Capital Structure Management in Nepalese Enterprises

A THESIS

Submitted by

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To

Office of the Dean

Faculty of Management

Tribhuvan University

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Kirtipur, Kathmandu, Nepal

September, 2015

DECLARATION

I hereby declare that this thesis entitled **"Capital Structure Management in Nepalese Enterprises"** submitted to Faculty of Management, Tribhuvan University is my original research work carried out under the supervision of Prof. Dr. Radhe Shyam Pradhan for the fulfilment of the requirement of the Degree of Doctor of Philosophy (Ph. D.). I have made the acknowledgement of the works of others that have been referred in the preparation of this thesis by means of complete references.

Pradeep Rajopadhyay

September, 2015

Date: September 22, 2015

Recommendation of Supervisor

I certify that the thesis entitled "Capital Structure management in Nepalese Enterprises" submitted by Pradeep Rajopadhyay to the Faculty of Management (FOM), Tribhuvan University for the degree of Doctor of Philosophy (Ph. D.) was completed under my supervision and guidance. This thesis is the candidate's original work and I have carefully read the substance of this thesis.

To the best of my knowledge, the candidate has also fulfilled all other requirements of the Ph. D. program of the Faculty of Management (FOM), Tribhuvan University.

I, therefore, recommend that this thesis be considered and approved for the award of the Ph. D. Degree.

_____

Prof. Dr. Radhe Shyam Pradhan
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VIVA-VOCE SHEET

We have conducted the viva-voce examination of the thesis

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is found the thesis to be the original work of the student and written according to the prescribed format. We recommend the thesis to be accepted as the fulfillment of the requirements for the degree of Doctor of Philosophy (Ph. D.) in Management.

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List of abbreviations

CR_{it}	: Current ratio
CTA_{it}	: Ratio of cash to total assets
CF_{it}	: Cash flows from operating activities
DR_1	: Ratio of short term debt to total assets
DR_2	: Ratio of long term debt to total assets
DR_3	: Ratio of total debt to total assets
$DEPTA_{it}$	: Ratio of depreciation to total assets
ΔDR_1	: Change in the ratio of short term debt to total assets
ΔDR_2	: Change in the ratio of long term debt to total assets
ΔDR_3	: Change in the ratio of total debt to total assets
ΔD_{it}	: Change in the ratio of total debt to total assets
$DIVD_{it}$	: Dividend paid
DEF_{it}	: Internal fund deficiency
ΔDTA_{it}	: Change in the ratio of total debt to total assets
$DEFTA_{it}$	: Ratio of internal fund deficiency to total assets
EBIT	: Earnings before interest and taxes
$EBITDTA_{it}$	: Ratio of earnings before interest and taxes and depreciations to total assets
$\Delta EBITDTA_{it}$	: Ratio of change in earnings before interest and taxes and depreciations to total assets
ED	: Economic Development
ΔE_{it}	: Change in the ratio of total equity to total assets
$\Delta FGDP_{it}$	: Future expected change in gross domestic product
In S_{it}	: Size of the firms
$INVFATA_{it}$	: Ratio of inventories and fixed assets to total assets
ΔINFLATION	: Change in expected inflation rate

I_{it}	: Investment in fixed assets
NEPSE	: Nepal Stock Exchange
N	: Number of observations
SEBON	: Securities Board of Nepal
ΔTA_{it}	: Change in total assets
VIF	: Variance Inflation Factor
ΔWC_{it}	: Change in working capital

CHAPTER ONE

INTRODUCTION

1.1 General background

The capital structure decision is concerned with explaining how the mix of various sources of capital, basically, debt and equity in a firm's capital structure affects its value. The proposition made by Modigliani and Miller (1958) posits that the firm's value is independent of its capital structure under the very restrictive assumption of perfect capital market. 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. Subsequent works have relaxed several of the restrictive assumptions behind the irrelevant proposition of Modigliani and Miller and have introduced capital market imperfections into the model, such as bankruptcy costs, corporate taxes, asymmetric information, and free cash flows. Since the firms are allowed to deduct interest paid on debt from their tax liability, firms balance the tax benefits of debt against the cost of financial distress and bankruptcy (Kraus and Litzenberger, 1973). In fact, debt increases the risk of financial distress, potentially avoiding a firm's excessive debt financing. The higher a firm's debt ratio, the higher will be the associated probability of bankruptcy.

Agency costs represent another type of costs that should be weighed against the tax advantage of debt. The managers have an incentive to strive for maximization of equity value instead of total firm value (Jensen and Meckling, 1976). Managers of debt-financed firms tend to engage in risk-shifting strategies when they have free cash flow available. Specifically, the managers favor risky projects that benefit shareholders in the case of success but burden losses on bondholders in the case of failure. Rational bond investors

are aware of this type of overinvestment problem, and hence they demand a risk premium and consequently a higher interest payment as a compensation for this behavior. These increased costs reduce the attractiveness for firms to use debt. The managers of highly levered firms have an incentive to forgo positive net present value projects as long as the gains from these projects accrue only to the bondholders (Myers, 1977).

A sound capital structure and informed financing decisions can lead to a reduction in a firm's cost of capital and an increase in shareholder value. The sources of capital have important consequences for the firm and can affect its value and hence shareholder wealth. However, a perennial debate in finance is concerned with the question of optimal capital structure (Barclay and Smith, 1999).

In their seminal work, Modigliani and Miller (1958) show that under stringent condition of competitive, frictionless, and perfect capital markets, the value of firm is independent of its capital structure. That is, the managers can not alter firm value or cost of capital by the capital structures that they choose. Using arbitrage arguments, they prove that under very restrictive assumptions capital structure decision does not matter and deemed to be irrelevant in the valuation of the firms. Yet, mixed views exist about whether an optimal capital structure exists.

During the last decades, the financial economists have relaxed the restrictive assumptions underlying the theory of capital structure proposed by Modigliani and Miller and have introduced capital market imperfections into their models. By introducing capital market imperfections, such as taxes, bankruptcy costs, and asymmetric information, financial economists are able to explain at least some factors driving capital structure decision.

Consequently, various capital structure theories such as trade-off theory (Kraus and Litzenberger 1973), pecking order theory (Myers 1984; Myers and Majluf 1984), signaling theory (Ross 1977), and market timing theory (Baker and Wurgler 2002) have set forth to explain the relevance of capital structure. These theories relate directly to taxes, asymmetric information, agency problems, and bankruptcy costs. Taken separately, these theories cannot explain certain important facts about capital structure. Despite extensive studies on the capital structure, determining the precise financing mix that maximizes the market value of the firm remains elusive.

Throughout the literature, debates have centered on whether there exists an optimal capital structure or whether the proportion of debt in the capital structure of the firm is irrelevant to the individual firm's value. Over the past decades, theories on a firm's capital structure choice have evolved many directions with many models being built to explain a firm's financing behavior. The theories suggest that firms select capital structure depending on attributes that determine the various costs and benefits associated with debt and equity financing. The debt capital that a firm uses to finance its assets not only brings better returns to existing shareholders because of the benefits, typically in terms of tax savings associated with debt capital but also, at the same time, increases risk as it causes financial distress and agency costs.

The theory of corporate finance in a modern sense starts with the Modigliani and Miller's (1958) capital structure irrelevance proposition. Before them, there was no generally accepted theory of capital structure. They start by assuming that the firm has a particular set of expected cash flows. When the firm chooses a certain proportion of debt and equity to finance its assets, all that it does is to divide up the cash flows among investors.

Investors and firms are assumed to have equal access to financial markets, which allows for homemade leverage. The investor can create any leverage that was wanted but not offered, or the investor can get rid of any leverage that the firm took on but was not wanted. As a result, the leverage of the firm has no effect on the market value of the firm.

Five years after instituting this irrelevance proposition, Modigliani and Miller (1963) corrected their previous version of capital structure and result overwhelmingly reversed the claim of the earlier prediction. On this account, they recognize that with the corporate tax advantages of debt, the use of debt in firm's capital structure has the effect of increasing the value of firm. They reviewed their earlier position by incorporating tax benefits as determinant of the capital structure of the firms. The key feature of 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 tax paid. Because of tax advantage of debt capital, the firm is supposed to use as much debt capital as possible in order to maximize the value of the firms.

Although financial economists widely agreed on the notion that capital structure is not irrelevant, there exists no comprehensive model of capital structure that incorporates all empirical observations. The firms balance the tax benefits of debt against the cost of financial distress and bankruptcy. Debt capital increases the risk of financial distress, potentially avoiding a firm’s excessive debt financing. The higher a firm’s debt ratio, the higher will be the associated probability of bankruptcy. The resulting costs of financial distress can be divided into direct and indirect costs (Haugen and Senbet 1978). Direct costs of bankruptcy are comprised of legal fees, restructuring costs, and credit costs, among others. Indirect costs include losses in customer confidence, declining vendor

relationships, and the loss of employees. In order to balance the gains and costs of debt financing, a theory that was developed by Kraus and Litzenberger (1973) known as trade-off theory of capital structure. This theory values the company as the value of the firm if unlevered plus the present value of the tax shield minus the present value of bankruptcy and agency costs. Much of the previous empirical work on the determinants of borrowing decisions of firms has tended to concentrate on the factors predicted by the trade-off theory of capital structure, which is based on a trade-off between the tax advantages of debt financing and the costs of financial distress.

