

(Ko = Cost of Capital, a = Constant, b = Beta coefficient, L_1 = Leverage, Log S = Size of firm, DPR = Dividend per share, Liq. = Liquidity, G = Growth, E.V. = Earning volatility)

Model	no. of Observation	Constant (a)	Beta coefficient	R2	S.E. of beta coefficient	T-value	P-value
$Ko=a+b_1L_1$	20	0.110	-0.095	0.401	0.025	-3.835	0.001
$Ko=a+b_2Logs$	20	0.002	.004	.509	0.001	4.776	0.000
$Ko=a+b_3 G$	20	0.028	0.001	0.376	0.000	3.644	0.001
$Ko=a+b_4DPR$	20	0.12	0.049	0.127	0.027	1.787	0.088
$Ko=a+b_5 EV$	20	0.027	-0.017	0.017	0.028	-0.614	0.545
$Ko=a+b_6Liq$	20	-0.054	0.059	0.267	0.021	2.834	0.010

Now, we try to analyze the regression results. The regression of average cost of capital on leverage is concerned; beta-coefficient is negative which indicates that cost of capital will decrease as leverage increases. In other word, percentage increase in leverage decreases the cost of capital by 0.095%. P-value exhibits that the regression is perfectly significant at 0.05 level as it is only .001% which is below 5%. Co-efficient of determination is significant at “R2 = 0.401”. It means that the regression model explains about 40.1% of variation in cost of capital by leverage variable.

Likewise we can analyze the impact of other independent variables as well. With respect to the regression of average cost of capital on size, the results concluded that as the size of the firm decreases the cost of capital increases since the beta coefficient is negative but the P-value exhibits that it is not significant at 0.05 level as the P-value 0% with which is lower than 5%. The value of R2 is .509 is significant. This indicates that 50.9% of variation in cost of capital is explained by size variable.

The regression of average cost of capital on growth of the companies indicates that the increase in growth can lead to increase on cost of capital of companies as the value of beta coefficient is positive. P-value of 0.001 exhibits that the regression between these two variables is significant at 0.5 level. The value of R2 is satisfactory at 37.6%. This indicates that 37.6% of variation in cost of capital is explained by growth variable.

The regression co-efficient of average cost of capital on dividend payout ratio is positive. P-value of 0.088 exhibits that the coefficient is statistically insignificant at 0.05 level. Value of R2 exhibits only 12.7% of variation in cost of capital is explained by DPR variable.

The beta co-efficient of E.V. is negative hence is there is negative relationship between cost of capital and E.V. But the P-value of 0.545 exhibits that it is not statistically significant at 0.05 level. Value of R2 indicates only 1.7% variation in cost of capital by E.V. variable.

The beta-coefficient of liquidity is positive hence the cost of capital increases by increase in liquidity. P-value of 0.010 exhibits that it is statistically significant at 0.05 level. Value of R2 is satisfactory significant as it indicates only 26.7% variation in cost of capital explained by liquidity variable.

The main concern of this study is with the performance of the leverage variable. The beta co-efficient of leverage is negative. This means with increase in leverage, cost of capital will decrease. The P-value of 1% also exhibits that the regression is perfectly significant. Thus, supports the theoretical expectation made in previous chapter.

4.2.2.3 Multiple Regression Analysis

To avoid the biases and weakness of the simple regression equation, multiple regression (model II) is used and the results of this model is given in table 14

Table 14

Multiple Regression Result (Model II)

Reg. Equation $Ko = a + b_1L_1 + b_2 Log\ S + b_3\ G + b_4\ DPR + b_5\ EV + b_6\ Liq$

Variables	Beta coefficient	St. error	T-value	P-value	Status
Constant (a)	.038	0.026	1.457	.163	Significant
L1	-.056	0.019	-2.998	0.008	Significant
LogS	0.001	0.001	1.060	0.304	Insignificant
Growth	0.000	0.000	2.646	0.017	Insignificant
DPR	0.008	0.021	.392	0.700	Insignificant
EV	-0.027	0.020	-1.400	0.179	Insignificant
Liq	0.026	0.015	1.760	0.096	Insignificant

