

CHAPTER – I

INTRODUCTION

1.1 General background

Bank is an institution, which deals in collection deposits and advancing of loans and other credit activities. The collected deposits are utilized for giving loans to different industrial and commercial enterprises. Besides these activities banks also perform payment or remittance and other activities. In other words, bank is an institution, which accepts deposits from public and in turn advances loans by creating credit. It is different from other financial institution in that they cannot create credit through they may be accepting deposits and making deposits. Simply speaking, a bank refers to a development bank. So, the activities of development banks are synonymous to banking.

A banker or bank is a person, firm or company, having a place of business where creditors are opened by the deposit or collection of money or currency subject to be paid or remitted upon draft cheque or order or where money is advanced or loaned on stocks, bonds, bullion and bills of exchange and promissory notes are received for discount and sale” (Upadhaya and Tiwari, 1982: 167).

The governments’ liberalization policy leads the economic development by the establishment of Development banks. Nevertheless, its many shortcomings, the system have shown dynamism and innovativeness in

meeting the challenges of mobilizing resources for the development of the country.

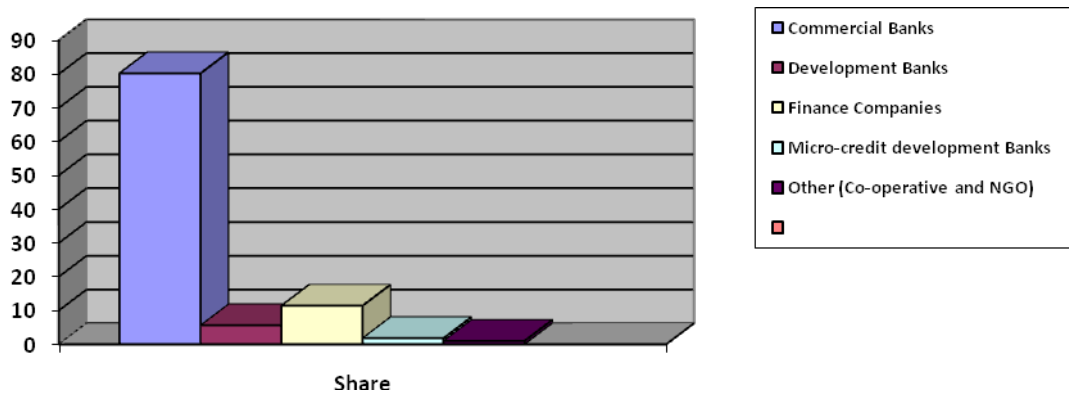
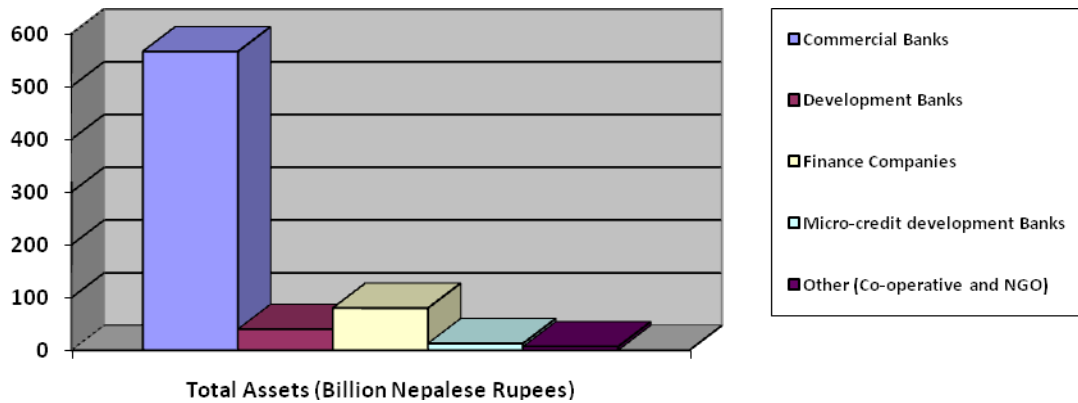
1.1.1 Evolution & development of banking industries

The history of bank in Nepal starts from the establishment of the Nepal bank Ltd. in 1994 B.S. It is the first bank in Nepal. Before its establishment, there was no such organized banking system in the country. Today the growth of bank in Nepal is praiseworthy. Altogether more than 58 development banks are operating all over the country.

Though Nepalese financial sector is reasonably diversified with institutional arrangement of varied nature of financial institutions, development banks are holding total assets of Rs.40 billion Rupees out of Rs.706 billion, which is 5.6% share in total assets share in the structure of financial sector. The following figure depicts the share of banks and other financial institutions out of total financial assets.

Table 2: Share of banks on financial claims

Bank and financial institutions	Total assets (Billion Nepalese Rupees)	Share
Commercial banks	566	80.2
Development banks	40	5.6
Finance companies	80	11.4
Micro-credit development banks	13	1.8
Other (Co-operative and NGO)	7	1
Total	706	100



Source: Banking and Financial Statistics (Mid-July 2008, No.51)

Development banks also contribute significant role in affair of Nepalese capital market. Due to the lack of productive lending no body can tell the future of development banks. Maoist activities influenced the banking sectors as well as the whole economy in the past. Moreover, the situation is improving due to the ongoing Peace Process. Even though, secondary capital market operates regularly and investors use to buy and sale the securities. That's why investors should be aware of analyzing return & capital structure analysis of banks well while investing it.

A firm is required to maintain a balance between liquidity and profitability, while conducting its day to day operations. Liquidity is a precondition to ensure that firms are able to meet its short-term obligations and its continued flow can be guaranteed from a profitable venture. The importance of cash as an indicator of continuing financial health should not

be surprising in view of its crucial role within the business. This requires that business must be run both efficiently and profitably. In the process, an asset-liability mismatch may occur which may increase firm's profitability in the short run but at a risk of its insolvency. On the other hand, too much focus on liquidity will be at the expense of profitability and it is common to find finance textbooks (for e.g. see Gitman, 1984 and Bhattacharya, 2001) begin their working capital structure with a discussion of the risk and return tradeoffs inherent in alternative working capital policies. Thus, the manager of a business entity is in a dilemma of achieving desired tradeoff between liquidity and profitability in order to maximize the value of a firm.

1.1.2 Introduction to Siddhartha development bank Limited

Siddhartha development bank Limited (SDBL), formally commenced its operation on 2057/3/11 is delighted to announce its up gradation to national level development bank after successful completion of ten years of operation as the mission “dedicated to development” & having vision “SDBL aspires to be the best development bank in Nepal with global network and provide international level of banking and financial service”.

Head office of bank is situated at Tinkune Kathmandu which is shifted from butwal at 2066 magh 3 B.S. this is the first Development Bank of Western Development region of Nepal.

1.2 Focus of the study

Business firm or bank requires the initial funds for its sound operation. Capital is the lifeblood of every business. The fund required are generated usually by two source i.e. equity and debt. Equity provides the ownership of the firm to the shareholders. On the other hand, debt is a fund borrowed with fixed charges to be paid periodically to the debtor. The term capital structure refers to the proportion of debt to equity capital or the composition of long

term sources of finance, such as preference capital, debentures, long-term debt and equity capital including services and surplus (i.e. retained earning) and excluding short-term debts.

Good capital structure gives the low cost of capital and low overall rate of return that needs to be paid on funds provided. If the cost of capital is low then the discounted value of future cash flows generated by the firm is high, resulting in a high overall firm value.

1.3 Statement of the problem

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

Other problem faced by the banking industry is the lack of optimal capital structure to address the changing environment in the bank. The success and prosperity of a bank relies heavily on maximization of the wealth of the shareholders or return on equity. Structure of the capital used in the firm is not proportionate which is highly fluctuating with respect to time which affects the value maximization of the bank.

In this study I will try to analyze and examine the capital structure of Siddhartha development bank Limited. This study deals with the following problems.

- Ratio of different capital and their significance to growth.
- Capital structure policies followed by the bank.

- Return pattern and development and implementation of the capital structure policy.

1.4 Objectives of the study

The primary objective of this study is to find out return and capital structure of Siddhartha development bank is fruitful or not with the help of risk and return analysis. The specific objectives of the study are set as follows:

- To analyze the different financial ratio.
- To analyze the financial leverage.
- To analyze the rate of return of SDBL.
- To examine the capital structure of the bank.

1.5 Scope of the study

Due to the lack of appropriate information related to the capital structure, available research, journals and articles in the Nepalese's bank, necessary information can not receive during the time of study. We know theory that capital structure of the firm affects the firm value and return. The effort is made to highlight the capital structure of SDBL expecting that the study can balance the proportion of the equity and debt capital used by the bank. On the other hand, the study would provide information to the management of the bank that would help them to take corrective action to optimize the value of the bank by using optimal capital structure. This study can provide information to the shareholder and the public on the proportion of equity and debt used as the fund used by the bank.

1.6 Limitation of the study

- The study covers the ten years period up to end of B.S 067. But it has not enough data so study is limited to F.Y.064/65 to 067/68.
- Due to the time constraint only one development bank (i.e. SDBL) is selected for the study.
- The study is basically depends upon secondary data.
- The study only focuses on the analysis of capital structure & rate of return of banks.
- The accuracy of this research strictly depends up on the reliability of secondary data.

1.7 Organization of the study

This study is organized into five chapters i.e. introduction, review of literature, research methodology, presentation and analysis of data, and summary, conclusion and recommendation.

Chapter I - Introduction

The first chapter deals with the subject matter consist of introduction, focus of the study, statement of the problem, Scope of the study, objectives, and limitations.

Chapter II - Review of literature

The second chapter is concerned with literature review that includes a discussion on the conceptual framework of capital structure, review from journals, review from theses and review from independent studies in Nepal.

Chapter III - Research methodology

This chapter describes the research methodology adopted in carrying out the present research. It deals with research design, nature and sources of data, population and sample, method of analysis and financial and statistical tools.

Chapter IV - Presentation and analysis of data

In this chapter, relevant data for the study is presented, analyzed and interpreted by using various tools and techniques of financial and statistical to present the result relating to the study in a very lucid manner.

Chapter V – Summary, conclusion and suggestion

The fifth chapter concerns with the suggestive framework that consists of summary, conclusion and recommendation of the study,

The bibliography will be incorporated at the end of the study.

CHAPTER – II

REVIEW OF LITERATURE

Literature review is to develop idea and concept about the selected topic or in one's chosen field of study by reviewing all the relevant materials. In fact, review of literature begins with a search for suitable topics and continues throughout the duration of the research work. This helps the searcher to explore what kind of research studies have already been conducted in his or her field of study and thus reduces the probability of duplication. Moreover, it is useful for exploring what areas of research are still to be conducted. This chapter, therefore, deals with the previous studies that are relevant to this research. This chapter provides some conceptual theory of Capital structure and return related terms with it.