Then after, efforts have also been made to develop models in which capital structure is determined by agency cost, i.e., costs due to conflicts of interest among the different stakeholders. The study in this area was initiated by Jensen and Meckling (1976).The agency theory developed by them addresses the incentive problems that could arise due to the separation between ownership and control. This separation may provide managers with the incentive to maximize their wealth in a way that may harm stockholders. The managers may conduct actions that are costly to shareholders, such as consuming excessive perquisites. Agency costs represent another type of costs that should be weighed against the tax advantage of debt. The managers have an incentive to strive for maximization of equity value instead of total firm value. Managers of debt-financed firms tend to engage in risk-shifting strategies when they have free cash flow available. Specially, they risky projects that benefit shareholders in the case of success but burden losses on bondholders in the case of failure. Rational bond investors are aware of this type of overinvestment problem, and hence they demand a risk premium and

consequently a higher interest payment as a compensation for this behavior. These increased costs reduce the attractiveness for firms to issue debt.

The concept of optimal capital structure is also expressed by Myers (1984) and Myers and Majluf (1984) based on the notion of asymmetric information. The existence of information asymmetries between the firm and likely finance providers causes the relative costs of finance to vary between the different sources of finance. For instance, an internal source of finance where the funds provider is the firm itself will have more information about the firm than new equity holders. So, these new equity holders will expect a higher rate of return on their investments. This means that it will cost the firm more to issue fresh equity shares than using internal funds. Similarly, this argument could be applied equally between internal finance and new debt holders. The conclusion drawn from the asymmetric information theory is that there is a hierarchy of firm preferences with respect to the financing of their investments. Thus, the pecking order theory suggests that firms will initially rely on internally generated funds, i.e. undistributed earnings, where there is no existence of information asymmetry, and then they will turn to debt if additional funds are needed and finally they will issue equity to cover any remaining capital requirements.

The pecking order hypothesis suggests that firms are willing to sell equity when the market overvalues it. This is based on the assumption that managers act in favor of the interest of existing shareholders. As a consequence, they refuse to issue undervalued shares unless the value transfer from old to new shareholders in more than offset by the net present value of the growth opportunity. This leads to the conclusion that new shares will only be issued at a higher price than that imposed by the real market value of the

firm. Therefore, investors interpret the issuance of equity by a firm as signal of overpricing. If external financing is unavoidable, the firm will go with secured debt as opposed to risky debt and firms will only issue common stocks as a last resort. Myers and Majluf (1984) maintain that firms would prefer internal sources to costly external finance. Thus, according to the pecking order hypothesis, firms that are profitable and generate high earnings are expected to use less debt capital than those that do not generate high earnings. According to DeAngelo and Masulis (1980), investors have little ability to accurately forecast future earnings based on publicly available information for firms with high earnings volatility. The market will view these firms as "lemons" and demand a premium to provide debt. Moreover, in order to reduce the necessity of issuing new equity or else being unable to realize profitable investments when cash flows are low, firms with more volatile cash flows maintain low leverage. Accordingly, the pecking order model also predicts a negative relationship between debt ratio and the cash flow volatility of the firms.

Another theory on capital structure is free cash flow theory, introduced by Jensen (1986), which suggests that free cash flow as cash flow in excess of that required funding all projects that have positive net present value. Accordingly, when managers have more cash flow than is needed to fund all of the firm's profitable projects, they will have the incentive to invest the excess cash in unprofitable projects. The conflict of interest between managers and shareholders and thereby its costs will significantly increase when managers have free cash under control. Hence, the profitable firms are expected to experience high costs of free cash flow because the probability of having excess cash for consuming more perquisites or investing in less profitable projects will be high. These

firms are expected to have more debt to reduce the amount of funds available under management control (Jensen 1986). Accordingly, free cash flow hypothesis points that leverage exerts a disciplining effect. Because managers are forced to generate constant cash flows to meet their firms' debt repayments, the ability to invest in firm value-destroying but equity value-enhancing projects is reduced.

Besides, different theories suggest there are determinants that may affect the firm's debt ratio, such as asset structure, profitability, earnings volatility, firm size, growth rates, industry classification, control, taxes, managerial conservatism, financial flexibility, market conditions, etc. However, there are conflicting conclusions on the impact of firm specific variables. In the studies of Bowen et al. (1982) and Kim and Sorensen (1986), they provide evidences on the negative relationship between non-debt tax shields and leverage. Conversely, Bradley et al. (1984), and Titman and Wessels (1988) fail to provide such supports. There are also conflicting results on the relationship between size and leverage. Ferri and Jones (1979) and Kim and Sorensen (1986) show that there is no systematic association between firm size and debt ratio. On the other hand, Titman and Wessels (1988) show the results that are consistence with the notion that larger firms have higher debt ratios. There are also strong empirical evidences supporting a negative relationship between profitability and debt ratios. For example, the findings of Kester (1986), and Rajan and Zingales (1995) show strong support for the negative relationship between profitability and debt ratio. However, Long and Malitz (1985) do not support such a relation between debt ratio and profitability. Lemmon and Zender (2009) suggest that firms issue less debt and finance themselves through equity issues when their access to debt markets is restricted.

Studies have shown that in addition to firm specific variables determining the capital structure, macroeconomic conditions and macroeconomic variables as the determinants of the capital structure. The aggregate net debt issues of large firms increase subsequent to recession induced by monetary contractions (Gertler and Gilchrist 1993). The chances of bankruptcy decreases, taxable income increases, and the value of collaterals also increases during expansions, all making a firm's debt less risky. Agency problems are more pronounced during recessions as argued by Frank and Goyal (2009). Therefore, if debt disciplines managers, leverage should be counter-cyclical. The pecking order theory also predicts a negative relationship between leverage and economic growth. Korteweg (2010) examines the net benefits of leverage to firms. The results show that firms that have debt in their capital structure are worth 5.5 percent more than the firms with no debt in their capital structure. The study finds that net benefits for low-debt firms increase by taking on more leverage but decrease when leverage becomes high, implying the existence of an optimal capital structure.

In a study by Shrestha (1985), the author observes the lack of pattern in the aggregate trend of capital structure of Nepalese enterprises and finds that there are low capital gearing and even unbalanced capital structure in public enterprises of Nepal. Pradhan and Ang (1994) show that the retained earnings as most widely used sources of funds in Nepalese enterprises to meet their financial requirements. This finding is consistent with the pecking order theory of capital structure. Baral (2004) observes the size, business risk, growth rate, earning rate, dividend payout, debt service capacity, and degree of operating leverage as determinants of capital structure of Nepalese firms listed on Nepal Stock Exchange (NEPSE).

Despite extensive studies, it is still viewed capital structure as puzzle in which all the pieces do not fit perfectly into a place. Surveys by Graham and Harvey (2001); Bancel and Mittoo (2004); and Brounen et al (2005) report gap between theory and practice involving capital structure decisions. Although understanding in the area of capital structure issues is incomplete and questions still remain on how firms should determine their financing mix, much theoretical and empirical evidence is available to provide guidance in unrevealing the capital structure puzzle. Though there are these results in the context of more developed countries, such studies using more recent data are not available in the context of Nepal. This study mainly aims at revealing recent capital structure practices of Nepalese enterprises.

1.2 Statement of the problem

Financial managers spend a great deal of time in making decisions about firm's capital structures. In addition, stock prices react dramatically when firms make major changes in their capital structures. This suggests that it probably would be unwise to stick with the conclusions that the capital structure decision is irrelevant. Williams (1938) is the first to introduce the irrelevance proposition of capital structure and states that bond could be retired with stock issues, or two classes of junior securities could be combined into one, without changing the investment value of the company as a whole. Nonetheless, it is Modigliani and Miller (1958) who provide the first formal analysis of capital structure irrelevance under the perfect market assumptions and in the absence of corporate tax. The most obviously unrealistic assumption is that of no taxes. Taxes have a major effect on

the cash flows of firms and, as a result, strongly influence their capital structure decisions. In the absence of taxes and other market imperfections, the value of the firm is independent of how it is financed. However, the interest tax deduction makes debt financing less expensive than equity financing, which implies that the firm's capital structure do matter. The real world is very different from the frictionless markets model set forth by Modigliani and Miller. In reality, managers can create value for their firms by making judicious financing decisions. The key insight is that when interest payments, but not dividends, are tax deductible, debt is a less expensive form of financing than equity. Indeed, a study of 392 CFOs by Graham and Harvey (2001) show that 45 percent of the respondents are of opinion that the corporate tax plays an important role in their capital structure choices.

In the world of Modigliani and Miller, a firm that goes bankrupt has its assets transferred without costs from equity holders to debt holders. Their model also assume that the real investment and operating decisions of the firm can be made independently of this potential transfer of ownership, which is likely to be the case in the absence of contracting and transaction costs. In reality, however, legal costs are associated with this transfer. Perhaps more importantly, managerial incentives in a firm close to bankruptcy will change in ways that can create substantial costs to the firms. Because of these potential costs, firms tend to limit their use of debt financing despite its tax advantages.