R2	0.806
F	11.781
P-value	0.000

The constant of 0.038 has virtually no meaning. Mathematically it means that at zero level of all the independent variables the cost of capital is 0.038. But this is

outside our observed range, as we have no observation of cost of capital at zero level of any variables. So this intercept term doesn't have meaning of its own. The negative beta-coefficient of leverage means that a percentage rise in leverage causes a reduction in cost of capital by 0.056, holding constant the other variables. Similarly the co-efficient of other variables indicate the same meaning. This holds true only within our observation range. We can't extend this estimate very far from the range of observed values. The co-efficient of multiple determination R2 = 0.806 indicates that 80.6% of the total variation in cost of capital has been explained by the regression model. This should be a satisfactory level of explanation for the model as a whole. However, the P-value for the regression is 0.000, which is lower than the critical P-value of 0.05 indicating that the regression equation provides a statistically insignificant explanation of variation in cost of capital of listed banking sectors. The P-values of leverage is 0.008 which is smaller than the critical P-value of 0.05 hence from this statistics we can infer that leverage does have an affect on cost of capital. The beta-coefficient is negative for E.V. However, all of the coefficients are not statically significant as their respective P-value is greater than 0.05. The beta coefficient is positive for liquidity. Meaning that a percentage rise in liquidity will cause increase in the cost of capital by 0.026. But again the coefficients is not significant as the P-value is greater than 0.05. Coefficient of most of the variables is not significant and also the p-value of the regression model is not significant. Therefore, the results are not strong enough to establish the relationship between cost if capital and capital structure. It does not mean that there is no relationship between cost of capital and capital structure. The regression coefficient of leverage is significant with P-value below 0.05. Likewise the figure of other variables infer according to their signs and value. The R^2 of our multiple regression model is 80.6%. which is very much considerable. Our regression model satisfactorily explains the variation in cost of capital.

4.2.3 Cost of Equity and Leverage

Cost of equity is the minimum rate of return a firm must offer shareholders to compensate for waiting for their returns, and for bearing some risk. The cost of equity capital for a particular company is the rate of return on investment that is required by the company's ordinary shareholders. The return consists both of dividend and capital gains, e.g. increases in the share price. The returns are expected future returns, not historical returns, and so the returns on equity can be expressed as the anticipated dividends on the shares every year in perpetuity.

Leverage generally refers to using borrowed funds, or debt, so as to attempt to increase the returns to equity. Financial leverage takes the form of a loan or other borrowings (debt), the proceeds of which are reinvested with the intent to earn a greater rate of return than the cost of interest. If the firm's rate of return on assets (ROA) is higher than the rate of interest on the loan, then its return on equity (ROE) will be higher than if it did not borrow. On the other hand, if the firm's ROA is lower than the interest rate, then its ROE will be lower than if it did not borrow. Leverage allows greater potential returns to the investor than otherwise would have been available.

Here below, attempt has been make to show the effect of leverage on the overall cost of equity of the concerned banks.

4.2.3.1 Correlation Analysis

The purpose of this section is to determine the empirical relationship between cost of equity and debt equity ratio (leverage). Regarding this, the M-M position is that the cost of equity increases linearly with leverage. On the other hand, tradition belief is that cost of equity either remains constant or rises slightly with moderate level of the debt and after word increase with leverage at an increasing rate. Thus, both these holes that value of the equity increases with leverage. The possibility explored in this section is that, up to some level of debt, the increases

in shareholder earnings may out weight financial risk and as result. The cost of equity may decline with leverage. In other to help in regression analysis zero order correlation between the variables is presented in table 15.

Table 15

Correlation Matrix of the Variables

Variables	L1	LogS	Growth	DPR	EV	Liq
Ke	-0.421(*) (0.040)	0.694(**) (0.000)	0.905(**) (0.000)	0.396 (0.055)	0.227 (0.285)	0.327 (0.119)
L1		-0.308 (0.143)	-0.257 (0.225)	-0.305 (0.147)	0.164 (0.444)	-0.166 (0.438)
LogS			.538(**) (0.007)	0.511 (0.011)	-.065 (0.762)	.538(**) (0.007)
Growth				0.264 (0.213)	0.365 (0.079)	0.211 (0.323)
DPR					0.299 (0.155)	.126 (0.556)
EV						-0.086 (0.691)

P-value is given in the bracket

** Correlation is significant at the 0.01 level (2-tailed)

* Correlation is significant at the 0.05 level (2-tailed)

Table 15 indicates that in listed companies, cost of equity is negatively correlated with leverage and positively with size, growth, DPR, E.V. and liquidity. The negative correlation between cost of equity and leverage indicate a decrease in cost of equity with the increase in the portion of debt in a capital. Corresponding P-value indicates that the correlation between cost of equity and leverage is statistically significant as the P-value is below 0.05. The positive correlation

between cost of equity and size and growth indicates that large and growing companies are required more capital as a result cost of equity is increased. Corresponding P-value advises the result to be significant as it is below 0.05. Where as positive correlation between cost of capital and DPR, E.V. and liquidity is not justified to be significant as the P-value for these variables are above 0.05.