Haywood and Wragg (1982) say “Literature review is the process of locating, obtaining, reading and evaluating the research literature in the area of your interest.”

Baker (2002) defined it as “A literature review is a body of text that aims to review the critical points of current knowledge on a particular topic.”

Some of the purpose of literature review is as follows:

1. What research has been done in the subject?
2. What others have written about the topic?
3. What theories have been advanced?
4. The approach taken by other researchers?

5. Areas of agreement and disagreement?
6. Whether there are gaps that can fill through the proposed research?

2.1 Conceptual framework:

A business invests to generate additional revenues and income on the basis for its growth. One way to pay for investments is to generate capital from the company's operations. Earnings generated by the company belong to the owners and can either be paid to them in the form of cash dividends or plowed back into the company. The owners' investment in the company is referred to as owners' equity or, simply, equity. If earnings are plowed back into the company, the owners expect it to be invested in projects that will enhance the value of the company and, hence, enhance the value of their equity. But earnings may not be sufficient to support all profitable investment opportunities. In that case the CFO is faced with a decision: recommend that the CEO and the board of directors for go profitable investment opportunities or raise additional capital. A CFO can raise new capital either by borrowing or by selling additional ownership interests or both. The decision about how the company should be financed: the mixture of debt and equity. This decision is referred to as the "capital structure".

Capital is the life blood of the company, it is composed of dept, equity etc. The basic goal of a firm is to maximize the value of the firm or shareholder's wealth. To achieve this goal, the company should have sound investment and financing policy. Company should acquire current assets and fixed assets to run the business smoothly. Thus when a company expands its business, it needs capital.

Capital structure refers to the combination of long term sources of funds, such as, long term debt, preferred stock and common equity including reserves and surplus. Capital structure represents the relationship among different kinds of long-term source of capital and their amount.

Capital investment simply means sacrificing current fund for future cash inflows. Here the future cash inflows are the ‘returns’ and we all know that future is uncertain. Uncertainty obviously points out ‘risk’. Analyzing risk and return shows the relation or trade off between risk and return on any kind of investment. Investment, risk and return are the financial terms, which are heavily associated with each other.

Bank means a corporate body established to conduct financial transactions.

Liquid assets mean the cash balances of a bank or financial institution, the balances held by a bank or financial institution in the current account, the balances maintained by a bank or financial institution with the Rastra bank, and the other assets of a bank or financial institution specified as liquid assets by the Rastra bank from time to time.

Deposits mean amounts deposited in current, savings or fixed accounts of a bank or financial institution; the term includes amounts to be accepted by a bank or financial institution through various financial instruments prescribed by the Rastra bank.

Capital fund means the total of the primary and supplementary capital of a bank or financial institution; the term includes any other fund of the institution specified as such by the Rastra bank from time to time.

Primary capital means the funds of banks or financial institution kept under such heading as the paid-up capital, share premium, non-refundable preference shares, general reserve fund and accumulated profit and loss; the term includes the funds kept under other headings designated as primary capital of the Rastra bank from time to time.

Supplementary capital means the funds of a bank or financial institution kept under the headings prescribed by the Rastra bank from time to time.

The capital structure refers to the composition of firm's capital with different sources of funds, particularly to the long-term funds/capitals. However, the term capital structure and financial structure have been used interchangeably in finance literature, a line of technical difference is there, that is, the financial structure comprised of the total combination of equity capital, preferred capital, long-term debt and short-term debt/liabilities, whereas, the capital structure excludes the short-term debt/liabilities. For its investment project, the firm can choose either of the sources or combination of different sources in different forms but the question arising in this regard is which source or the combination is better to maximize the value of the firm, the ultimate objective. Therefore, the capital structure should be examined from the viewpoint of its impact on the value of the firm. The optimal capital structure is that combination of debt and equity, which maximizes the value of the firm. In this respect, the capital structure can be interpreted in terms of target capital structure to strike a balance between risks and returns for maximizing the value of the firm.

In boarder perspective, the sources of the firm's capital can be classified into two basic categories, that is, equity and debt. Both of these capitals hold inherent properties. In one hand, the equity capital provides

investors to control over the firm as owners. However the firm may not be able to use only equity financing because the rational objective is to maximize the value of the firm. The cost of new equity would be higher than the existing one and since the risk pattern on equity is higher, the higher expected rate drives to sell equity in lower price in the market. On the other hand, the debt capital provides investors a certain fixed return and right to first claim over the liquidation. Raising debt capital is also advantageous to the firm in numerous ways. Firstly, interest is tax deductible, which lowers the effective cost of debt. Secondly, debt holders are limited to a fixed return (the coupon amount), so stockholders do not have to share profits if the business does have excess profit. Thirdly, debt holders do not have voting rights, so the stockholders can control a business however they are investing less money than would otherwise be required.

Therefore, the crux of the capital structure theories lies between and among these two basic sources of capital, equity and debt, and interests of three major stakeholders of the firm, stockholders, managers and the debt holders respectively.

2.2 Theories of capital structure:

2.2.1 Traditional theory:

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

Although it is cheaper to finance with debt, this theory certainly rejects to finance all with debt because after a certain level of debt the risk of

non payment increases. In this case shareholders and debt financiers demand a higher compensation.

2.2.2 Modigliani-Miller proposition:

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

2.2.2.1 Modigliani and Miller proposition I with no taxes

In 1958, Franco Modigliani and Merton Miller published their original article concerning capital structure. They have a convincing argument that a firm cannot change the total value of its outstanding securities by changing the proportions of its capital structure. The value of the firm will be the same, regardless which type of capital structure that is chosen. This is a strong argument where the authors explicitly or implicitly assume that:

- Capital markets are frictionless, which means that securities can be purchased and sold costless and instantaneously
- Individuals can borrow and lend at the risk-free rate.
- There are no costs to bankruptcy.
- Corporations can issue only two types of securities, risky equity and risk-free debt.
- All corporations are assumed to be in the same risk class.
- There are no corporate or personal income taxes.
- There is no growth; all cash flow streams are perpetuities.

- Corporate insiders and the public have the same information, no signaling opportunities.
- There are no agency costs and managers always maximize shareholders' wealth.

When all the above assumptions are fulfilled, equation 2.1 holds.

$$V_L = V_U \quad \text{Equation. 2.1)}$$

V_L = Value of levered firm

V_U = Value of unlevered firm

This model is called the M&M proposition I, where the value of the unlevered firm is the same as the value of the levered firm. This means that the total value of any firm is independent of its capital structure (Modigliani and Miller, 1958). At first, with all the assumptions, the model seems unrealistic, but we will later show that even when some of the assumptions are relaxed the argument still holds.

Proposition I is based on the fact that investors can simply do or undo anything the firm can do on its own, which is commonly referred to as homemade leverage. The homemade leverage finding is considered the starting point of modern managerial finance and is one of the most important findings in the area of corporate finance (Ross et. al., 1993).

2.2.2.2 Modigliani and Miller Proposition II with no taxes

An implication of the M&M proposition I is that the expected return on a portfolio consisting of all the firm's debt and equity is constant, as seen in equation 2.2.

$$r_A = \frac{D}{D+E} * r_D + \frac{E}{D+E} * r_E$$

Equation 2.2

D and E are the amount of the firm's debt and equity respectively, and the return on asset (r_A) is constant, regardless of capital structure. This could also be called the weighted average cost of capital (WACC) (Copeland & Weston, 1992). By rearranging the terms, the M&M proposition II is obtained, as seen in equation 2.3.

$$r_E = r_A + \frac{D}{E} * r_A - r_D$$

Equation 2.3

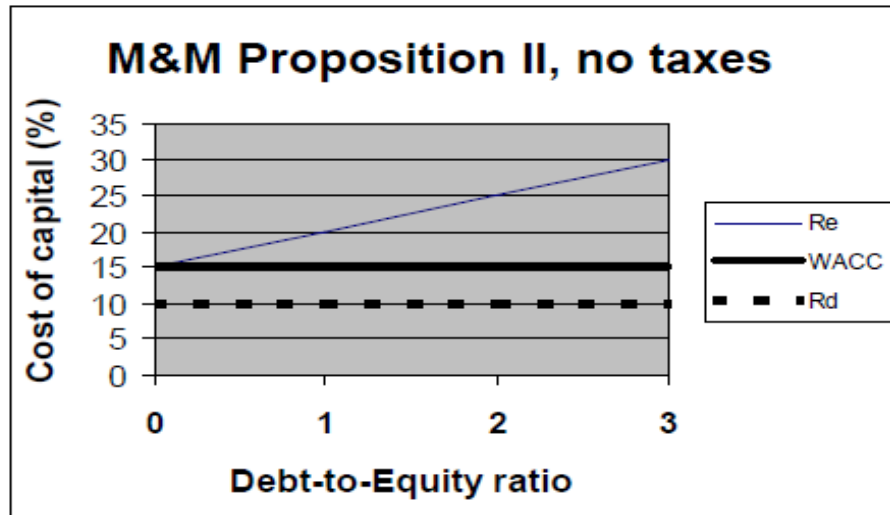
The M&M theory II argues that the expected return on equity is positively related to leverage, and also that risk increases with leverage. Since we know that (r_A) is constant for any capital structure, and that the return on debt (r_D) is assumed to be constant, we can calculate the return on equity (r_E) for different kinds of capital structure. The larger the amount of debt is the larger required return on equity.

We know from proposition I that the company's WACC (r_A) is constant, and that changing the capital structure cannot affect its value. We also know that the rate of return on equity increases as leverage increases, according to proposition II. How can this be? What happens is that risk increases as leverage increases. When the firm moves from an unlevered structure to a levered structure, the operating income is divided on a smaller amount of outstanding shares, which gives larger r_E . r_E has increased, but risk (beta) has also increased (Modigliani & Miller, 1958).

Figure 2.2.2.2 shows that r_E is not important when determining an optimal capital structure. r_E can always be increased by borrowing, but the increase in r_E is offset by the higher risk. WACC remains constant even

when firms change their capital structure and consequently they are not better off with leverage.

Figure 2.2.2.2: Modigliani and Miller Proposition II with no taxes



Source: Copeland & Weston (1992)

The conclusion of the M&M propositions is that the overall cost of capital cannot be reduced by changing from equity to debt, which seems to be cheaper. As firms add debt, the remaining equity becomes more risky and the cost of equity capital increases. The increase in the cost of equity capital is offset by the higher proportion of the firm financed by low-cost debt. The value of the firm and the firm's overall cost of capital are invariant to leverage, which is shown by the constant WACC.