Although widely agreed on the notion that capital structure is not irrelevant in imperfect capital markets, there exists no comprehensive model that incorporates all the empirical observations relating to capital structure issues. The debate in the field of corporate finance is what determine the capital structure and how the firms choose their capital

structure. Firm size has been one of the variables most commonly used in explaining a company's level of debt. The studies have claimed that the size of the firm is positively related to debt as a source of financing (Crutchley and Hansen, 1989). The larger a firm is, the more information is expected to be available about it, which reduces the level of information asymmetries in the market, making it possible to obtain financial resources from lenders. The tangible assets of a firm can be considered as representative of the real guarantees that it can offer its creditors. The importance of those assets among total assets influences its level of debt, which rises with the increase of warrantees offered by the firm to satisfy its obligations arising from contracted debt (Chung, 1993; Rajan and Zingales, 1995). In the context of Nepal, the relationship between size of the firms and level of debt capital is still not known.

According to Myers (1977), the firms with high debt level and good growth opportunities and acting to protect shareholders, managers would prefer not to carry out some positive investment projects if the profits find their way into the hands of bondholders. Similar results have also been obtained by Chung (1993) and Rajan and Zingales (1995). Still others argue that corporate managers making financing decisions are concerned primarily about the signaling effects of such decisions. The tendency of stock prices to fall significantly in response to announcement of common stock offerings can make such offerings quite expensive for the existing shareholders. Building on this signaling argument, Myers (1984) suggests that corporate capital structures are largely unplanned outcomes of individual financing decisions in which managers follow a financial pecking order in which retained earnings are systematically preferred to outside financing, and debt is preferred to equity when outside funding is required. The corporate managers

making financing decisions are not really thinking about a long-run target debt-equity ratio. Instead, they take the path of least resistance and choose what at the time appears to be the lowest-cost financing vehicle, generally debt, with little thought about the future consequences of the choices. This argument clearly indicates that the profitable firms tend to use less amount of debt in their capital structure and expect the negative relationship between debt ratio and profitability.

The pecking order theory, developed by Myers (1984) and Myers and Majluf (1984), is based on the notion of asymmetric information between firm insiders and outsiders and the resulting adverse selection problems. According to them, managers will have more information about the true value of the firm's assets and future growth opportunities than outside investors, and hence closely observe financing decisions to infer information about a firm's prospects. It posits that a firm's capital structure is the result of the firm's financing requirements over time and its attempt to minimize adverse selection cost. The pecking order theory ranks financing sources according to the degree they are affected by information asymmetry, where internal funds exhibit the lowest and equity the highest adverse selection costs. In this regards, it is not yet known whether the firms go by optimal capital structure as suggested by trade-off theory or pecking order hypothesis.

Rajan and Zingales (1995) analyze the level of debt in companies in G7 Groups, reaching the conclusion that the debt level of companies in the United States is similar to that of companies in the other countries. The variables that help explain the corporate debt level in the USA are the tangibility of assets, investment opportunities, company size, and profitability. The literature on capital structure has focused a number of firm specific variables affecting the capital structure of an individual firm based on the two main

theories, static trade-off theory and pecking order theory. These theories have been developed and tested in developed and big capital markets particularly in USA and UK but their applicability is yet to be seen in the context of smaller and under developed capital markets. Viewed in this way, the present study which is based on a small capital market of Nepal can be considered all the more important. This study mainly addresses the following issues:

1. What are the capital structure patterns of the selected Nepalese enterprises? How have these patterns changed over a period of time? Do the debt ratios differ significantly among the selected enterprises?

2. What are the patterns and trends of the firm specific factors determining the capital structures of Nepalese enterprises? Do the patterns and trends of the firm specific variables differ significantly within the firms and also among the firms?

3. What are the size of the firm, growth, profitability, and liquidity of the selected Nepalese enterprises? Are there any changes taking place in these firm specific factors over the period of study?

4. What are the financial flexibility, non-debt tax shields, tangibility of assets, and volatility of the selected enterprises? How have these factors evolved over the time period of study?

5. Do the expected GDP and inflation play a significant role in determining the capital structures of selected Nepalese enterprises?

6. Do the firm specific factors considered in this study helpful in explaining the debt ratios of selected enterprises? If yes, what are those factors affecting the capital structure of selected Nepalese enterprises?

7. Which factors are more dominant in explaining the variation in debt ratios of the selected enterprises? Do those factors behave in the similar way compared to results from the studies in developed countries?

8. Do the capital structure management practices in the selected enterprises explain by the trade-off theory? If yes, what is the speed of adjustment between actual and target capital structures of selected Nepalese enterprises? Whether the observed speed of adjustment is fast or slow?

9. Do the selected Nepalese enterprises go by pecking order hypothesis of capital structure? If yes, whether it is in weak form or in strong form?

10. What is the practice of capital structure management in Nepalese enterprises? Is there any consensus among the practitioners on various issues of capital structure management of an enterprise?

11. Do the views of responding group from the survey among the practitioners relating to capital structure issues differ from the results revealed by the use of secondary data of Nepalese enterprises?

12. Do the views expressed by the Nepalese practitioners with reference to the capital structure issues differ significantly with those of developed countries?

1.3 Objectives of the study

The major objective of this study is to examine the capital structure management in the selected Nepalese manufacturing enterprises. The specific objectives are as follows.

i) To examine the structures and patterns of capital structure and firm specific factors affecting the capital structure of Nepalese enterprises.

ii) To find out the factors, mainly the firm specific factors, affecting the various debt ratios in selected enterprises and their relationship with debt ratios and to compare the results between private enterprises and public enterprises.

iii) To examine whether trade-off theory of capital structure management explain the capital structure management practices of selected enterprises and to measure the speed of adjustment to achieve the target debt ratio.

iv) To know whether the capital structure of selected enterprises behave in the way as predicted by pecking order hypothesis.

v) To examine the views of the practitioners relating to capital structure management through questionnaire survey.

1.4 Organization of the study

The study has been organized into six chapters and each chapter is devoted to some aspects of the study. Chapter one describes the introduction, the major issues to be investigated along with the objectives of the study. Chapter two is concerned with the

review of literature relating to capital structure management. This chapter discusses on some prominent theories on capital structure, empirical studies, and conceptual framework. Chapter three basically deals with the methodology relating to this study and the limitation of the study. This chapter discusses research design, nature and source of data, list of enterprises selected for the study, definition of key terms, and method of analysis. Chapter four has been designed for the analysis of the secondary data collected from the selected enterprises and discussion on the results observed. Chapter five has been designed to discuss on the findings based on the survey that has been conducted among the practitioners of Nepalese enterprises and lastly, chapter six states summary and conclusion of this study.

CHAPTER TWO

THEORETICAL FRAMEWORK AND REVIW OF LITERATURE

2.1 Introduction

Over the period of more than five decades, three major theories explaining the capital structure have been developed. All these three theories diverge from the assumption of perfect capital markets under which the capital structure proposed by Modigliani and Miller was based. Modigliani and Miller's (1958) work assumes that firms operate in a completely free and competitive market without taxes and transaction costs, where information is completely transparent and available without cost. As a result there is no optimal way of financing under this model.

When the assumptions of perfect capital markets are dropped out, the decision relating to capital structure of a firm becomes relevant. The theories have been advanced to deal with factors such as taxes, agency costs, costs of financial distress and asymmetric information that might cause deviations from their efficient market hypothesis (Romano et al, 2000). Such theories fall into three main categories: tax-based theories, agency cost theories, and asymmetric information and signaling theories.

In recent years, three pragmatic theories have added to the knowledge of capital structure. The static trade-off theory builds on both tax-based theories and agency cost theories to explain how firms make financing decisions. It is designed to deal with the distortions likely to be caused by taxation (Scott, 1972; Kraus and Litzenberger, 1973; Kim, 1978) and the possibility of the discontinuity caused by bankruptcy. The pecking-order theory (Myers, 1984; Myers and Majluf; 1984) builds on elements of asymmetric information

and signaling theories. They are advanced to cope with the distortions that may be caused by asymmetric information between firms and their potential lenders. More recently, Baker and Wurgler (2002) proposed new capital structure theory based on cumulative outcome of past attempts to time the equity market which is known as market timing theory of capital structure.

2.2 Theories of capital structure

In the literature of capital structure, besides theory of capital structure developed by Modigliani and Miller (1958), four main important but conflicting theories have been developed. This includes the trade-off theory, agency costs theory developed by Jensen and Meckling (1976), signaling hypothesis theory developed by Ross (1977) and pecking order theory developed by Myers and Majluf (1984). Apart from that, there are two very recently developed theories/models to explain the capital structure choices of firms, namely, model based on product/input and output market interactions initiated by Titman (1984) and model based on market timing developed by Baker and Wurgler (2002). These theories are discussed below shortly.

2.2.1 Modigliani-Miller's approach

In their seminal work on capital structure, Modigliani and Miller (1958) show that financing decisions do not matter in perfect capital markets. They argue a firm's operation, and not its financing decisions, determine its total value. The Modigliani and Miller's approach is a cornerstone in corporate finance. They start with the question what is the cost of capital to a firm? They formulate two propositions, Proposition I and II.