The leverage is positively correlated with EV and negatively with size, growth, DPR and Liquidity. The positive correlation between EV indicates the increase in firm's earning due to increase in debt financing, which is not significant as the P-value is above 0.05, i.e., 0.164%. The negative correlation between leverage and size seem to be significant with p-value less than 0.05. For growth, DPR and liquidity, P-value is higher than 0.05 hence it is insignificant.

Size of the firm is negatively correlated with E.V but it is statistically insignificant as the P-value is greater than 0.05. Correlation of size is positive with Growth DPR and Liquidity but again it is insignificant as the P-value is greater than 0.05.

The growth is positively correlated with DPR, liquidity and EV. But the results are insignificant as the corresponding P-values are greater than 0.05.

DPR is positively correlated with E.V and Liquidity. But again the results are insignificant as the P-values are greater than 0.05

Lastly EV is negatively correlated with liquidity which is also insignificant with P-value of 0.086.

Thus, above correlation matrixes clearly show the cost of equity is negatively correlated with leverage which suggests that the cost of equity decline with leverage.

4.2.3.2 Simple Regression Analysis

In other to validate relationship between cost of equity and other explanatory variables the simple regression (Model IV) are estimated. The results of these equations are presented in table 16.

Table 16

Simple Regression Result with Cost of Equity as Dependent Variable (Model IV)

(Ke = Cost of Equity, a = Constant, b = Beta coefficient, l = Leverage, Log S = Size of firm, DPR = Dividend per share, Liq. = Liquidity, G = Growth, E.V. = Earning volatility)

Model	no. of Observation	Constant (a)	Beta coefficient	R2	S.E. of beta coefficient	T-value	P-value
$Ke=a+b_1L_2$	24	0.424	-0.504	0.177	0.231	-2.177	0.040
$Ke=a+b_1Logs$	24	-0.200	0.032	.0482	0.007	4.527	0.000
$Ke=a+b_3 G$	24	0.011	0.007	0.819	0.001	9.963	0.000
$Ke=a+b_4DPR$	24	0.140	0.430	0.157	0.212	2.024	0.055
$Ke=a+b_5 EV$	24	-0.072	0.241	0.052	0.220	1.095	0.285
$Ke=a+b_6Liq$	24	-0.422	0.296	0.107	0.182	1.623	0.119

As the regression of cost of equity on leverage is concern; beta coefficient is negative, which indicates that the cost of equity decreases by -0.504 as leverage increases. The result is significant with the P-value of 0.040 which is below critical value of 0.05. The co-efficient of determination R2 is 17.7%. Hence is significant exhibiting 17.7% of variation in cost of equity explained by the variable.

As we see the regression of cost of equity on size, the result leads to the conclusion that cost of equity increases by 0.032 as size increases. The coefficient is statistically significant with P-value of 0.000. R2 is also significant at 48.2% exhibiting 48.2% of variation in cost of equity explained by the variable.

Beta coefficient is positive with respect to the growth, indicates that cost of equity increases as the companies achieve growth. The coefficient is statistically significant with P-value of 0.000. R2 is also significant at 81.9% exhibiting 81.9% of variation in cost of equity explained by the variable.

Regression of cost of equity with dividend payout ratio indicates that the cost of equity increases as the companies pay higher dividend. But the P-value is insignificant at 0.055 which is greater then critical P-value of 0.05. R2 is also slightly small exhibiting 15.7% of variation in cost of equity explained by the variable.

Beta coefficient is positive in case of earning variability, which indicates that cost of equity increases as operating profit increases. But the P-value is insignificant at 0.285 which is greater then critical P-value of 0.05. R2 is also very small and insignificant exhibiting only 5.2% of variation in cost of equity explained by the variable.