2.2.2.3 Modigliani and Miller proposition I with taxes

One of the more critical assumptions in the M&M proposition I and II is that there are no taxes. This assumption is not very realistic, since basically every country taxes company income. The government has chosen to “subsidize” interest payments to providers of debt capital, which means that debt financing is tax deductible. In other words, a levered company pays

less tax than an all-equity company does. Thus, the sum of debt plus equity is greater for the levered firm.

The value of the levered firm is equal to the value of an unlevered firm plus the present value of the tax shield provided by debt, as seen in equation 2.4.

$$V_L = V_U + T_C$$

Equation 2.4

When the assumption of no taxes is relaxed, the market value of the company increases by taking on more risk-free debt. Consequently the company should take on 100 % debt to optimize company value. This is the M&M proposition I with taxes (Modigliani & Miller, 1963).

2.2.2.4 Modigliani and Miller proposition II with taxes

The M&M proposition II with no taxes shows a positive relationship between the expected return on equity and leverage. The same intuition holds when we add corporate taxes, as seen in equation 2.5.

$$r_E = r_A + \frac{D}{E} * (1 - T_C) * (r_A - r_D)$$

Equation 2.5

The new WACC, including taxes, is seen in equation 2.6.

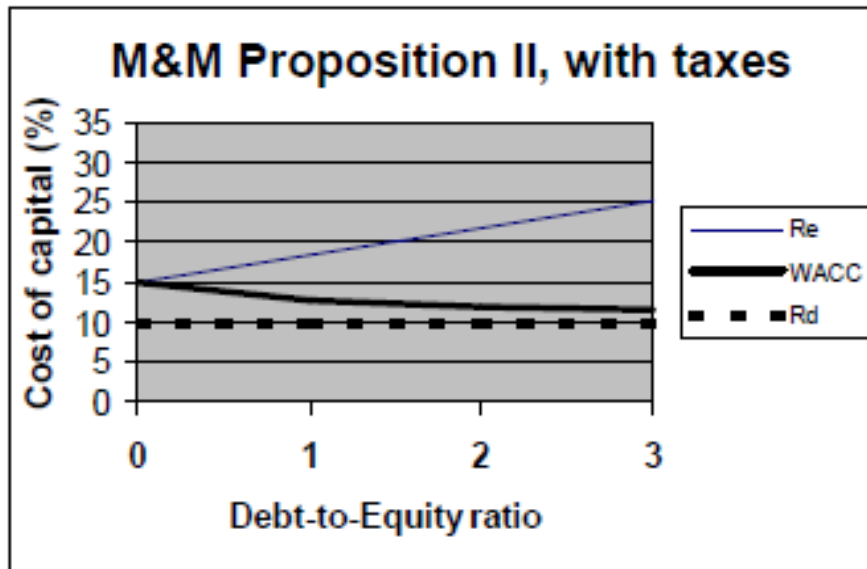
$$WACC = \frac{D}{D+E} * r_D * (1 - T_C) + \frac{E}{D+E} * r_E$$

Equation 2.6

Figure 2.2.2.4 shows that a higher leverage level provides the firm with a lower WACC when corporate taxes exist. This can be compared to figure 2.2.2.2 where WACC is constant even though leverage is increased. This suggests that the firm value will increase with higher leverage since WACC

will decrease, assuming that corporate taxes exist. It is shown that the larger the amount of debt, the higher the value of the firm, which implies that a 100% debt financing should be implemented (Copeland & Weston, 1992).

Figure 2.2.2.4 M&M Proposition II with taxes



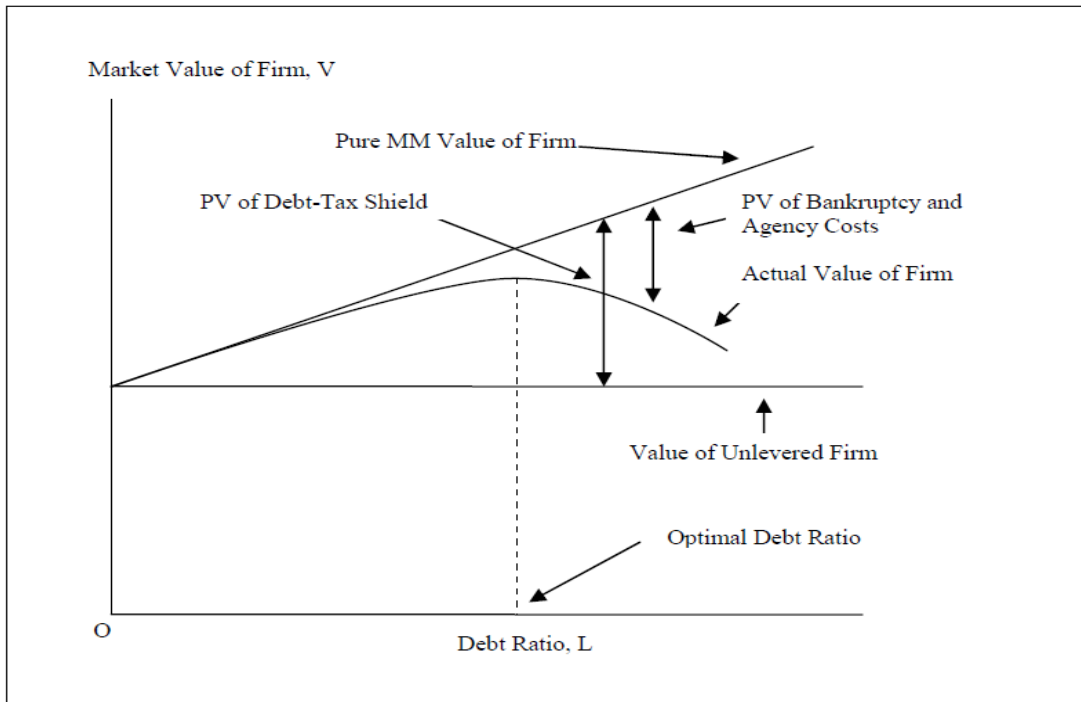
Source: Copeland & Weston (1992)

It is important to keep in mind the restrictive assumptions that must be fulfilled for the M&M propositions to hold. The most important assumption is that the M&M propositions ignore bankruptcy costs, which have been found to exist in reality.

2.2.3 The trade-off theory

The trade-off theory of the capital structure suggests that a firm's target leverage is driven by three competing forces: taxes, cost of bankruptcy (financial distress), and the agency conflict. Therefore, the firm seeks debt level that balances the tax advantages of additional debt against the costs of the possible financial distress and agency conflict. Therefore, a firm sets target leverage ratio and gradually moves toward it.

Tradeoff Theory of Capital Structure



2.2.4. Pecking order theory:

Capital structure theory has become yet another dimension with the explicit modeling of private information in financial theory. Two main strands have emerged in the literature on asymmetric information. In the first approach, suggested by Ross (1977), debt is regarded as a means to signal confidence to the firm's investors. In the second approach, suggested by Myers and Majluf (1984), it is argued that the capital structure is designed to mitigate distortions in the investment decisions caused by information asymmetries. Firms prefer internal financing when available; and, if external financing is required, debt is preferred over equity, that is, 'pecking order'. Myers shows another view of capital structure, not the static trade off theory, but also the pecking order theory. This fifth theory assumes that firms have perforations by choosing a way to finance their projects. The sequence of investment resources is restricted by problems caused by asymmetrical

information between managers and potential investors. The following assumptions are made by this theory (Myers, 1984)

- Firms prefer internal finance.
- They adapt their target dividend payout ratios to their investment opportunities, although dividends are sticky and target payout ratios are only gradually adjusted to shifts in the extent of valuable investment opportunities.
- Sticky dividend policies, plus unpredictable fluctuations in profitability and investment opportunities, mean that internally generated cash flow may be more or less than investment outlays. If it is less, the firm first draws down its cash balance or marketable securities portfolio.
- If external finance is required; firms issue the safest security first. That is, they start with debt, then possibly hybrid securities such as convertible bonds, then perhaps equity as a last resort. In this story, there is no well-defined target debt-equity mix, because there are two kinds of equity, internal and external, one at the top of the pecking order and one at the bottom. Each firm's observed debt ratio reflects its cumulative requirements for external finance.

The result of this pecking order theory is that a firm doesn't have certain target debt ratio. The target ratio is dependant on the way a firm financed its projects in the past. This theory also pays attention to costs of asymmetrical information and costs of bankruptcy. When these costs exist, a firm doesn't always choose to finance projects with a positive net present value. Not a positive net present value determines whether a firm finance a project or not, but the way in which a firm is able to finance their projects.

2.2.5 Stakeholder theory:

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

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

2.3. Determinants of capital structure:

Firms can use either debt or equity to finance their assets. Is one form better than the other? If so, should firms be financed either with all equity or all debt? Or, if the best choice is some mix of equity and debt, what is the optimal mix? What sort of capital structure maintains balance between risk and profitability (return)? In respect to these issues of capital structure several theories have been proposed which suggest that firms select capital structures depending on attributes that determine the various costs and benefits associated with debt and equity financing. Different capital structure models yield a numbers of insights. Here, the attributes that different theories of capital structure suggest may affect the firm's debt-equity choice have been described. The firm-specific variables or attributes, viz.; tax shields, asset structure, profitability, size, growth, volatility, liquidity and product uniqueness are considered as the key determinants of capital

structure decisions. The attributes and their relation to determine capital structure choice are discussed below (Titman and Wessels, 1988).

Taxation: Taxation has been scrupulously investigated as a factor that determines the capital structure of the firms. The key feature of the taxation is that interest is a tax-deductible expense. A firm that pays taxes receives a partially offsetting interest ‘tax-shield’ in the form of lower taxes paid.

Asset Structures: Titman and Wessels (1988), argue that the ratio of fixed to total tangible assets should be an important factor for leverage. The tangibility of assets represents the effect of the collateral value of assets of the firm’s gearing level. Scott (1976) argues that

Profitability: One of the main theoretical controversies concerns the relationship between leverage and profitability of the firm. From the trade-off theory perspective, when the firms are profitable, they prefer debt because the expected bankruptcy cost declines with increasing profitability as well as the interest tax shield will drive for higher profitability.

Size: The size of the firm is also an important factor to determine the leverage or the capital structure of the firm. Warner (1977) and Ang *et al.* (1982) suggest that bankruptcy costs are relatively higher for smaller firms. In a similar vein, Titman and Wessels (1988) argue that larger firms tend to be more diversified and fail less often. Accordingly, the trade-off theory predicts an inverse relationship between size and the probability of bankruptcy, that is, a positive relationship between size and leverage.