Proposition I states that the market value of a firm is independent of its capital structure. That is, the average cost of capital for a firm is completely independent of its capital structure, and it is equal to the capitalization rate of a pure equity stream of its class. Derived from Proposition I, Proposition II states that the expected yield of a share is equal to the appropriate capitalization rate plus a premium related to financial risk equal to the debt-to-equity ratio. Their propositions are based on the following assumptions:

i) Investment opportunities of the firm remain fixed.

ii) Investors have homogeneous expectations about future corporate earnings and the volatility of these earnings.

iii) Capital markets are perfect, e.g., there are no transaction costs, and taxes and investors can borrow at the same rate as the companies.

iv) There are no bankruptcy and reorganization costs.

v) Debt is risk free and the interest rate on debt is the risk-free rate.

vi) The business risk of a firm can be measured by the standard deviation of earnings, and firms can be grouped into distinct business sectors.

In this regards, Miller (1991) explains the intuition of the theorem with a simple analogy.

> "Think of the firm as a gigantic tub of whole milk. The farmer can sell the whole milk as it is. Or he can separate out the cream, and sell it at a considerably higher price than the whole milk would bring". He continues, "The Modigliani-Miller proposition says that if there were no costs of separation, (and, of course, no government dairy support program), the cream plus the skim milk would bring the same price as the whole milk". "The essence of the argument is that increasing the amount of debt (cream) lowers the value of outstanding equity (skim milk) –

selling off safe cash flows to debt-holders leaves the firm with more lower valued equity, keeping the total value of the firm unchanged. Put differently, any gain from using more of what might seem to be cheaper debt is offset by the higher cost of riskier equity. Hence, given a fixed amount of total capital, the allocation of capital between debt and equity is irrelevant because the weighted average of the two costs of capital to the firm is the same for all possible combinations of the two".

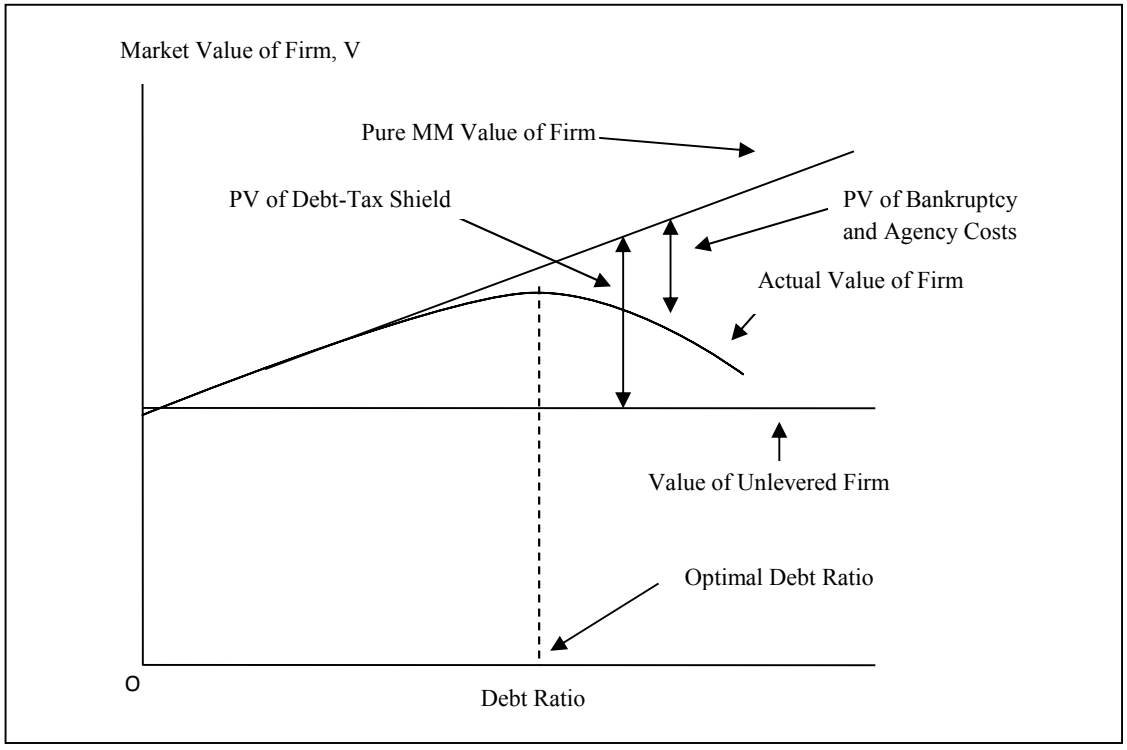
2.2.2 Static trade-off theory of capital structure

The trade-off theory originated from the debate over the Modigliani and Miller (1958) theorem. This theory, as originally introduced by Kraus and Litzenberger (1973), suggests that firms balance the tax benefits of debt against the deadweight costs of financial distress and bankruptcy. Under static trade-off theory, managers are believed to seek optimal capital structure which could maximize the value of the firm. This optimal leverage is determined by balancing the benefits and costs associated to debt capital. The benefits of debt capital include the tax deductibility of interest and the reduction of free cash flows. The costs of debt include potential bankruptcy costs and agency cost due to conflicts between stockholders and bondholders.

In their second seminal paper, Modigliani and Miller (1963) incorporate the corporate tax and contend that the value of the firm, if levered, equals the value of the firm if unlevered plus the value of the tax benefit. But they ignore the agency and bankruptcy costs as in their previous work of 1958. To certain limits, the presence of agency and bankruptcy costs of debt will be less than its tax benefits, suggesting that there is some threshold

level of debt, under which the value of the firm is maximized. This threshold of debt is generally called the optimal (target) level of debt and is defined by the trade-off between costs of debt and its benefits. More precisely, it is the point where the marginal costs equal to marginal benefits of each unit of debt. Beyond that point the benefits of debt will be less than its cost which reduces the value of the firm. This notion can be presented with the help of following figure.

Figure 2.1: Trade-off theory of capital structure



This theory states that optimal capital structure is obtained by balancing the tax advantage of debt financing and leverage related costs such as financial distress and bankruptcy, holding firm's assets and investment constant. The standard presentation of static trade-off theory is provided by Bradley et al., (1984). They made the following conclusion based on their static trade-off model.

i) An increase in the costs of financial distress reduces the optimal debt ratio.

ii) An increase in non-debt tax shield reduces the optimal debt ratio.

iii) An increase in the personal tax rate on equity increases the optimal debt ratio.

iv) At the optimal capital structure, an increase in the marginal bondholder tax rate decreases the optimal debt ratio.

v) The effect of risk is ambiguous, even if uncertainty is assumed to be normally distributed. The relationship between debt and volatility is negative.

According to Myers (1984), firms adopting this theory could be regarded as setting the target debt ratio and gradually moving towards achieving it. The static trade-off theory also suggests that higher profitable firms have higher target debt ratio (this contradicts with the pecking order theory which suggests higher profitability firms have lesser debt). Higher profitability firms ensure higher tax saving from debt, lower probability of bankruptcy and higher over-investment and these require a higher target debt ratio.

2.2.3 Agency cost theory of capital structure

The next important theory mentioned in the literature is the agency cost theory. It is worth noting that the tax advantage of debt is not only the sole reason for using debt. As suggested by Jensen and Meckling (1976) and Jensen (1986), using debt is a mechanism to mitigate the agency costs of managers-shareholders conflicts. The agency theory of Jensen and Meckling addresses the incentive problems that could arise due to the separation between ownership and control. This separation may provide them with the incentive to maximize their wealth in a way that may harm stockholders. The managers may conduct actions that are costly to shareholders, such as consuming excessive

perquisites or over-investing in unprofitable activities or to overvalue the investment requirements and to take the difference between the dummy value and real value of the investment. The conflict of interest between managers and shareholders and thereby its costs will significantly increase when managers have free cash under control. Jensen (1986) addresses the agency problem in his free cash flow theory where he defines free cash flow as "cash flow in excess of that required funding all projects that have positive net present value when discounted at the relevant cost of capital". Accordingly, when managers have more cash flow than is needed to fund all of the firm's available profitable projects, they will have the incentive to invest the excess cash in unprofitable projects. Stulz (1990) calls this cost an over-investment cost of managerial discretion and defines it as " the expected cost to the shareholders that arise because management invest cash flow in excess of that available to fund positive net present value projects in negative net present value projects". Hence, profitable firms are expected to experience high costs of free cash flow because the probability of having excess cash for consuming more perquisites or investing in less profitable projects will be high. These firms are expected to have more debt to reduce the amount of funds available under management control.

Jensen (1986) points out that since debt commits the firms to pay out cash, it reduces the amount of discretionary funds available to managers to engage in the type of pursuits that managers want but are not in the interest of equity holders. Hence, using debt forces the managers to meet their promise to pay future cash flows to the debt-holders. By doing so, managers give the bondholders the right to take the firm to the bankruptcy court if they do not maintain their commitment to make the interest and principal payments. Here, debt works as a disciplining tool because default allows creditors the option of forcing the

firm into liquidation (Harris and Raviv, 1990). Furthermore, Lasfer (1995) argues that debt finance creates a motivation for managers to work harder and make better investment decision.

However, the benefit of debt in mitigating the agency cost of free cash flow is more effective in firms that generate a substantial amount of free cash flow but have poor investment opportunities, where the probability of investing free cash flow in unprofitable projects is high (Jensen, 1986). While, for rapidly growing firms with large and good investment opportunities but who have no free cash flow, debt will not be effective. It exacerbates the conflict between debt holders and shareholders and thereby its costs. In addition to its role in mitigating the agency cost of free cash flow, debt provides management with the benefit of maintaining control where, a high control benefit includes stockholders to issue debt rather than equity because debt holders have no voting rights as equity (Harris and Raviv, 1990). If it is the case, the firm will prefer debt not equity for balancing the control consideration (Baskin, 1989; Allen, 1993).