Lastly the regression of cost of equity on liquidity shows positive relationship with its' positive beta coefficient of 0.296. But the result is insignificant with P-value of 0.119 which is greater than the critical value of 0.05. R2 is also insignificant indicating only 10.7% of variation in cost of equity explained by the variable

From above analysis we can conclude that in some cases cost of equity will decrease with leverage. The result goes against both the M-M position and Traditional view but we have proved our point that, up to some level of debt, the increases in shareholder earnings may out weight financial risk and as result. The cost of equity may decline with leverage.

4.2.3.3 Multiple Regression Analysis

To make more reliability in the analysis multiple regression (model V) is done and the result of the model is represented in the table 17.

Table 17

Multiple Regression Results (Model V)

Reg. Equation Ke = a +b1L2+b2Log S +b3 G+b4 DPR +b5 EV+b6Liq

Variables	Beta coefficient	St. error	T-value	P-value	Status
Constant (a)	0.061	0.147	0.417	0.682	Insignificant
L1	-0.168	0.105	-1.602	0.128	Insignificant
LogS	0.009	0.006	1.504	0.151	Insignificant
Growth	0.006	0.001	6.656	0.000	Significant
DPR	0.059	0.117	0.502	0.622	Insignificant
EV	-0.023	0.111	-0.212	0.835	Insignificant
Liq	0.024	0.084	0.285	0.779	Insignificant

R2	0.903
F	26.234
P-Value	0.000

It can be observed from table 17 that the beta coefficient of leverage is negative, indicating that the cost of equity decreases as leverage increases. The coefficient of multiple determination R2 =.0.903 indicate that the regression model has explained 90.3% of total variation in cost of equity. This is satisfactory level of explanation for the model as a whole. Furthermore, the P-value for the regression is 0.000 which is less than critical of 0.05. Hence the result is significant.

Beta coefficient is not significant with the P-value of leverage 0.128, which is greater than the critical P-value of 0.05. Thus, we can say that leverage has no affect on cost of equity.

The beta co-efficient of size and growth implie that cost of equity increases by 0.009 and .006 respectively as size and growth increases. The beta coefficient size is insignificant with P-value of 0.151 and growth is significant with P- value of 0.

Similarly ,the coefficient of dividend payout ratio suggests that investors havenot preference for current dividend because beta coefficient is positive . It suggests that cost of equity increase with in DPR. However it is not significant as P-value is 0.622.

Beta coefficient of earning variability is nagetive, suggests that the cost of equity decrease as business risk decreases. The coefficient is not statically significant with P-value of 0.835.

The coefficient of liquidity is positive suggests that cost of equity decreases as short term risk increases. The coefficient is not statically significant with P-value of 0.779.

In general, the tradition view is that the cost of equity remains horizontal or rises slightly over a wide range of leverage and afterwards increases with leverage at an increasing rate. Regarding this, the M-M position is that the cost of equity increases linearly with leverage. From the result described above, no clear generalization can be made regarding the role of corporate debt influencing the cost of equity. Only it can be stated that in certain cases the cost of equity will decrease up to a point, in others the use of debt may increase the cost of equity. Generally the cost of equity is constant and fluctuation with rising range.

4.3 Major Findings of the Study

The percentage of total debt of the firm covered by long-term debt is indicated by Long-term debt to Total Debt ratio. BOK has 26.31% of average long-term debt to total debt ratio. Similarly HBL, NBBL and NIBL have average ratio of 27.48%, 33.22% and 31.44% respectively. In all the four cases, the total debt is contributed by current liabilities to a large extent. The analysis of all four Banks reveals the fluctuating trend of long-term debt to total debt ratio. Among the four, BOK has used minimum long-term debt and NBBL has the maximum long term debt in comparison to other three banks.

The percentage of total assets of the firm covered by long-term debt is indicated by long-term debt to total assets ratio. BOK has 28.92% of long term debt to total assets. Similarly HBL, NBBL and NIBL have average ratio of 25.86%, 35.57% and 29.35% respectively. Among four banks, HBL has minimum long term debt to total assets and NBBL has the highest.