Growth: Firms with a high proportion of non-collateralizable assets (such as growth opportunities) could find it more expensive to obtain credit because

of the asset substitution effect (Titman and Wessels, 1988). Similarly, firms in growing industries may have greater flexibility in their choice of investments, allowing equity holders to capture wealth from bondholders. Either way, firms with important growth opportunities are likely to face high agency costs of debt and hence are likely to rely more on equity funds.

Volatility: One firm variable which impacts upon this exposure is firm operating risk, in that more volatile firm earnings streams, the greater the chance of the firm defaulting and being exposed to such cost. Consequently, these firms with relatively higher operating risk will have incentives to have lower leverage than other more stable earning. Myers (1977) suggests that underinvestment problem increases with the volatility of the firm's cash flow because firm with high volatility of cash flow tries to accumulate cash. Firms with stable cash flows should suffer from overinvestment problems and these firms have more leverage.

Liquidity: First firms with higher liquidity ratios might support a relatively higher debt ratio due to greater ability to meet short-term obligations when they fall due. This would imply a positive relationship between a firm's liquidity position and its debt ratio.

Tangibility: It is assumed, from the theoretical point of view, that tangible assets can be used as collateral. Therefore higher tangibility lowers the risk of a creditor and increases the value of the assets in the case of bankruptcy. As Booth et al. (2001, p. 101) state: "The more tangible the firm's assets, the greater its ability to issue secured debt and the less information revealed about future profits." Thus a positive relation between tangibility and leverage is predicted.

Product uniqueness and industry classification: Firm's capital structure should depend on the uniqueness of its product. If a firm offers unique products or services, its consumers may find it difficult to find alternatives in case of liquidation, and hence, the costs of bankruptcy increase. Accordingly, uniqueness is expected to be negatively related to debt ratios. The indicators of uniqueness include expenditure on research and development (R&D) and advertisement expenditure.

2.4. Approaches of capital structures:

- **Traditional approach**
- **Net income approach**
- **Net operating income approach**
- **Modigliani-Miller's approach**

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

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

To explain different theories, the following assumptions are made.

1. Firms employ only two types of capital are employed, debt and equity.
2. The firm's total assets remain constant. Only degree of leverage can be changed by selling debt to repurchase stocks or selling shares to retire debt.
3. The dividend payout ratio is 100% .
4. There are no personal and corporate income taxes. (we shall, however, later consider the implication of taxes.)
5. Perpetual life of the firm.
6. The net operating income (EBIT) is not expected to grow or decline over time.

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

S= total market value of the stock (Equity)

B= total market value of the bonds (Debt)

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

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

I= Interest payments

DEBT

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

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

Equity or common stock

$$\text{Cost of equity capital (Ks)} = \text{Cost of Equity Capital (Ks)} = \frac{d_1}{P_0} + g$$

Where,

d_1 = Next dividend

p_0 = Current price per share

g = Expected growth rate

Overall or Weighted Average cost of capital

$$K = k_d (B/v) + K_s (s/v)$$

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

The value of the firm is thus,

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

2.4.1. Traditional approach

The traditional capital structure theory, which is taken as middle ground position is also known as an intermediate approach. It is a compromise between the net income approach and the net operating income approach. According to traditional view, which suggested that up to some 'moderate' amount of leverage risk, does not increase noticeably on either the debt or equity. So both K_d and K_e are relatively constant up to some point of leverage, however, beyond this threshold debt ratio, both debt and equity costs begin to rise sharply, and this increase more than offsets the advantages of cheaper debt. The result is (i) a 'U' shaped weighted average cost of capital curve and (ii) a value of the firm which first rises, then hits a peak, and finally declines as the debt ratio increases. Thus, according to the traditionalists, there are some capital structures with less than 100 percent debt which maximize the value of the firm.

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.

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 this will be reflected in increase in market value of firm and decline in a overall cost of capital (K).

Second stage: optimum value

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

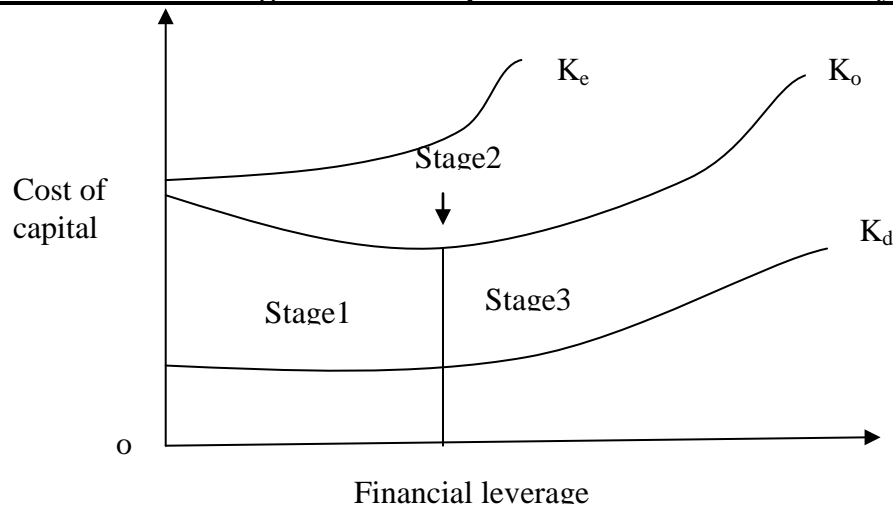
Third Stage: declining value

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

Figure:1 effect of leverage on cost of capital a under traditional theory



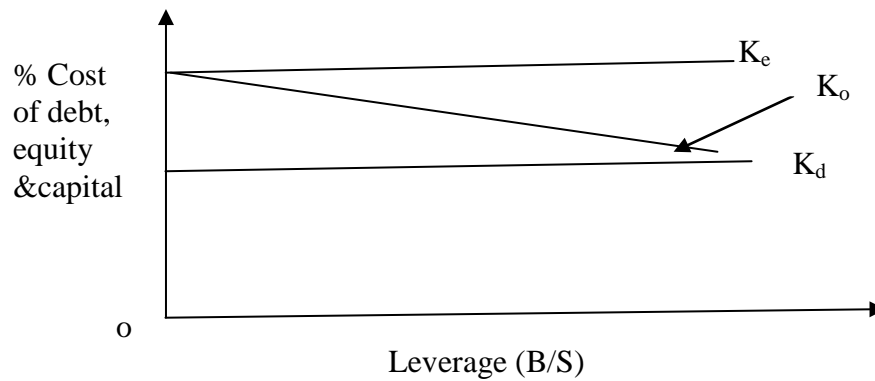
2.4.2 Net Income approach

According to net income approach, the cost debt capital and the equity capital structure remains unchanged when leverage ratio varies. As a result, the weighted average cost of capital declines as the leverage ratio increases. This is because when the leverage ratio increases, the cost of debt, which is lower than the cost of equity, receives a higher weight in calculation of the average cost of capital. Thus, higher leverage results higher value of the firm. Assumptions of this approach are:

- i) Change in leverage does not change the risk position / risk perception of investors, as a result, the cost of equity (K_e), and cost of debt (K_d) remains constant with changes in leverage.

- ii) Cost of debt (K_d) is less than cost of equity (K_e).
- iii) Overall cost of capital (K_o) decreases as leverage increases.

Figure:2 effect of leverage on capital structure

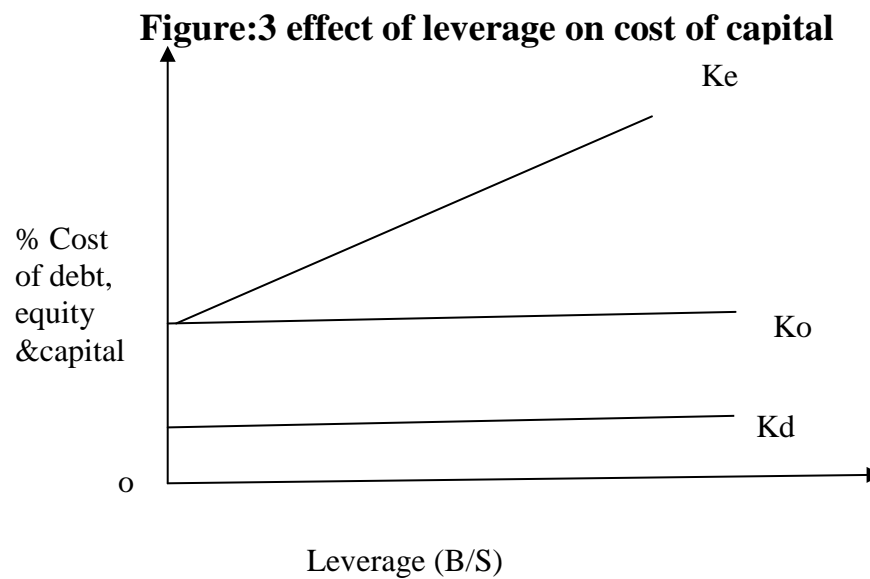


2.4.3 Net operating income approach

In this approach, the net operating income is capitalized at an overall capitalization rate to obtain the total market value of the firm. As EBIT and overall capitalization rate remain constant, capital structure does not affect the market value of the firm. Market value of the equity is computed after deducting market value of debt from total market value of the firm. Note that in the net operating income approach the overall capitalization rate and the cost of debt remain constant for all degrees of leverage. The required return on equity increases linearly with financial leverage. Assumptions of this approach are:

- i) The market uses an overall capitalization rate, K_o , to capitalize the net operating income, K_o depends on the business risk. If the business risk is assumed to remain unchanged K_o is a constant.
- ii) Debt capitalization rate, K_d , remains constant.

- iii) The use of less costly debt funds increase, the risk of shareholders. This cause the equity-capitalization rate to increase. Thus, the advantage of debt is offset exactly by the increase in the equity capitalization rate, K_e .
- iv) Market value of equity is the residual value.



2.4.4 Modigliani- Miller approach (MM approach)

The “classic” proposition made by Modigliani and Miller (1958) posits that the firm’s value is independent of its capital structure. They claim that the firm’s value depends upon the profitability of its assets and not on the way in which such assets are financed. The market value of a firm is invariant to whether the firm finances itself through debt and/or equity. The basic argument underlying their statement is that arbitrage transactions preclude the market value of a firm from being altered by a change in a firm’s financial policy for a given profit stream. They demonstrate that, if the firm’s value depends on the way of financing, the perfection of capital markets make such arbitrage transactions feasible. Modigliani and Miller based their argument on the assumption that a rational investor is able to

borrow at the same interest rate as firms. In this case investors will have the same financial opportunities as firms, and hence, they can untie firms' capital structure decisions on the financial markets.