In summary, the introduction of debt decreases stockholder-manager agency costs, but as the use of debt increases stockholders and bondholders agency costs arise. For a large amount of debt, these costs will exceed the stockholder-manager agency costs savings. According to Jensen and Meckling (1976), the trade-off between these costs results in an optimal capital structure. In a traditional tax and bankruptcy model, the stockholder-manager agency costs savings and stockholders and bondholders agency costs are not considered. Tong and Green (2005) argue that the modern version of trade-off theory is based on trade-offs among agency costs, implying that value-maximizing firms consider all the costs and benefits of debt when setting their optimal or target capital structure.

2.2.4 Signaling hypothesis theory of capital structure

Signaling hypothesis of capital structure management is introduced by Ross (1977) who indicates a positive relationship between profitability and leverage against the pecking order theory which states the negative relationship between profitability and leverage. The basic idea of signaling hypothesis is that the choice of capital structure signals outside investors the information of the insiders. According to Ross, managers, whom are known as insiders know the true distribution of firm returns, but investors do not. The managers feel more relax with equity than debt as debt can lead to managers losing jobs if firms go bankrupt. Knowing this fact, if managers keep on adding more debt in the capital structure of the firms, which reflects a 'signal of higher future cash flow' and their managers' confidence of the firms. Investors take high level of debt as a signal of 'higher quality' and therefore, profitability is expected to be positively related to leverage. Mixed results are found in the literature with respect to the effect of signaling on the capital structure decisions.

Jensen et al. (1992) show a negative relationship between leverage and signaling. In their study, signaling is represented by the dividend payment and debt issues in this case behave as a substitute in mitigating agency problems. On the other hand, John and William (1985) argue a positive relationship with signaling. A firm with the reputation of dividend payment as the measure of signaling faces with less asymmetric information in accessing the equity market. When dividend payment represents a signal of better financial health, then more debt taking capacity is created and therefore a positive relationship is noted. However, Bhaduri (2002) finds that signaling appeared insignificant in determining leverage.

2.2.5 Pecking order theory of capital structure

The pecking order theory, first proposed by Myers and Mujluf (1984) and Myers (1984), is based on the notion of asymmetric information between firm insiders and outsiders and the resulting adverse selection problems. This theory is another important theory in the study of capital structure. Managers will have more information about the true value of a firm's assets and future growth opportunities than outside investors, and hence investors closely observe financing decisions to infer information about a firm's prospects. In contrast to the trade-off theory, the pecking order theory has no predictions about an optimal debt ratio. It rather posits that a firm's capital structure is the result of the firm's financing requirements over time and its attempt to minimize adverse selection costs.

Managers as firm insiders tend to have superior information about the value of the firm, and hence they will be reluctant to issue new equity when they feel that the firm is undervalued because issuing new equity leads to a dilution of the shares of existing shareholders. Put differently, new shareholders would benefit at the expense of old shareholders, who are in turn likely to object to the new issue. The only time that a firm issues equity is when managers feel that it is currently overvalued. By announcing an issue, a firm essentially sends a signal to the market that its equity is too expensive, and one indicator for adverse selection costs is the empirically observed drop in share prices on the announcement day. Accordingly, the optimal decision for a firm to satisfy its financing needs is to use internal funds whenever available; such financing avoids all asymmetric information problems. If internal funds are depleted, a firm will next issue debt because the value of debt as a fixed claim is presumably less affected by information asymmetry than equity, which serves as a residual claim. Hybrid securities, such as junior

debt or convertible debt are the next source of financing, while equity only serves as the very last financing alternative. Thus, the pecking order theory ranks financing sources according to the degree they are affected by information asymmetry, where internal funds exhibit the lowest and equity the highest adverse selection costs.

2.2.6 Market timing theory of capital structure

Market timing theory primarily advocates that capital structure evolves as the cumulative outcome of past attempts to time the equity market (Baker and Wurgler 2002). They document that market timing efforts have a persistent impact on corporate capital structure and firms prefer equity when the relative cost of equity is low and prefer debt otherwise. They argue that neither the trade-off theory nor the pecking order theory is consistent with the persistent negative effect of a weighted average of a firm's past market-to-book ratios on firm leverage. Instead, the authors suggest that firms time their equity issues to stock market conditions. They contend an ad hoc theory of the capital structure, where the observed capital structure is not the result of a dynamic optimization strategy but merely reflects the cumulative outcome of past attempts to time the equity market.

Empirical studies document that market timing plays an important role in shaping financing activities exacerbates the deviations from leverage targets in the short-run (Leary and Roberts 2005; Alti 2006; Kayhan and Titman 2007). Moreover, these studies indicate that deviations do reverse, suggesting that the trade-offs underlying the target have non-negligible effect on firm value. Overall, these findings support a modified

version of the dynamic trade-off theory of the capital structure that includes market timing as a short-term factor.

2.3 Review of literatures

The objective of this section is to review some of the major empirical studies conducted so far relating to capital structure of firms. The review of literature helps understand the development in the subject matter so far been developed and in generating the framework for the further study by identifying the important issues in the areas and theories relating to the subject matter. In addition, the review of literature helps researchers design the appropriate methodology to carry out the research. Given the dramatic changes that took place in the financial markets throughout the world, the thinking on the topic of capital structure management and corporate financing decisions have been changed in many respects. Considering these changes, in this study, the review of literature has been organized on the basis of time period starting from 1952. This chapter presents the review of some major literature in four sections starting from the studies from 1952 till 1970s, studies during 1980s, studies during 1990s and lastly, the discussion on the major studies of 2000 onwards.

2.3.1 Review of literatures till 1970s

In this section, some prominent studies conducted during the period till 1970s has been reviewed and discussed. Table 2.1 presents the summary of the key findings of the studies till 1970s.

Table 2.1

Summary of key findings of the major studies till 1970s

Study	Key findings
Durand (1952)	The use of debt capital increases the risk to the equity holders and because of that the cost of equity will increase keeping the average cost of capital constant.
Modigliani and Miller (1958)	The market value for a firm is independent of its financing decisions and the capital structure decision is irrelevant to the value of the firm.
Schwartz (1959)	Contends that an optimum capital structure for a widely-held company is one that maximizes the long-run value of the common stock per share.
Modigliani and Miller (1963)	Debt provides the firm with a tax shield in the form of interest deductibility, the firm may benefit by issuing debt. They also examined the linearity tests between the leverage and returns of the companies. Contrary to the traditionalist theory of leverage, they did not find a clue of a curvilinear or a U-shaped relationship between the cost of capital and level of debt ratios.
Arditti (1967)	Found a negative but insignificant relationship between leverage and returns.
Hamada (1972)	Concluded that firms with debt had higher returns because of higher financial risk.
Kraus and Litzenberger (1973)	Firms balance the tax benefits of debt against the deadweight costs of financial distress and bankruptcy. Because firms are allowed to deduct interest paid on debt from their tax liability, they favor debt over equity.
Jensen and Meckling (1976)	Argued that an optimal capital structure can be obtained by trading off the agency cost of debt against the benefit of debt.
Miller (1977)	Presented another model incorporating personal income taxes to the existing corporate-tax model. In his model, Miller hypothesized that if personal tax rates on interest income are relatively higher than the personal tax rates on equity, then the gains from corporate leverage is eliminated entirely, thus reverting to the irrelevant results of capital structure.
Haugen and Senbet (1978)	Indicated financial distress and bankruptcy as offsetting costs of using debt finance. In fact, debt increases the risk of financial distress, potentially avoiding a firm's excessive debt financing. The higher a firm's debt ratio, the higher will be the associated probability of bankruptcy.
Ferri and Jones (1979)	The results indicated a positive relationship between firm size and leverage with average measures to have better coefficient.

One of the earliest formal works on the theory of capital structure was by Durand (1952), which identifies three different approaches: Net Income Approach, Net Operating Income Approach and a Middle-Ground Position which Durand used to call it as traditional approach. Net Income (NI) approach assumes that the capital structure does matter and it will affect the value of the firm.

Another approach of capital structure is Net Operating Income (NOI) approach which assumes that the capital structure decision is irrelevant. The use of debt capital increases the risk to the equity holders and because of that the cost of equity will increase keeping the average cost of capital constant. The Net Income and Net Operating Income theories as set forth by Durand are mathematically precise whereas the traditional approach is more judgmental in nature. Moreover, a review of the literature of the time offers little in the way of explanation of the assumed shape of the traditional curves; they are drawn on the basis of judgment rather than statistical evidence.

Modigliani and Miller (1958) start research efforts relating capital structure and the value of the firm. In their seminal work, they show that under stringent conditions of competitive, frictionless, and complete capital markets, the value of firm is independent of its capital structure. The managers cannot alter firm value or the cost of capital by the capital structures that they choose. Further, business risk alone determines the cost of capital. Thus, financing and capital structure decisions are not shareholder value enhancing and are deemed to be irrelevant. This is popularly known in the literature of corporate finance as proposition I of Modigliani and Miller.