The analysis shows that these banks have either no debt or very low percentage of debt in comparison to equity capital. Debt to equity ratio of BOK, HBL, NBBL and NIBL is 14.08%, 31.74%, 0.00% and -0.76% respectively. NBBL has lowest debt equity level. In fact no debt capital at all and NIBL has the highest of 39.27%

The analysis shows that BOK, HBL and NIBL are able to pay there interest amount but NBBL may fail to do so. Among the four, HBL has the highest interest coverage ratio of 2.55 and NBBL has the lowest ratio of 0.36. Similarly, interest coverage ratio of BOK and NIBL are 2.24 and 2.09 respectively.

In comparison, BOK seems to have the highest average return on asset of 1.81%. The average of HBL, NBBL and NIBL are 1.62%, -5.20% and 1.48% respectively.

The Return on Shareholder's Equity of all four banks seems to be fluctuating. The average return of BOK is 25.25% which indicates that the shareholders earn 25.25 paisa per rupee invested. Similarly HBL and NIBL have 27.45% and 73.39% respectively. Return on Equity of NBBL is not applicable as it has overall negative equity capital due to the negative value of shareholders reserve. Thus, by analyzing of average return, we can conclude that return earned by the shareholders' of NIBL is least i.e. 21.86% and shareholders of HBL are getting the maximum return on their investment at 27.45%.

The earning per share explains net income for each unit of share. It shows the market position of the issued shares. The average earning per share of BOK, HBL, NBBL and NIBL are Rs.34.33., Rs.56.82, Rs.-66.75 and Rs.43.83 respectively. Among the four banks, HBL has the highest earning per share and NBBL has the lowest.

Dividend per share is the earning distributed to ordinary shareholders. The analysis shows among the four Banks, NIBL has paid the highest average dividend of Rs.22.97 and NBBL has paid the least, in fact no dividend at all. Similarly dividend per share of HBL and BOK is Rs.12.15 and Rs.14.67respectively.

In descriptive Statistics Analysis of the variables, It shows that the highest cost of capital is 4% of BOK, highest L_1 is 9.9% of NBBL, largest size is 7.74 of HBL, highest growth is 1.56% of BOK, highest DPR is 44% of NIBL, Highest Liquidity is 1.40 of NIBL, highest earning volatility is 34% of NIBL and finally highest cost of equity is of BOK and HBL, i.e.5% each.

Correlation Coefficient between variables shows clearly negative relationship between Cost of Capital and Leverage. P-value of 0.000 indicates this correlation to be perfectly significant. It advises that cost of capital can be decrease by increasing the portion of debt finance in the capital structure. It also has negative

relationship with size and earning volatility. With remaining variables it has positive relationship. The correlation between cost of capital and leverage, size, growth, DPR, E.V. and liquidity is -63.3%, 71.3%, 61.4%, 35.6%, -13.0% and 51.7% respectively. Correlation is significant for leverage, growth and liquidity and for rest of the variables are insignificant

Simple Regression analysis also shows a negative relationship between cost of capital and leverage. It indicates that the cost of capital will decreases by 9.5% as leverage increases. The result is significant with the P-value of 0.000 which is below critical value of 0.05. The co-efficient of determination R2 is 40.1%. Hence is significant exhibiting 40.1% of variation in cost of equity explained by the variable. Similarly it has negative relationship with earning volatility with beta coefficient of -0.018. Cost of capital has positive relationship with Size, growth, DPR and liquidity with beta-coefficient of 0.004, 0.001 and 0.059 respectively. P-value exhibits that the result is significant for all variables except DPR and E.V. Corresponding R2 value for size, growth, DPR, E.V. and liquidity is 0.509, 0.376, 0.127, 0.017 and 0.267 respectively. Indicating respective percentage of variation in cost of equity explained by the variables

Multi-Regression also reveals that leverage has negative relationship with cost of capital with beta coefficient of -0.056. It indicates that the cost of capital will decreases by 5.6% as leverage increases and the P-value of leverage exhibits the result to be significant. Similarly, cost of capital has negative relationship with E.V and has positive relationship with Size,DPR and liquidity growth has no relationship. Corresponding P-value exhibits that the result is in significant for all of these variables. P-value of the model itself is not significant hence we can say that the model is not showing a clear relationship between cost of capital and capital structure. A 80.6% of total variation in cost of capital has been explained by regression model.