The Modigliani - Miller proposition is based on the assumptions of a perfect capital market in which there are no transaction costs, no information asymmetry (investors have the same information as management about the firm's future investment opportunities), no bankruptcy costs (debt is risk-free regardless of the amount used), so no firm goes bankrupt, no taxes (no taxes exist either on individuals or companies) and investors can borrow at the same rate as corporations. Finally, management acts on the exclusive behalf of shareholders. These assumptions can be criticized on the grounds that imperfections in capital markets do exist, suggesting that different sources of financing may be relevant to the investment decision of the firm. One of these assumptions is broken down by Modigliani and Miller themselves. In their seminal paper, Modigliani-Miller (1963) who again ignore the bankruptcy and agency costs of debt, argue that debt provides a tax benefit shield and hence, the value of the firm is maximized by using as much debt as possible.

1. Perfect capital market: The implication of perfect capital market is that securities are infinitely divisible, investors 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. dividend payout ratio is 100 percent.

4. There are no taxes. This assumption is removed later.
5. The assumptions of perfect information and rationality, all investors has the same expectation 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 propositions I and II. (Modigliani and Miller, 1969:261-279)

Proposition I

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

Value of the firm = Market value of debt (B) + Market value of equity (S)

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

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

For an unlevered firm,

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

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:

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

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

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 dividend by the total market value of the firm and since MM conclude that the total market value of the firm is unaffected by the financing mix, it follows that the cost of capital is independent of the capital structure and is equal to the capitalization rate of a pure equity stream of its class. (Pandey, I.M., 1981:35)

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

Fig. 4 The cost of capital under the MM hypothesis



Thus two firms identical in all respects expect 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 I.M., 1981:37)

Proposition II

MM proposition II, which defines the cost of equity, follows from their propositions 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. The equation for the cost of equity can be derived from the definition of the leverage cost of capital.

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

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

$$K_s = K(I+D/S) - K_d(D)/S$$

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

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

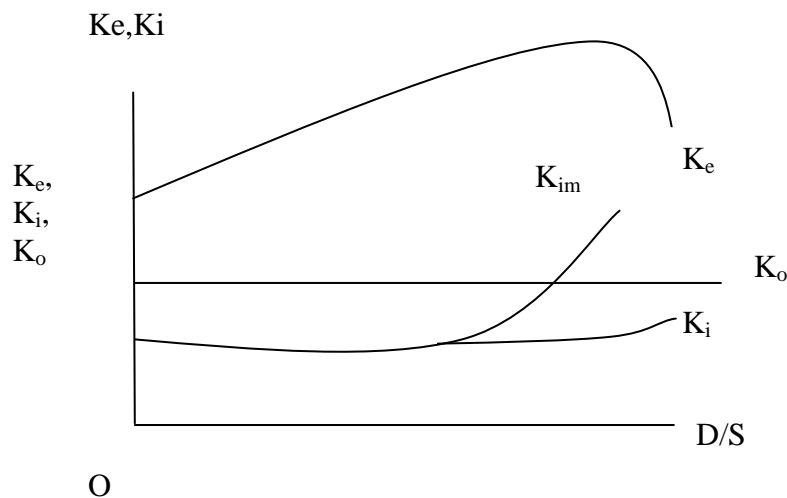


Figure: 5: Behaviour of K_o , K_i and k_e under MM Hypothesis

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

2.5 Leverage:

The term Leverage may be defined as the use of that source of funds in the business for which the firm has to pay fixed charges, irrespective to the earnings of firm. There are three types of leverage i.e. operating leverage, financial leverage and combined leverage.

i) Operating leverage:

“Operating leverage” is a measure of operating risk and arises from fixed operating costs. A simple indication of operating leverage is the effect that a change in sales has on earnings. The formula is:

“Operating leverage” at a given level of sales (X)

= percentage change in EBIT/percentage change in sales = $(P-V)X/(P-V)(X-FC)$

ii) Financial leverage:

“Financial leverage” is a measure of financial risk and arises from fixed financial costs. One way to measure financial leverage is to determine how ‘earnings per share [EPS]’ are affected by a change in EBIT (or operating income). The formula is:

“Financial leverage “at a given level of sales/ activities (X)
= percentage change in EPS / percentage change in EBIT
= $[(P - V)X - FC] / [(P - V)X - FC - IC]$

Where EPS is earnings per share, and IC is “fixed finance charges”, i.e., “interest expense” or “preferred stock dividends”. [Note: preferred stock dividend must be adjusted for taxes i.e., preferred stock dividend/(1-t).]

iii) Combined or total leverage:

“Total leverage” is a measure of total risk. The way to measure total leverage is to determine how EPS is affected by a change in sales. The formula is:

“Total leverage” at a given level of sales (X)
= percentage change in EPS / percentage change in sales
= operating leverage x financial leverage
= $[(P-V)X / (P -V)X - FC] \times [(P - V)X - FC/(P-V)X - FC - IC]$
= $[(P - V)X / [(P - V)X - FC - IC]$

2.6 Return

Investors and managers are particularly interested in the profitability of the firms that they own. As we will see, there are many ways to measure profits. Profitability ratios provide an easy way to compare profits to earlier periods or to other firms. Furthermore, by simultaneously examining the first three profitability ratios, an analyst can discover categories of expenses that may be out of line. Profitability ratios are the easiest of all of the ratios to analyze. Without exception, high ratios are preferred.

However, the definition of high depends on the industry in which the firm operates. Generally, firms in mature industries with lots of competition will have lower profitability measures than firms in younger industries with less competition.

a) The Gross profit margin

The gross profit margin measures the gross profit relative to sales. It indicates the amount of funds available to pay the firm's expenses other than its cost of sales.

The gross profit margin is calculated by:

$$\text{Gross profit margin} = \frac{\text{Gross profit}}{\text{Sales/Activities}}$$

b) The operating profit margin

Moving down the income statement, we can calculate the profits that remain after the firm has paid all of its usual (non-financial) expenses.

The operating profit margin is calculated as:

$$\text{Operating profit margin} = \frac{\text{Net operating income}}{\text{Sales}}$$

c)The net profit margin

The net profit margin relates net income to sales. Since net income is profit after all expenses, the net profit margin tells us the percentage of sales that remains for the shareholders of the firm:

$$\text{Net profit margin} = \frac{\text{Net income}}{\text{Sales}}$$

d)Return on total assets

The total assets of a firm are the investment that the shareholders have made. Much like you might be interested in the returns generated by your investments, analysts are often interested in the return that a firm is able to get from its investments. The return on total assets is:

$$\text{Return on total assets} = \frac{\text{Net income}}{\text{Total assets}}$$

e)Return on equity

While total assets represent the total investment in the firm, the owners' investment (common stock and retained earnings) usually represent only a portion of this amount (some is debt). For this reason it is useful to calculate the rate of return on the shareholder's invested funds. We can calculate the return on (total) equity as:

$$\text{Return on equity} = \frac{\text{Net income}}{\text{Total equity}}$$

Note that if a firm uses no debt, then its return on equity will be the same as its return on assets. The higher a firm's debt ratio, the higher its return on equity will be relative to its return on assets.

f) Return on common equity

For firms that have issued preferred stock in addition to common stock, it is often helpful to determine the rate of return on just the common stockholders' investment:

$$\text{Return on Common Equity} = \frac{\text{Net income available to common equity}}{\text{Common Equity}}$$

Net income available to common equity is net income less preferred dividends.

g)The Du Pont analysis

The return on equity (ROE) is important to both managers and investors. The effectiveness of managers is often measured by changes in ROE over time. Therefore, it is important that they understand what they can do to improve the firm's ROE, and that requires knowledge of what causes changes in ROE over time.

The Du Pont system is a way to break down the ROE into its components. Let's first take another look at the return on assets (ROA):

$$\text{ROE} = \frac{\text{Net income}}{\text{Equity}} = \frac{\text{Net income}}{\text{Total asset}} \times \frac{\text{Total asset}}{\text{Equity}}$$

Note that the second term is sometimes called the ‘equity multiplier’ and we know it is equal to:

$$\frac{\text{total asset}}{\text{total equity}} = \frac{1}{1 - \text{total debt ratio}} = \frac{1}{1 - (\text{total debt}/\text{total assets})}$$

Substituting the first above into the second equation and rearranging we have:

$$\text{ROE} = \frac{\text{Net income}}{\text{Total asset}} + \left(1 - \frac{\text{Total debt}}{\text{Total asset}}\right)$$

We can now see that the ROE is a function of the firm’s ROA and the total debt ratio. If two firms have the same ROA, the one using more debt will have a higher ROE.

The coverage ratios are similar to liquidity ratios in that they describe the quantity of funds available to “cover” certain expenses. We will examine two very similar ratios that describe the firm’s ability to meet its interest payment obligations. In both cases, higher ratios are desirable to a degree. However, if they are too high, it may indicate that the firm is under-utilizing its debt capacity, and therefore not maximizing shareholder wealth.

h)The times interest earned ratio

The times interest earned ratio measures the ability of the firm to pay its interest obligations by comparing earnings before interest and taxes (EBIT) to interest expense:

$$\text{Times interest earned} = \frac{\text{EBIT}}{\text{Interest expense}}$$

i) The cash coverage ratio

EBIT does not really reflect the cash that is available to pay the firm's interest expense. That is because a non-cash expense (depreciation) has been subtracted in the calculation of EBIT. To correct for this deficiency, some analysts like to use the cash coverage ratio instead of times interest earned. The cash coverage ratio is calculated as:

$$\text{Cash coverage ratio} = \frac{\text{EBIT} + \text{Non-cash expenses}}{\text{Interest expense}}$$

The term "liquidity" refers to the speed with which an asset can be converted into cash without large discounts to its value. Some assets, such as accounts receivable, can easily be converted to cash with only small discounts.

All other things being equal, a firm with more liquid assets will be more able to meet its maturing obligations (i.e., its bills) than a firm with fewer liquid assets. As you might imagine, creditors are particularly concerned with a firm's ability to pay its bills. To assess this ability, it is common to use the current ratio and/or the quick.

Obviously, the higher the current ratio, the higher the likelihood that a firm will be able to pay its bills. So, from the creditor's point of view, higher is better.

However, from a shareholder's point of view this is not always the case. Current assets usually have a lower expected return than do fixed assets, so the shareholders would like to see that only the minimum amount of the company's capital is invested in current assets. Of course, too

little investment in current assets could be disastrous for both creditors and owners of the firm.

The ability to measure performance is essential in developing incentives and controlling operations toward the achievement of company goals. Perhaps the most widely used single measure of profitability of an organization is the rate of “return on investment [ROI]”. Related is the return to stockholders, known as the “return on equity [ROE]”.