Schwartz (1959) proposes using the ratio of total debt to net worth as the best single measure of gross risk. The author argues that using a broader definition of debt is best when debt encompassed the total of all liabilities and ownership claims. Firms in various industries have different assets structures that are financed by cash flows generated from various forms of debt and equity. Using book value of both variables ensures that capital structure is measured via the cash flows generated at the time when those assets were

financed. The author also contends that an optimum capital structure for a widely-held company is one that maximizes the long-run value of the common stock per share.

Later, Modigliani and Miller (1963) relax the assumption on taxes and incorporated the tax advantage on earnings into their model. They argue that the tax advantage of debt financing is greater than originally suggested. Because debt provides the firm with a tax shield in the form of interest deductibility, the firm may benefit by issuing debt. The market values of firms in each risk class must be proportional in equilibrium to their expected returns net of taxes. This is popularly known as proposition II in the literature of corporate finance.

Proposition II states that the rate of return on common stock of companies whose capital structure includes some debt is equal to the appropriate capitalization rate for a pure equity stream plus a premium related to financial risk, which is equal to the debt-to-equity ratio times the spread between the capitalization rate and risk-free rate. MM's Proposition II took the following form:

$$R_j = p_k + (p_k - r)\,(D_j/E_j)$$

Where R_j = the expected yield of a share of stock; p_k = the capitalization rate for a pure equity stream in the class; r = the cost of debt; and D_j/E_j = the debt-to-equity ratio. The return on equity capital is an increasing function of leverage. This is because debt increases the riskiness of the stock, and hence equity shareholders will demand a higher return on their stock. MM tested the Proposition II in electric utilities and oil and gas companies. They define returns as the sum of interest, preferred dividends, and stockholders' income net of corporate income taxes. Their result shows that the

coefficients of debt ratio are 0.017 for the electric utilities and 0.05 for the oil and gas companies. MM expressed this result as follow:

Electric utilities $z = 6.6 + 0.017h$, & Gas and oil companies $z = 8.9 + 0.051h$

Where z = the percentage of return to equity shareholders; and h = the debt-to-equity ratio of the firms.

Modigliani and Miller also examine the linearity tests between the leverage and returns of the companies. Contrary to the traditionalist theory of leverage, MM did not find a clue of a curvilinear or a U-shaped relationship between the cost of capital and level of debt ratios. MM's finding of a linear relationship between returns and leverage provides evidence of the rising costs of borrowed funds as leverage increases.

Arditti (1967) shows the association between leverage and returns. The author defines returns as the geometric mean of returns and leverage as the ratio of equity at market value to debt at book value. The sample of firms included industrials, railroads, and utilities and finds a negative but insignificant relationship between leverage and returns. The author contends that his results could be due to omitting some inter firm risk variables that are positively correlated with returns but negatively correlated with the leverage. These omitted variables must relate to some non-income information because the regressions include all other information relating to income.

Hamada (1972) tests the link between a firm's leverage and its common stock's systematic risk over a cross-section of all firms and concludes that firms with debt earn higher returns because of higher financial risk. The author uses industry as a proxy for business risk because his sample lacks a sufficient number of firms to undertake separate

analysis of different sectors. Using 304 U.S. firms from 1948 to 1967, the author applies the market model to test the association between leverage and stock returns and finds a positive relationship between them.

Jensen and Meckling (1976) argue that managers have an incentive to strive for maximization of equity value instead of total firm value. Managers of debt-financed firms tend to engage in risk-shifting strategies when they have free cash flows available. Specifically, they favor risky projects that benefit shareholders in the case of success but burden losses on bondholders in the case of failure. Rational bond investors are aware of this type of overinvestment problem, and hence they demand a risk premium and consequently a higher interest payment as compensation for this behavior. These increased costs reduce the attractiveness for firms to issue debt. They identify two types of conflicts. First, conflicts between shareholders and managers arise because managers holds less than hundred percent of the residual claim of the firm. Consequently, they do not capture the entire gain from their profit enhancement activities, but they do bear the entire cost of these activities. The managers bear the entire cost of refraining from these activities but capture only a fraction of the gain. As a result managers overindulge in these pursuits relative to the level that would maximize firm value. Holding constant the manager's absolute investment in the firm, increases in the fraction of the firm financed by debt increase the manager's share of the equity and mitigate the loss from the conflict between the managers and shareholders.

Second, conflicts between debt holders and equity holders arise because the debt contract gives equity holders an incentive to invest sub optimally. More specifically the debt contract provides that if an investment yields large returns, well above the face value of

the debt, equity holders capture most of the gain. If, however, the investment fails, because of limited liability of the equity holders, debt holders bear the consequences. As a result, equity holders may benefit from investing in very risky projects, even if they are value-decreasing. Such investments result in a decrease in the value of the debt. The loss in the value of the equity from the poor investment can be more than offset by the gain in equity value captured at the expense of debt holders. Equity holders bear this cost to debt holders when the debt is issued if the debt holders correctly anticipate equity holder's future behavior. In this case, the equity holders receive less for the debt than they otherwise would. Thus, the cost of the incentive to invest in value-decreasing projects created by debt is borne by the equity holders who issue the debt. This effect generally called as "assets substitution effect," is an agency cost of debt financing. The authors argue that an optimal capital structure can be obtained by trading off the agency cost of debt against the benefit of debt.

Miller (1977) presents another model incorporating personal income taxes to the existing corporate-tax model. In his model, Miller hypothesizes that if personal tax rates on interest income are relatively higher than the personal tax rates on equity, then the gains from corporate leverage is eliminated entirely, thus reverting to the irrelevant results of capital structure. Whilst all models only work in an idealized world, these controversial propositions have prompted researchers to keep adding elements of the 'real world' in seeking how the predictions the theories change. Among these 'real world' elements are financial distress costs (Stiglitz, 1969; Chen & Kim, 1979), agency costs (Jensen & Meckling (1976).

Later, Haugen and Senbet (1978) indicate financial distress and bankruptcy as offsetting costs of using debt finance. In fact, debt increases the risk of financial distress, potentially avoiding a firm's excessive debt financing. The higher a firm's debt ratio, the higher will be the associated probability of bankruptcy. The resulting costs of financial distress can be divided into direct and indirect costs. Direct costs of bankruptcy are comprised of legal fees, restructuring costs, and credit costs among other. Indirect costs include losses in customer confidence, declining vendor relationship, and the loss of employees. Ferri and Jones (1979) use data gathered from the COMPUSTAT dataset of 233 companies from1969 to 1976. As expected, the results indicate a positive relationship between firm size and leverage with average measures to have better coefficient.

The studies till 1970s mainly concerned with building the theories relating to capital structure of the firms. In addition, the major studies have been focused on the effect of taxes on capital structure, risk associated with using the debt capital, and effects on the returns to equity. Few studies are concerned whether the firm specific factors determining the capital structure management of the firms.

2.3.2 Review of literature during 1980s

In this section some prominent studies conducted during 1980s has been reviewed and discussed. Table 2.2 presents the summary of the key findings of those studies considered in this study. Several studies have investigated the empirical evidence of theories, in the UK, USA markets and the markets of other European countries.

Table 2.2

Summary of key findings of the major studies during 1980s

Study	Key findings
Marsh (1982)	Suggests that UK firms had a target capital structure for both short-term and long-term debts ratios and make their choices of financing instrument accordingly. He finds that these firms maintained their long-run target debt ratio, although they deviate from the target in the short-run in response to timing considerations and capital market conditions.
Bradley et al. (1984)	Find that leverage is negatively related to volatility and non-debt tax shield and positively with the tax benefits. The result is consistent with the prediction of theory.
Jalilvand and Harris (1984)	Indicate that the firm size, interest rates and stock price level have a significant impact on the speeds of adjustment toward the target.
Myers and Majluf (1984)	Supporting pecking order theory, they suggest that when external funds are required, the safest security debt will be issued first. Debt will be preferred to equity because equity issues are interpreted by investors as the shares being overvalued and thus investors will discount the share price.
Taggart (1985)	Concludes that the comparative costs of available financing sources induce firms to use internally generated funds as a first choice before turning to raise funds externally.
Kim and Sorensen (1986)	Find that growth opportunity is negatively related to leverage and the relationship is statistically significant.
Titman and Wessels (1988)	A strong negative relationship has been noted between debt ratios and past profitability of the firms. However, the study does not find the strong empirical support on variables like non-debt tax shields, volatility, collateral value and growth of the firms.
Barton and Gordon (1988)	The result suggests that management of firms with different diversification strategy react differently to their financial context when choosing a capital structure.
Olinear and Rudebusch (1989)	Concludes that the rate of adjustment may vary depending on whether the observed or actual leverage ratio is above or below the target leverage ratio, and on whether the deviation from the target is large or small.
Baskin (1989)	Observes a strong negative association between debt ratio and past profitability indicating the firms having more profits tend to use less debt capital supporting the pecking order theory of capital structure.

Marsh (1982) provides evidence from the UK market suggesting that UK firms have a target capital structure for both short-term and long-term debts ratios and make their choices of financing instrument accordingly. The author finds that these firms maintain their long-run target debt ratio, although they deviate from the target in the short-run in response to timing considerations and capital market conditions. The author argues that probability of issuing debts and/or equity varies with the deviation from the target level

of capital structure. The probability of equity issuance would be high (low) if the firm's leverage ratio is above (below) its target level of leverage.