Correlation Analysis shows that the cost of equity is negatively related with leverage with it beta coefficient of -0.421 which indicates that when leverage increases, cost of equity declines by 42.1%. Similarly it has positive correlation with size, growth, DPR, E.V. and liquidity. Corresponding P-value indicates that the correlation between cost of equity and leverage is statistically significant as the P-value is below 0.05. The positive correlation between cost of equity and size and growth indicates that large and growing companies are required more capital as a result cost of equity is increased. Corresponding P-value advises the result to be significant as it is below 0.05. Where as positive correlation between cost of capital and DPR, E.V. and liquidity is not justified to be significant as the P-value for these variables are above 0.05.

Simple Regression Analysis also indicates that cost of equity decreases as the leverage increase. With other variables it has positive relationship. P-value exhibits that relationship is significant for leverage, size and growth. For rest of the variables it is insignificant. Corresponding R2 value for leverage size, growth, DPR, E.V. and liquidity is 0.401, 0.509, 0.376, 0.127, 0.017 and 0.269 respectively. Indicating respective percentage of variation in cost of equity explained by the variables

Multiple Regression Analysis also shows that cost of equity will decrease up to a point with the use of debt. Cost of equity is also negatively related with growth and DPR where as positively related with size, E.V. and liquidity. Respective beta coefficient of leverage, size, growth, DPR, E.V and liquidity is -0.056, 0.001, 0.000, 0.008, -0.027 and 0.026. Their corresponding P-values are 0.008, 0.096, 0.697, 0.911, 0.478 and 0.549 respectively which exhibits that regression is insignificant for all the variables. P-value of the regression model exhibits the significance of the model with its value 0.000 which is below the critical P-value of 0.05. A 80.6% of total variation in cost of capital has been explained by regression model.

CHAPTER 5
SUMMARY, CONCLUSION AND RECOMMENDATIONS

This chapter highlights some conclusions and recommendations on the basis of the major findings of the study derived from the analysis of capital structure and cost of capital of selected banks. This chapter includes two aspects of the study. First aspect of the study focuses on summarizing the fact-findings of the study and making concluding remarks upon them. The second aspect of the study focuses on making some useful suggestions and recommendations based on findings of the study.

5.1 Summary

The main objective of this study was to analyze the relationship between capital structure and cost of capital and the relationship between cost of equity and the debt ratio (leverage) using listed Nepalese joint venture bank's data published by NEPSE and annual report of concerned banks. For that purpose, six different determinants of capital structure and cost of capital of business firms are taken. Those are leverage, growth, liquidity, earning variability, size (logs) and dividend payout ratio. In this study M-M prepositions were used as focus point for carrying out empirical analysis. The M-M Preposition-I states that capital structure does not affect the average cost of capital of a firm. It is based on an implicit assumption regarding investors' attitude towards financial risk arising from the use of debt in the capital structure of a firm. M-M has contended that investors would require a higher return on equity (i.e. the earning yield) for increased financial risk. M-M proposition II described the behavior of earning yield with financial risk or leverage and states that earning yield required by investors is an increasing linear function of financial risk or leverage. In contrast to M-M hypothesis, the traditional view is that cost of capital structure and the earning

yield is wither constant or rises slightly with financial risk or leverage within “acceptable” limit of debt.

This study covered four listed banks, namely, Bank of Kathmandu Limited, Himalayan Bank Limited, Nepal Bangladesh Bank Limited and Nepal Investment Bank Limited. For the purpose of the study, the necessary data on capital structure and other related variables were collected from official web site of NEPSE and annual report of concerned banks.

This study used simple as well as multiple regression equipment to accomplish the objectives. It employed the simple regression equation to examine the relationship of cost of capital with each of the selected explanatory variables and the multiple regression equation was used to examine the relationship between cost of capital and leverage and cost of equity and debt ratio together with other explanatory variable.

5.2 Conclusion

Correlation Coefficient between variables shows clearly negative relationship between Cost of Capital and Leverage. It advises that cost of capital can be decrease by increasing the portion of debt finance in the capital structure. It also has negative relationship with size and earning volatility. With remaining variables it has positive relationship.

Simple regression results of average cost of capital on each of explanatory variables displayed that the beta coefficient is negative for leverage, size and E.V. and positive for growth, DPR and liquidity. P-value of the leverage variable is perfectly significant. It is also significant for size and liquidity. For rest it is insignificant.