2.7. Concept of risk

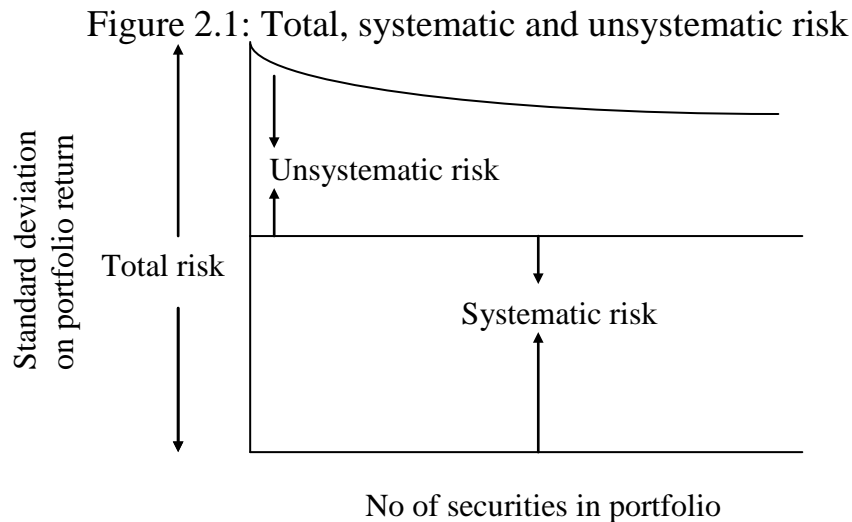
Risk refers to the chance that some unfavorable event will occur. Risk can be thought of as the possibility that the actual return from holding a security will deviate from the expected return. Risk and return in investment go together and without risk no more return can be expected.

“Risk is defined in Webster’s dictionary as “A hazard; a peril; exposure to loss or injury”. Thus, for most, risk refers to the chance that some unfavorable event will occur. If you engage in skydiving, you are taking a chance with your life-skydiving is risky. If you bet on the horses, you are risking your money. If you invest in speculative stocks (or, really, any stock), you are taking a risk in the hope of making an appreciable return. The greater the chance of low or negative returns the riskier the investment” (Weston and Brigham, nd: 113).

Types or source of risk

Total risk or total variation of the rate of return for an individual security or portfolio is measured by the standard deviation or variance of the rate of return. According to CAPM total risk of an asset can be divided into

two parts. They are systematic risk and unsystematic risk. Systematic and unsystematic risk is also called undiversifiable and diversifiable respectively.



$$\text{Total risk} = \text{systematic risk} + \text{unsystematic risk}$$

Systematic risk affects the overall market. Systematic risk arises due to the change in the economic state, or due to the change made by government in fiscal or monetary policies. For instance, interest rate policy by government, increase in corporate tax rate, increase in inflation rate etc.

The second component, unsystematic risk is unique to a particular company or industry. Unsystematic risk arises due to labour strike, entry of formidable competitor in the market, loss on a big contract bid, company not being able to manage or obtain adequate raw material on time etc. The management can minimize this types of risk. The unsystematic risk varies from firm to firm; they are, therefore, unique to the given firm.

2.8 Review from journals

In context of our country Nepal, there are no financial research based journals. We have very limited business magazines, which hardly publish

the topics related to risk and return. So some foreign journals as well as Nepali journals are taken into account to review over here. However, it helps build the sound conceptual framework of this topic.

Shiva Raj Shrestha, deputy chief officer of Nepal rastra bank, banking operation department has given a short glimpse on the “portfolio management in commercial bank, theory and practice”.

Mr. Shrestha has highlighted following issues in the articles. The portfolio management becomes very important both for individuals as well as institutional investors. Investors would like to select a best mix of investment assets subject to following aspect.

Higher return which is comparable with alternative opportunities available according to the risk class of investor.

1. Good liquidity with adequate safety of investment.
2. Certain capital gains.
3. Maximum tax concession.
4. Flexible investment.
5. Economic, efficient and effective investment mix.

In view of above aspect following strategies are adopted:

1. Do not hold any single security i.e. try to make a portfolio of different securities.
2. Do not put all the eggs in the one basket i.e. to give diversifies investment.
3. Choose such a portfolio of securities, which ensures maximum return with minimum risk of return but with added objective of wealth maximization.

However, Mr. Shrestha has also presented following approach to be adopted for designing a good portfolio and its management.

1. Returns depending upon individual characteristics like age, health, need, disposition, liquidity, to find out the investable assets (generally securities) having scope for better tax liability etc.
2. To find out the risk of the securities depending upon the altitude of investor toward risk.
3. To develop alternative investment strategies for selecting a better portfolio, this will ensure a trade-off between risk and return so as to attach the primary objective of wealth maximization at lower risk.
4. To identify securities for investment to reduce volatility of return and risk.

Mr. Shrestha has presented two types of investment analysis i.e. fundamental analysis and technical analysis to consider any securities such as equity, debentures, or bond and other money and capital market instruments. He has suggested that the banks having international network can also offer access to global financial markets. He has pointed out the requirements of skilled manpower, research and analysis team and proper management information system (MIS) in any commercial bank to get success in portfolio management and customers' confidence (Shrestha, 2055).

The article published in Journal of Finance on the title of "expected return, realized return and asset pricing tests" is also relevant in our research. In this paper the writer mentioned that " Almost all of the testing I am aware of involves using realized returns as proxy for expected returns relies on a belief the information surprises trend to cancel out over the period of a study and realized returns are therefore an unbiased estimate of expected returns.

However, I believe that here is ample evidence that is belief is misplaced. There are periods longer than 10 years during which stock market realized returns are on average less than the risk free rate (1973 to 1984). There are periods longer than 50 years in which risky long-term bonds on average under perform the risk free rate (1972 to 1981). Having a risky asset with an expected return above the risk-less rate is an extremely weak condition for realized returns to be an appropriate proxy for expected returns and 10 and 50 is an awfully long time for such a weak condition not to be satisfied. In the recent past United States has had a stock market return of higher than 30 percent per year while Asian markets have had negative returns” (Elton, 1999).

CHAPTER – III

RESEARCH METHODOLOGY

Research methodology may be defined as a systematic process applied by the researcher in studying research problem with certain objective in view. A research methodology helps us to find out accuracy, validity and suitability of our study. The justification in the present study cannot be obtained without the help of proper methodology.

This chapter deals with the research methodology used in this section, which includes research design, population and sample, source of data and various tools used in this study.

3.1 Research design

Research design is a plan, structure and strategy to investigate so as to obtain answer to research question and control variance. A research design is the specification of methods and procedures for acquiring the information needed. This research is based on the historical data. The study covers the data from the end 15 July 2006 to 15 July 2010

3.2 Population and sample

In Nepal, there are more than fifty eight development banks are operating at this period so the total population is fifty eight. Out of 58 development banks, Siddhartha development banks limited is selected for the present study.

3.3 Sources of Data

- Annual reports provided by banks.

- Articles published in newspapers and magazines.
- Related books and booklets.
- Related websites.

3.4 Method of analysis

Data collected from various sources are analyzed by using financial and statistical tools. The required financial and statistical tools are presented and described below.

3.4.1 Financial tools:

Financial analysis is the measure of 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 tools for the data analysis.

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

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

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 ratio's have been covered in this study, which are related to investment operation of the bank.

a) Earning per share (EPS)

Net income of the company is a earning of that company. Earning per share is calculated by dividing net income by number of common stock outstanding.

Mathematically,

Earning per share (EPS) = Net Income / No. of common stock out standing

b) Dividend per share (DPS)

Dividend is the portion of earning which company pays to its shareholders. As we have to consider the total dividend paid to shareholders, if the company has declared cash dividend it is much easier to take it into consideration, but if company pays stock dividend it is difficult to calculate the actual dividend amount. To get the actual amount there is no models or formula. So following model is developed considering practical as well as theoretical aspects. The model

1) In case of stock dividend.

Total dividend amount = cash dividend + (next year closing MPS x stock dividend %)

For calculating, $DPS = \frac{\text{Dividend paid to shareholders}}{\text{No of shares outstanding}}$

c) 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 company. So, it is the percentage of long term debt among the total debt employed by the company.

$$\text{Long-term debt to total debt ratio} = \frac{\text{LTD}}{\text{Total Debt}}$$

d) Debt to total assets

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

$$\text{Debt to total asset ratio} = \frac{\text{Total debt}}{\text{Total assets}}$$

e) 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 company. 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 owner's capital can be shown by debt-equity ratio. It is calculated as:

$$\text{Debt to equity ratio} = \frac{\text{Longtermdebt}}{\text{Shareholder' sequity}}$$

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 owner of the company.

f) 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.

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

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.

3.4.1.2 Leverage:

Degree financial leverage is a measure of financial risk and arises from fixed financial costs. One way to measure financial leverage is to determine how 'earnings per share [EPS]' are affected by a change in EBIT (or operating income). The formula is:

$$\begin{aligned} \text{Degree financial leverage at a given level of sales/ activities (X)} \\ = \text{percentage change in EPS} / \text{percentage change in EBIT} \\ = [(P - V)X - FC] / [(P - V)X - FC - IC] = \text{EBIT/EBT} \end{aligned}$$

3.4.1.3 Capital structure analysis:

Various approaches have been developed under the relevancy of the capital structure, which helps to evaluate value of the firm, such as net income approach (NI), net operating income approach (NOI), traditional approach and Modigliani-Miller's approach. These all approaches are base on the market value. Practical uses of other approaches a bit complex thus NI and NOI approaches are used in this study.

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

$$\text{Cost of overall capitalization rate (K}_o\text{)} = \frac{\text{Net operating income (EBIT)}}{\text{Total market value of the firm (V)}}$$

$$\text{Cost of equity (K}_e\text{)} = \frac{\text{Earning available to common stock holders(NI)}}{\text{Market value of stock(S)}}$$

3.4.1.4 Statistical tools:

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

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

1. Arithmetic mean:
2. Standard deviation
3. Coefficient of variation (C.V)
4. Karl Pearson's coefficient of correlation
5. Probable error

1. Arithmetic mean:

Arithmetic mean or simply a “mean” of a set of observation is the sum of all the observations divided by the number of observations. Arithmetic mean is also known as the arithmetic average.

Arithmetic mean denoted by \bar{X} is defined by

$$\bar{X} = \frac{\sum X}{n}$$

Where n= number of observation

2. Standard deviation:

It is the statistical measures of variability of data. It is the most popular and most useful measure of dispersion. Mainly it measures the deviation from the expected mean data.

3. Coefficient of variation (C.V)

It is used to measure the risk per unit of return. The C.V. should be used to compare investments where both the standard deviation and expected returns differ.

$$\text{Coefficient variation (C.V.)} = \frac{\text{Standard deviation } (\sigma)}{\text{Mean } (\mu)}$$

4.) Correlation Coefficient(r):

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

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

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

Where N= Number of observations

X & Y are variables.