Bradley et al. (1984) find the firm specific factors determining the capital structure of the firms. In their study they have developed a model considering the existence of tax advantages and bankruptcy cost. For the purpose of the study, a sample of 851 US firms for the period 20 years from 1963 to 1982 have been taken. Three firm specific factors volatility, non-debt tax shields and investment tax credit, and research and development expenses and advertisement were examined to see the implication on the theory of optimal capital structure. Volatility has been measured as the standard deviation of the first difference in annual earnings before interest, depreciation and tax. The non-debt tax shield has been measured by the ratio of sum of annual depreciation and investment tax credit divided by earnings before interest, depreciation and taxes. Similarly, the research and development expenses are measured as the ratio of advertisement expenses plus research and development expenses divided by sales over the same period. The finding is that leverage is negatively related to volatility and non-debt tax shield and positively with the tax benefits. The result is consistent with the prediction of theory.

Jalilvand and Harris (1984) find a significant adjustment coefficient, which they interpret as evidence that firms optimize debt ratios. They report a rate of adjustment of 55.7 percent per year which suggests that US firms back quickly to their target leverage ratio when their leverage ratios deviate from their target leverage ratio. Furthermore, they find that besides the costs and benefits of target reversion, the firm size, interest rates (the cost of debt itself) and stock price level have significant impact on the speeds of adjustment toward the target leverage.

Myers and Majluf (1984) explain several aspects of corporate financing behavior, including the tendency of the firms to rely on internal sources of funds and to prefer debt to equity if external financing is required. According to the authors, managers have a preference ranking over their choice of financing source, which is a consequence of asymmetric information making up a substantial portion of adverse selection and transaction costs. The asymmetric information problem arises because managers know more and better about firm value and their growth opportunities than outside investors. The hierarchy of the pecking order starts with internal finance, then debt issuance and finally equity issuance. If firms have enough financial slack, they will carry out all available positive NPV projects. Internal funds come with no flotation costs and require no additional disclosure of financial information; therefore, they are preferable to external funds. The requirement of additional disclosure that comes with external finance could lead to more severe market discipline and possible loss of competitive advantages. The pecking order theory argues that the availability of internal finance determines the amount and type of external finance used to fund firms' investment and the amount of investment taken.

Therefore, the implication of the pecking order theory is that firms' external finance and the amount of investment spending are the residual of firms' available internal funds. If external funds are required, the safest security is the debt to issue first. Debt will be preferred to equity because equity issues are interpreted by investors as the shares being overvalued and thus investors will discount the share price. Therefore, firms will issue equity only when the profitable projects cannot be postponed, or cannot be financed through debt, or the overvaluation is large enough that the existing shareholders can

tolerate the market penalty in order to gain from the overvaluation. Any internal funds in excess of financing needs will be used to repurchase debt before equity due to adverse selection problems.

Taggart (1985) examines how the US firms establish their own capital structure. The findings reveal that debt financing varies constantly with capital expenditure relative to available internal funds, suggesting that debt only is used to accommodate the desired investment level. The author finds that the capital structure in these firms is determined in response to the need to finance new investment opportunities with available internal funds and concludes that the comparative costs of available financing sources induce firms to use internally generated funds as a first choice before turning to raise funds externally. However, the author argues that when external funds are needed, firms turn firstly to debt funds before using equity funds. Finally, his findings are consistent with the suggestion of pecking order theory which predicts that leverage is negatively related to a firm's profitability.

Kim and Sorensen (1986) examine the impact of growth opportunities on leverage ratios to test Myers' (1977) theory of the agency cost of debt finance. They find that growth opportunity is negatively related to leverage and the relationship observed has been found as significant statistically. However, they concludes that a negative relationship found using tests specified in terms of debt ratio may be manifestation of agency costs of growth, or may simply be due to the distortion induced by growth in firm's cash flows.

Titman and Wessels (1988) show the theoretical determinants of capital structure empirically. The theoretical determinants namely, assets structure, non-debt tax shields,

growth, uniqueness, industry classification, firm size, earnings volatility and profitability are tested to see how they affect the debt-equity choices of the firms. In their study, they used six different measures of financial leverages that includes long-term debt, short-term debt and convertible debt divided by market and book values of equity.

For the purpose of the study, the accounting and financial data of 469 large firms of the United States were collected over the period from 1974 through 1982 from the Annual COMPUSTAT Industrial Files and publications from US department of Labor, Bureau of Labor Statistics. In their study, they use a factor-analytical technique to mitigate the measurement problems encountered when dealing with proxy variables. The results indicate consistencies with theory for the factors affecting capital structure choices of the firms. One of the few interesting conclusions drawn from the study includes the negative relationship between the debt ratio and the uniqueness of the firms. The short-term debt ratio is negatively related to the size of the firms. Besides, a strong negative relationship is noted between debt ratios and past profitability of the firms. However, the study does not find the strong empirical support on variables like non-debt tax shields, volatility, collateral value and growth of the firms.

Barton and Gordon (1988) have suggested that a broader managerial (behavioral) perspective is necessary to fully understand the debt-equity mix at the level of the individual firm. In response to this situation, they propose that a corporate strategy perspective, with its emphasis on managerial choice, may provide a behavioral basis for understanding the capital structure of large US firms at the firm level which is complementary to the traditional finance paradigm at the level of the economy. Five-year time period from 1970 – 1974 is selected for the purpose of the study and data have been

collected from Fortune 500 list of industrial companies. They have taken 279 firms as a sample for the study and use regression equation model to analyze the data. They observe that management of firm with different diversification strategy reacts differently to their financial context when choosing a capital structure. The study supports for the negative relationship between profitability and debt level of firms. The study does not support the reasoning based on the finance paradigm suggesting that the profitable firms should have higher debt level than less profitable ones. There exists reasonable support for the hypothesis of positive relationship between sales growth and debt level. There exists strong relationship between debt level and earning risk. They find no strong relationship between debt level and capital intensity. The relationship between size and debt level is not significant.

Olinear and Rudebusch (1989) point out that new debt issues require a compensation for the dealer placing the issue, and other expenses such as legal, accounting and printing costs, registration fees and taxes. Firms may be forced to incur significant adjustment (transaction) costs when the adjustment requires an increase in the leverage level. However, these costs are at least less likely to be significant when the firm is reducing its leverage ratio. They find that the transaction costs consumed nearly 14% of the proceeds of small debt issues in the USA. Thus, if the adjustment costs constitute major portion of the total costs of changing leverage, firms with leverage out of their target will adjust their leverage only if they are sufficiently far away from the target level of leverage, making the probability of adjustment a positive function of the difference between actual leverage ratio and target leverage ratio. This suggests that the rate of adjustment may

vary depending on whether the observed or actual leverage ratios above or below the target leverage ratio, and on whether the deviation from the target is large or small.

Baskin (1989) provides evidence supporting the suggestion of pecking order theory. The author finds that the pecking order theory is a descriptor of corporate finance behavior in US. The author argues that although bankruptcy costs of debt do restrict the firms' ability to borrow, the supply of debt funds is more elastic than that of equity funds. The study shows the positive association between leverage and past growth and the negative association between leverage and past profitability as evidence supporting the pecking order theory. The study attributes the reasons to the hierarchy behavior in US firms to the transaction costs, information cost, and control considerations.

Most of the studies during 1980s are concerned with whether the trade-off theory and pecking order theory explain the capital structure of the firms and the determinants of capital structure of the firms. They try to find out the major firm specific variables as determinants but the results found are not consistent among the studies. The results of the studies show that no one theory can fully explain the capital structure of the firms.

2.3.3 Review of literatures during 1990s

In this section some major studies conducted during the period of 1990s has been reviewed and presented. Table 2.3 presents the summary of the key findings of those studies considered in this study.

Table 2.3

Summary of key findings of the major studies during 1990s

Study	Key findings
Harris and Raviv (1991)	The leverage increases with fixed assets, non-debt tax shields, investment opportunities, and firm size. By contrast, leverage decreases with volatility, advertising expenditure, probability of bankruptcy,
Fama and French (1992)	The results show that the leverage is significant negative relation with average returns.
Allen (1993)	A significant negative relationship between leverage and profitability supporting the pecking order theory.
Shyam-Sunder and Myers (1994)	The results indicate that the firms planned to finance anticipated deficits with debt. The study suggests that there was a greater confidence in the pecking order than in the target adjustment model.
Singh (1994)	The results are consistent with those in developed countries. The study provides evidence suggesting that capital structure in the developing countries is largely affected by equity timing considerations and the costs of debt financing.
Rajan and Zingales (1995)	Conclude that the size of the firms was positively correlated while the variable profitability is negatively correlated with leverage ratio in all the countries except Germany and at an aggregate level, leverage is fairly similar across the G7 countries.
Jahera and Lloyd (1996)	Reveal that the financial distress costs are not a significant factor in affecting the debt level of the firms.
Krishanan and Moyer (1996)	The firm size and growth as the significant variables in determining the variations in capital structure of firms.
Hussain and Nivorozhkin (1997)	Large and new foreign owned firms and firms with strong cash positions have higher levels of leverage.
Hirota (1999)	Concludes here that the firm specific factors that affect the leverage in the US are also similarly affecting the leverage of Japanese firms irrespective of different economic system.
Wiwattanakantang (1999)	The results indicate that non-debt tax shield, tangibility, profitability and growth appeared significant and as expected sign. These factors are commonly tested in the developed nation and the result appeared similarly in the Thailand dataset.
Liu (1999)	The results indicate that debt ratios are positively related to firm size, asset tangibility and growth rate and negatively related to ownership structure.
Prasad et al. (1999)	The result suggests that firms in developing countries tend to use similar levels of debt to the developed nations.