The result of multiple regression of average cost of capital on selected explanatory variables reverted negative beta coefficient for leverage, size, growth, DPR and E.V. and positive for liquidity. The coefficient for leverage is significant with P-value less than 0.05 at 0.016. However, rest of the coefficients are not statistically significant. Also the P-value of the model itself is not significant. The results, therefore, is not strong enough to establish the relationship between cost of capital and capital structure. However, it does not mean that there in any relationship between cost of capital and capital structure. A 61.8% of total variation in cost of capital has been explained by regression model.

Correlation Analysis shows that the cost of equity is negatively related with leverage which indicates that when leverage increases, cost of equity declines. Where as it has positive relationship with size, growth, DPR, E.V. and liquidity. Correlation is significant for leverage, size and growth and for DPR, E.V. and liquidity it is insignificant.

The result of regression of cost of equity on each of the selected variables are concerned, beta coefficient of leverage is negative in sign and positive for size, growth, DPR. Corresponding P-value exhibited that the coefficient is significant for leverage, size and growth. However for rest of the variables it is not significant.

The multiple regression result of cost of equity on selected explanatory variables reverts that sign of beta coefficient were negative for leverage, growth and DPR and positive for size, Liquidity and EV but the coefficient of leverage is not significant. It indicates the cost of equity remains same over a wide range of leverage.

Finally to summarize the main conclusion, the present study does not support the M-M independent hypothesis. It indicates that the cost of capital can be affected by the use of debt in capital structure. However, the result was slightly supporting

the traditional belief. The cost of equity, in some case increases with leverage and in some case decreases with leverage. It was also difficult to support from the traditional belief. Anyway we get the following

- The cost of capital is declining function of leverage.
- The cost of equity first declines with leverage and then rises.

5.3 Recommendations

On the basis of above analysis and findings, following recommendations can be advanced to overcome the issues related to cost of capital and capital structure of joint venture banks in Nepal.

a) On the basis of above analysis and findings it can be concluded that Nepalese listed joint venture banks are not properly adopting capital structure and cost of capital concept. The reason may be lack of theoretical and particle knowledge regarding the concept. Though Nepalese investors are attracted towards investing in the banking sector, it can be viewed that the banks are using very low or no amount of debt finance in their total capital structure. This has avoided them from taking the benefit of other wise low average cost of capital. Thus, over all capital structure scenarios of the firm are in confusing state. Therefore, we may recommend that the management of the banking sector must always be well informed about the sources of capital, their reliability, their cost and possible terms and conditions that can be made by the lender at the time of acquiring the capital and also have knowledge of existing atmosphere of the capital market.

b) The management should not take any financial decision randomly. It seems that they are adopting post-active approach to financial management. They should avoid this behavior and achieve proactive approach with well planned and systematic fulfillment of current and future need of capital with

proper analyze and evaluate the sources of capital properly, keeping in mind the view of cost of capital concept and theories of capital structure along with the investment opportunity and investment policy of the bank. This will help them to take correct decision and determine whether it is beneficial of not to fulfill there fund requirement from particular source of capital at given rate of cost for that particular fund. It means that knowledge of capital structure and cost of capital pays a vital role in investment and profitability of concern banks.

c) Dividend provided by the banks is the major evaluating factor for the investor. It influences the interest of investors to invest in certain bank. Higher dividend payout ratio tends to attract equity capital as well as debt capital at lower rate. Thus, lowers the cost of capital but on other hand higher dividend ratio also means less reserve or internal source of fund. This may limit the banks ability to cash on the immediate investment opportunities. Also if the banks are not able to maintain the payout ratio in the years to come, it will give negative impact on the image of the banks. Hence they are recommended to maintain optimum level of dividend payout ratio with respect to the industry average.

d) Adequate liquidity is very much important for any organization in order to meet its day to day as well as current liabilities. The optimal standard ratio should be 2:1, but this standard ratio is not applicable in banks and financial institutions. So the ratio maintained by the commercial banks at the level of around 1:1 is regarded as good and sufficient to meet the normal contingencies. Based on this it can be viewed that all the banks have maintained the sufficient level of liquidity. But liquidity comes with a cost. It freezes a portion of funds which other wise could have been invested to generate income. This ultimately increases the cost of capital. Hence to reduce this unacceptable condition and to further enhance there position, they are recommended to increase the investments in the government securities, which helps to utilize these funds into income generating asset as well as minimizes risk and also helps to maintain optimal level of liquidity.

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