The decision criteria:

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

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

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

5) Probable error (P.E.)

P.E. interprets the value of correlation co-efficient. The relationship between two or more variables is computed by multiple and partial correlation co-efficient. The degree of reliability of computed correlation can be judged with the help of its probable error where

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

If $r < \text{P.E.}$, then the correlation coefficient is insignificant and if $r > \text{P.E.}$, then the correlation coefficient is significant.

CHAPTER – IV

PRESENTATION AND ANALYSIS OF DATA

Capital structure involves the choice of mix of debt and equity, which optimize the value of the firm under the given contextual or institutional framework. The firms may follow different approaches while managing capital structure. The capital structure theories provide basic guidelines in this respect however, a particular theory will not sufficient to deal with these issues. On one hand, macroeconomic scenario plays significant role, while on the other hand, the internal firm specific factors are in the first instance. This chapter is fully devoted to analyzing various issues of the study in the context of SDBL. One of the issues raised in this chapter relates to assessing the patterns and policies of capital structure in SDBL.

The purpose of this chapter is to analyze study and evaluate the major capital structure position, which are mainly related to the position of capital structure position or return pattern of Siddhartha development bank. It is notable that all types of financial ratios are not studied under this chapter. Only those ratios are calculated and analyzed which are very important to evaluate of this Bank.

Analysis comprises resolving the statement by breaking them into simple statement a process or rearrangement and the calculation of the ratios. Similarly, interpretation is the mental process of understanding the terms of such statement and forming opinions or references about the financial health, profitability, liquidity, efficiency and other such aspects of understanding.

In this chapter the relevant data of the sample development bank has been analyzed and interpreted according to the research methodology as mentioned in the previous chapter. Tables and diagrams are used to make the result more simple and clear.

4.1 Analysis of Siddhartha development bank Limited, Tinkune Kathmandu.

Among fifty eight development banks, this bank is taken as sample in this research. Data collection is being done of four years from 15 July 2006 to 15 July 2010. Brief introduction of SDBL bank is given as follows:

4.1.1 Siddhartha development bank Limited (SDBL)

Siddhartha development bank Limited (SDBL), formally commenced its operation on 2057/3/11 B.S., is delighted to announce its up gradation to national level development bank after successful completion of eleventh years of operation as the bank “ dedicated for development”. Development bank through historic issuance of 1:5 right shares to our existing shareholders. SDBL, the first development bank of western region and the fourth private development bank of Nepal now stands at top fourth development bank of Nepal in terms of paid up capital. Similarly, it became the first regional development bank to be upgraded to national level development bank.

Presently, we have full fledged eighteen branches in operation nation wide in this fiscal year comprising three branches including head office within Kathmandu valley and five branches outside valley at Birgunj, Biratnagar, Pokhara, Nepalgunj and Dhangadi; the major commercial hubs of Nepal. SDBL was the first among development banks outside the valley to start ATM/Debit card services, any branch banking services (ABBS), SMS/mobile banking services to the customers. It provides E-statement and E-banking services to the customers very shortly. SDBL remit, exclusive

remittance product, is also available from more than 150 locations of the country and it is in the process of expanding worldwide. SDBL, with eighteen more branches, will be able to reach and serve its customers nationwide through online connectivity via VSAT, Radio modems and fiber optics. It have ATM network and added in all the branches with locker facility on the need basis. Now 172 Personnel are employed in this bank.

The analysis in this chapter is divided into following sections, which are directly and indirectly related to the capital structure.

- A. Ratio analysis
- B. Analysis of capital structure
- C. Leverage analysis
- D. Correlation relation

4.1.1.1 Ratio analysis

The relationship between long term debt and total debt has a decisive impact on the financial structure of the company. This relationship indicates what percentage of total debt is covered by long term debt of the firm. Normally firms use short term and long term debt. Current liabilities and provisions are also needed during the operation of the firm. Simply dividing long term debt by the total debt can derive the relationship between the long term debt and total debt of the firm. The total debt includes all types of borrowed fund, current liabilities and provisions. If the firm uses large amount of short term loans and occur current liabilities and provision in the larger amount, the percentage of long term debt on total debt on total debt will be low and vice versa. The higher ratio of long term debt to total debt indicates the higher claims of long term debt holders upon the total debt and the lower ratio indicates the higher portion of short term loans and current liabilities in the total debt of the firm. The amount of short term loans and current liabilities used depends upon the liquidity of that firm. This

relationship of long term debt and total debt is presented in the following table along with the percentage change in that ratio to show the movement of trend individually. In addition the average (standard) ratios are also calculated to compare with each other.

$$\text{Long-term debt to total debt ratio} = \frac{\text{LTD}}{\text{Total Debt}} \times 100$$

Table 1
Long term debt to total debt position

Fiscal year	Long -term debt Total debt (%)
	SDBL
2064/65	0.00
2065/66	0.25
2066/67	0.21
Average	0.15

The above table shows that the long – term debt to capital employed ratios of SDBL in the fiscal year, 2065/66, and 2066/67 are 0.25%,and 0.21% respectively and in the year 2064/65 the company has not used long term debt. The average ratio is 0.15%.

4.1.1.2 Long term debt to capital employed ratio

The optimal capital structure has important relationship with the long term debt to capital employed ratio. This relationship suggests the portion of long term debt and capital employed used in the capital structure of the firm. This ratio high lights the need of long term debt in the capital employed by the firm. Long term debt includes the debt, which matures in more than one

accounting period whereas capital employed includes long term debt and shareholders equity of the firm. The relationship of long term debt and capital employed can be analyzed by establishing the ratio between them. This ratio is called the long term debt to capital debt ratio. Larger the ratio, larger the proportion of long term debt in the capital employed and vice versa. This ratio can be calculated by dividing the long term debt with capital employed by the firm. This ratio is also known as debt to permanent capital ratio, whereas permanent capital means total assets minus current liabilities. The long term debt to permanent capital ratio is presented in the following table.

$$\text{Long-term debt to capital employed ratio} = \frac{\text{LTD}}{\text{Capital employed}}$$

Table 2
Comparative long term debt to capital employed ratio

Fiscal years	Long- term debt to capital employed ratio(Times)
	SDBL
2064/65	0.00
2065/66	0.01
2066/67	0.01
Average	0.0067

The above table shows that the long – term debt to capital employed ratios of SDBL in the fiscal year, 2065/66, and 2066/67 are 0.01%,and 0.01% respectively and in the year 2064/65 the company has not used long term debt. The average ratio is 0.0067%.

4.1.1.3 Debt to total assets ratio:

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

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

$$\text{Total debt to total Asset ratio} = \frac{\text{DEBT}}{\text{Total Assets}}$$

Table 3
Comparative debt to asset ratio

Fiscal year	Debt to asset ratio (%)
	SDBL
2064/65	0.05
2065/66	0.7
2066/67	0.8
Average	0.5

The above table shows that the Total debt to Assets ratios of SDBL in the fiscal year 2064/65, 2065/66, and 2066/67 are 0.05%, 0.7%, and 0.8% respectively. The average ratio is 0.5%.

4.1.1.4 Debt equity ratio:

Debt equity ratio is used to show the relationship between borrowed funds and owner's capital. It reflects the relative claims of creditors and

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

$$\text{Debt to equity ratio} = \frac{\text{Longtermdebt}}{\text{Shareholder's equity}}$$

Table 4
Comparative Debt to Equity Ratio

Fiscal year	Debt to equity ratio (%)
	SDBL
2064/65	0.00
2065/66	0.01
2066/67	0.003
Average	0.004

The above table shows that the total debt to equity ratios of SDBL in the fiscal year 2064/65, 2065/66, and 2066/67 are 0.01%, and 0.003%

respectively. Then afterward the D/E ratio is zero in the year 2064/2065. The average ratio is 0.004%.

4.1.1.5 Interest coverage ratio

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

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

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

Table No.5

Comparative interest coverage ratio

Fiscal year	Interest coverage ratio (%)
	SDBL
2064/65	1.28
2065/66	1.32
2066/67	1.26
Average	1.28

In the above table, the average ratio of SDBL is 1.28, which implies the number of times the interest covered by its EBIT. The interest coverage ratio of SDBL shows a fluctuating trend. The interest coverage of SDBL in FY 2064/65 is 1.28 times, which increases to 1.32 times in 2066/67. Then, the decreasing in the year 2066/67 to the ratio of 1.26 times.

4.1.1.6. Return on total assets

Return on total assets ratio measures the profitability of bank that explains a firm to earn satisfactory return on all financial resources invested in the bank assets. 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 if judging operational efficiency, rate of return on total assets is more useful measure. The return on total assets ratio is calculated using the formula below.

$$\text{Return on total assets} = \frac{\text{Net profit after tax}}{\text{Total assets}}$$

Table No. 6

Position of comparative return on total assets

Fiscal year	Return on total assets
	SDBL
2064/65	0.19
2065/66	0.13
2066/67	0.16
Average	0.16

The above table shows the comparative position of return on total assets of the SDBL. From the table, the ROA of SDBL in the year 2064/65, 2065/66, and 2066/67 are 0.19, 0.13, and 0.16 respectively. The average ratio is 0.16.

4.1.1.7 Return on shareholder's equity

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

If the company's earning is good, shareholders earning is greater than outside investors because they are ultimate owners and they are bearing high risk as well. But outside investors get return before the owners that is fixed. Shareholders get the return after paying the fixed interest charge to the creditors and tax to the government. Earning after tax (EAT) is the profit of the shareholders. Therefore this ratio is calculated on the basis of EAT. In

this study, the sampled companies have not employed the preference share thus; it includes only return on shareholders equity.

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

$$\text{Return on shareholder's equity} = \frac{\text{Netprofitaftertax}}{\text{Shareholder's equity}}$$

Table No.7

Position of comparative ROSHE

Fiscal year	Return on shareholder's equity %
	SDBL
2064/65	13
2065/66	5.31
2066/67	7.24
Average	8.51

Above table exhibits, return on shareholder's equity of sampled companies. In case of SDBL, in the fiscal year 2064/65, the ratio is 13% that implies that one rupee investment by shareholders equity earned 13 paisa one-year. In the fiscal year 2065/66 it is decreased by to 5.31%. Similarly in the fiscal year 2066/67 the ratio is 7.24%. The average ratio is 8.51%.

4.1.1.8 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 theoretical belongs to the ordinary shareholders. The EPS is calculated as below:

$$\text{Earning per share} = \frac{\text{Net income}}{\text{No. of shares outstanding}}$$

Table No.8

Position of comparative EPS (in Rs.)

Fiscal year	Earning per share
	SDBL
2064/65	15.79
2065/66	5.46
2066/67	7.54
Average	9.59

The earnings per share of SDBL are 15.79, 5.46, and 7.54. The average EPS is 9.59. The highest EPS is 15.79 in the year 2064/65.

4.1.1.9 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 dividend by the number of ordinary shares outstanding, i.e,

$$\text{Dividend per share} = \frac{\text{Total dividend}}{\text{No. of ordinary shares}}$$

Table No.9

Position of comparative DPS (in Rs)

Fiscal year	Dividend per share
	SDBL
2064/65	10
2065/66	5
2066/67	6
Average	7

The dividend per share of SDBL is 10, 5 and 6 respectively. The average DPS is 7. The highest DPS paid is 10 in the year 2064/65.

4.2 Capital structure

4.2.1 Net income (NI) approach

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

Table No. 10

Comparative position of overall capitalization rate

Fiscal year	SDBL	
	Cost of capital (k_o)	Value of firm (in million Rs)
2064/65	22.06%	1150.51
2065/66	20.7%	1449.79
2066/67	18.51%	1519.67
Average	20.42%	1373.32

Above computed overall capitalization rate of SDBL shows that the costs are 22.06%, 20.7%, and 18.51% in the fiscal year 2064/65, 2065/66, and 2066/2067 when the values of the firm are Rs. 1150.51, 1449.79 and 1519.67 million respectively. The average cost is 20.42% at an average value of Rs. 1373.32 million.

4.2.2 Net operating income (NOI) approach

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

Table No. 11
Comparative position of effect of debt on equity
capitalization rate

Fiscal year	SDBL	
	Cost of equity (ke)	Long-term debt (in million Rs)
2064/65	4.6%	0.00
2065/66	3.2%	7.93
2066/67	2.5%	3.49
Average	3.44%	3.81

The equity capitalization rates of SDBL in the fiscal years 2064/65, 2065/66, and 2066/67 are 4.6%, 3.2%, and 2.5% respectively and their respective long term debts are Rs. 0.00, 7.39 and 3.49 million respectively. The average cost is 3.44% at an average long term debt of Rs. 3.81 million.

4.3 Leverage analysis

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

Generally, leverage refers to the use of special force of power to have more than normal results from a particular action. Similarly in financial term it is used to describe about utilization of funds for which the firm has to pay fixed cost and to have more return than normal having more risk as well. Leverage may be used to boost owner's returns, but it is used at the risk of increasing losses, if the firm's economic fortune declines. Thus gain and losses are magnified by leverage, and the higher the leverage employed by a firm, the greater will be the volatility of its returns. There are three types of leverages: Operating leverage, financial leverage and combined leverage. Operating leverage is the function of fixed cost, contribution margin and sales volume. Financial leverage is the relationship between EBIT and EBT and combined leverage is the combined effect of operating leverage and financial leverage. The operating leverage indicates the impact of changes sales an operating income and financial leverage exist when the capital structure of the firm comprises debt capital. Financial leverage is the relevant issue of this study, which is explained in this section.

4.3.1. Analysis of financial leverage

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

Two methods: either dividing percentage change into EPS by percentage change into EBIT of dividing percentage change into EBT by EBIT can calculate degree of financial leverage second method is chosen. High the financial leverage, high will be the financial risk and also high will

be the shareholder's return. The degree of financial leverage of sampled companies is presented in the following table.

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

Or

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

Table No.12

Comparative degree of financial leverage

Fiscal year	Degree of financial leverage
	SDBL
2064/65	1.49
2065/66	1.45
2066/67	1.61
Average	1.51

Above calculated DFL of SDBL indicates decreasing than increasing trend. In the fiscal year 2064/65, 2065/66, and 2066/67 is 1.49, 1.45, and 1.61 respectively. The average DFL of SDBL is 1.51 times.

4.4 Correlation analysis

Correlation analysis enables us to have an idea about the degree and direction of the relationship between the two or more variables. The correlation is a statistical tool which studies the relationship between two or more variables and correlation analysis involves various methods and techniques used for studying and measuring the extent of the relationship between the two or more variables. It is denoted by 'r'. However, it fails to reflect upon the cause and effect relationship between the variables. Although there are three types of correlation i.e. simple, partial and multiple but here we focus on simple correlation based on 'Pearson's coefficient of correlation'. In the following section correlation between different are calculated and presented of the sampled companies.

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

4.4.1 Total debt and shareholders equity

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

Table No.13

Correlation of coefficient between TD and SHE with probable error

SDBL	
Correlation coefficient (r)	Probable error 6(P.E.)
0.65	1.35

Karl Pearson's correlation coefficient between total debt and shareholder's equity of SDBL is 0.65. There is positive correlation between TD and SHE. The probable error (PE) of SDBL is 1.35. PE is greater than correlation coefficient (r). Thus there is no significant correlation.

4.4.2. Long-term debt and earning per share

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

Table No. 14

Correlation coefficient between long-term debt (LTD) and earning per share (EPS) and their respective probable error.

SDBL	
Correlation coefficient (r)	Probable error (P.E.)
0.39	1.98

In this basis of above table, correlation coefficient between Long-Term debt (LTD) and earning per share (EPS) of SDBL is 0.39. There is positive correlation between LTD and EPS. The probable error (PE) of SDBL is 1.98. PE is greater than correlation coefficient (r). Thus there is no significant correlation.

4.4.3. EBIT and interest

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

Table No. 15

Correlation coefficient between EBIT and interest, and their respective probable error.

SDBL	
Correlation coefficient (r)	Probable error 6(P.E.)
0.43	1.90

In the above table, correlation coefficient of SDBL is found to be 0.43, i.e. there is positive correlation between interest and EBIT. PE of respected correlation is 1.90, which is greater than correlation coefficient. Thus there is no significant correlation.

4.4.4. EBIT and DPS

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

Table No. 16

Correlation coefficient between EBIT and DPS and their respective probable error.

SDBL	
Correlation coefficient (r)	Probable Error 6(P.E.)
0.42	1.92

In the above table, correlation coefficient of SDBL is found to be 0.42, i.e. there is positive relationship between EBIT and DPS. PE of respected correlation is 1.92, which is greater than correlation coefficient. Thus there is no significant correlation.

4.5 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. SDBL has 0.15% of average long-term to total debt ratio. In the fiscal year 2064/65, SDBL has stopped using the long-term debt of financing.

The analysis shows that the long-term debt to capital employed ratio is 0.006. This indicates that SDBL is using less Long-Term debt financing as its capital.

The average debt to total asset ratio of SDBL is 0.5%. In the case, the total debt is contributed by current liabilities to a large extent.

The debt-equity ratio shows the claim of creditors on the asset of the company. The average debt equity ratio of SDBL is 0.004, which shows that the creditors have 0.4% claim on the assets of SDBL. It also indicates that the company has used less amount of debt as financing and has lesser amount to be paid as interest on debt.

The Average Interest coverage ratio of SDBL is 1.28, which shows that the firm is able to pay the interest amount.

The Average ROA of SDBL is 0.16. The return on asset of the bank is fluctuating trend.

The return on shareholder's equity of SDBL is 8.51 which indicates that the shareholder's earned 8.51 paisa investing rupee one.

The earning per share explains net income for each unit of share. It shows the market position of the market. The average earning per share of SDBL is Rs. 9.59.

Dividend per share is the earning distributed to ordinary shareholders. The average dividend of SDBL is Rs. 7.

Under the NI approach, the interest rate and the cost of equity are dependent of the capital structure. With the increased use of leverage, overall cost of capital declines and the total value of firm rise.

Net operating income (NOI) approach is an independent hypothesis of capital structure. Any changes in leverage will not lead to any change in the total value of the firm and market price of share. From the position of average cost of equity, it is found that SDBL has an average cost of equity of 3.44% with an average long-term debt of Rs. 3.81m.

The financial leverage analysis helps to evaluate the financial risk of the firm. The average degree of financial leverage of SDBL is 1.51. The SDBL bearing the least financial risk.

SDBL has positive correlation between TD and SHE of 0.65 that is they deviate in the make defection. Likewise, the probable error is 1.35, greater than correlation coefficient, i.e., relationship between TD and SHE is not significant.

Correlation coefficient and PE ratio between long-term debt and earning per share of SDBL is 0.39 and 1.98 respectively. It shows that there is insignificant relationship as PE is greater than correlation coefficient.

The correlation coefficient between EBIT and Interest of SDBL is positive. In case of SDBL, the value is not significant since r is less than P.E.

The correlation coefficient between EBIT and DPS of SDBL is 0.42 and 6PE is 1.92 indicating insignificant correlation.

CHAPTER – V

SUMMARY, CONCLUSION AND SUGGESTION

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

5.1. Summary

In this study, to analyze about capital structure, Siddhartha development bank has been chosen. To make the study more reliable, the whole study has been divided into five chapters. The summaries of each chapter are presented following.

First chapter starts with historical background of the study. In this chapter an introduction to banking industry in Nepal, introduction of the bank, description of the capital structure is presented briefly. This study endeavors to evaluate capital structure SDBL. The main questions presented as the ‘focus of the study’ what is the condition of capital structure of the SDBL.

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

Finally, ‘significant of the study’ and ‘limitations of the study’ are also presented in the first chapter.

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

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

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

In the end of summary of the study are presented in brief to understand the whole get about of the study instantly after which conclusion of the study with suggestion are presented.

5.2. Conclusion

SDBL bank has all ratio are fluctuating rather smooth correlation, while increasing the DFL decreasing the return trend, probably due to the effect of long term investment on physical assets and extension and addition of banking branch in different region.

From the study and analyzing the data available of the SDBL following ratio and condition are found as follows long term debt to total debt ratio is 0.15, LTD to CER is 0.0067, debt to asset ratio is 0.5, debt to equity ratio is 0.004, interest coverage ratio is 1.28, return on assets 0.16, return on shareholders equity is 8.51% , EPS Rs 9.59 , DPS Rs 7, overall capitalization rate 20.42% while as overall capitalization amount is 1373.32 million, cost of capital is 3.44 and degree of financial leverage is 1.51.

This data shows that there is less amount of long term debt, which presences is insignificant in the return, there is no proper correlation of the data available and no significance of correlation which may be due to the less number of year taken for the analysis and other things may be due to the extension and addition of new branch over the country and newly developing the national level bank so initial large investment on the physical facilities cause the insignificance of the correlation.

5.3. Suggestion

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

First of all, the company is developing as a national level bank which has lacks the theoretical knowledge regarding the capital structure. They have not given significant attention to the capital structure matter. Capital structure is a serious matter. It affects EPS, Value of the firm, Cost of capital etc, so it is recommended that these company should follow the theoretical aspects of the capital structure management of give bit more attention in this matter and try to manage their activities accordingly.

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