Harris and Raviv (1991) find the three main hypotheses used to explain differences in capital structure among companies are the transaction-cost hypothesis, the symmetric information hypothesis, and the tax hypothesis. They report that leverage increases with fixed assets, non-debt tax shields, investment opportunities, and firm size. By contrast, leverage decreases with volatility, advertising expenditure, probability of bankruptcy,

profitability, and uniqueness of the product. This consensus of capital structure determinants still hold in simple cross-section analysis.

Fama and French (1992) examine the cross-section of stock returns during the period from 1963 to 1990. They use both market leverage and book leverage in their tests, where market leverage is defined as the log of the ratio of book assets to market equity and book leverage is defines as the log of the ratio of book assets to book equity. The result show that both variables are significantly related to average returns but with opposite signs. The higher market leverage is associated with higher average returns and higher book leverage is associated with lower average returns.

Allen (1993), following Baskin (1989), tests the prediction of pecking order theory in Australian market. The finding supports the prediction where a significant negative relationship between leverage and profitability is found. The author argues that in the presence of asymmetric information and the resulting market misevaluation of equity, firms will avoid equity issuance and turn to debt which is less subject to the adverse selection. The amount of debt needed will be determined as the residual between the desired investment and the supply of retained earnings. The findings are consistent with the pecking order theory.

Shyam-Sunder and Myers (1994) examine the traditional capital structure model and the pecking order model of corporate financing. This study shows that the usual tests of the trade-off model have no implicit power and also questioned whether the available empirical evidence supports the concept of an optimal debt ratio. Many empirical literatures have supported the static trade-off theory and also predict cross-sectional

relationship between average debt ratios and asset risk, profitability, tax status and asset type. These studies show some statistically significant coefficients consistent with the theory. In their study a sample of 157 firms is taken from the year starting from 1971 to 1989. The sample consists of all firms on the Industrial COMPUSTAT files. They claim the pecking order theory is an effective first-order descriptor of corporate financing behavior. A few major findings are; when the two models, pecking order and trade-off theory, are tested, the coefficient and significance of the pecking order variables change hardly at all; but the performance of the target adjustment model's variables degrade. The strong performance of the pecking order does not occur just because firms used unanticipated cash needs with debt in the short run. The results indicate that the firms plan to finance anticipated deficits with debt. The study suggests that there is a greater confidence in the pecking order than in the target adjustment model.

Singh (1994), from emerging markets, finds results consistent with those in developed countries. The study provides evidence suggesting that capital structure in developing countries is largely affected by equity timing considerations and the costs of debt. The author investigates how the top hundred largest listed firms in 10 less developed countries (India, Brazil, Mexico, South Korea, Jordan, Pakistan, Thailand, Malaysia, Turkey, and Zimbabwe) financed their investment during the period 1980-1990. The finding is that the firms in these countries rely heavily on external funds and new share issues to finance the growth of their investment. The main reason is that the relative cost of equity capital fell significantly during the 1980s. Together, with an increase in the cost of debt, equity issues become relatively more attractive for financing the corporate

investment. However, the author emphasizes that these conclusions refer only to large firms in these 10 less developed countries and are unlikely to be valid for smaller firms.

Rajan and Zingales (1995) identify the factors influencing the capital structure of US firms are equally applicable in other countries. In their study, they have taken G7 countries namely, the United States, Japan, Germany, France, the United Kingdom, Italy, and Canada. For the purpose of their study, the required data are collected from the international financial data base called Global Vantage of all the G7 countries. In their study, five different types of financial leverage ratios namely, non-equity liabilities to total assets, debt to total assets, debt to net assets, debt to capital and interest coverage ratio have been measured. From the collected data it appears that the leverage ratios of firms in U.K and Germany are lower as compared to the leverage ratios in the rest of the five countries of G7 and they are fairly similar across the countries. The low leverage in U.K and Germany are well explained by the countries having strongest enforcement of bankruptcy laws.

They also have examined how the institutional factors like tax, bankruptcy law and pattern of ownership explain the cross-country differences in leverage ratios. They have shown that personal taxes may possibly explain the differences in leverage ratios across the countries. They also have claimed that the level of ownership structure as a factor that explain the differences in the leverage ratios across the countries. They try to explain the cross-sectional differences in leverage ratios within the countries based on the four determining factors, tangibility of assets, the market value to book value of equity ratio (as proxy of growth), firm size, and profitability. A cross-sectional regression model has been developed with four of the above mentioned factors as independent variables to

explain the leverage ratio. The analysis show that the asset tangibility is positively correlated with leverage for all the countries considered which is consistence with theory as the firms having more tangible fixed assets in their assets mix will use that as collateral to get more debt. The negative relationship is found for the variable market to book value ratio in all the countries except in Italy. It seems firms having high market value of stocks would enable to issue more equity not seeking for debt. Size of the firms is positively correlated while the variable profitability is negatively correlated with leverage ratio in all the countries except Germany. They conclude that at an aggregate level, leverage is fairly similar across the G7 countries.

Jahera and Lloyd (1996) examine the determinants of corporate debt levels on US corporations. Financial distress is one of the seven variables that have been tested in their study to see the effect on leverage. The data are taken from the COMPUSTAT file from 1982 till 1985. Financial distress is measured by the coefficient of variation of earnings before interest and taxes. The pooled cross regression time series analyses reveal that financial distress (or business risk as what the authors termed as in their studies) is not a significant factor in affecting the debt level.

Krishanan and Moyer (1996) test the determinants of capital structure of large firms of industrialized countries apart from U.S alone. The data have been collected from the firms having total assets of over 5 billion dollars. The sample of 283 firms has been selected for their study consisting of 96 firms from U.S, 71 firms from Japan, 25 firms from U.K, 22 firms from Germany, 22 firms from France and 47 firms from other countries. To examine the determinants of capital structure, they use regression analysis technique and find that firms from Germany have lower leverage ratio than U.S firms but

firms from Italy have relatively higher leverage ratio compared to U.S firms. Because of close ties between Japanese firms and bank, firms in Japan are found to use more short-term debt than long-term debt and the long-term debt ratio for Japanese firms appeared to be smaller than others. It is evidenced from the study that the variables affecting the debt ratios in U.S firms are also similarly affecting the firms in other countries under the study. In addition, the variable profitability is observed as major determinant of leverage. The variables firm size and growth are also found to be significant variables determining the variations in capital structure of firms.

Hussain and Nivorozhkin (1997) identify the capital structure choice of listed firms in Poland using the firm level panel data. The firms in Poland generally have very low leverage levels due to reluctance of banks to grant loan to old and risky firms and the growing of equity market there. Therefore, they attempt to find out the factors a firm has in order to get more leverage or higher leverage. To answer their question, eight firm specific factors have been examined, namely ownership structure, dividend policy, asset characteristics, firm size, profitability, age, taxes and cash positions. The results indicate that large and new foreign owned firms and firms with strong cash positions have higher levels of leverage. The age factor indicates that the old firms enjoy on stock market for financing. Except for age, other factors examined appeared as expected.

Hirota (1999) studies the corporate capital structure decisions in Japan as Japanese firms may have unique financing behavior and differ from that of US firms. According to the author, the goals of Japanese firms are to achieve growth and not profit as can be seen in the US firms. The author examines both firm specific factors and institutional and regulatory features of Japanese financial markets in affecting the corporate financing

decision in Japan. Altogether, about 500 firms are examined in 1977, 1982, 1987 and 1992 using cross sectional regressions with the ratio of total debt to capital as dependent variable.

The six important independent firm specific variables used in this study includes taxes, types of assets, investment opportunities, uncertainty of operating income, profitability and firm size. The four characteristics of Japanese markets that are also studied here include bank relationships, Keiretsu membership or large industrial groups, regulatory of new equity issues and cash flow based financing. The results show that all the firm specific factors appeared significant and conform to the predicted sign as non-debt tax shield, advertising & research and development costs, growth opportunities, business risk and profitability appeared negatively related to leverage while asset tangibility and firm size appeared positively related to leverage. The author concludes here that the firm specific factors that affecting the leverage in the US are also similarly affecting the leverage of Japanese firms irrespective of different economic system.

Wiwattanakantang (1999) attempts a study on the determinants of the capital structure of Thai firms. A sample of 270 listed firms in the stock exchange of Thailand in 1996 has been extracted for the purpose of this study. Altogether 10 industries are examined and they have been represented by ten industry dummy variables. The other independent variables examined in this study includes, non-debt tax shield, tangibility, profitability, business risk and firm size. Agency costs variable such as type of firms, family-owned, conglomerate groups, foreign owned firms, state owned firms are represented by dummy variables. The age of the firm is used as proxy for firm's reputation variable. The firm size is represented by the logarithm of the number of directors while managerial

ownership is measured by the percentage of shares held by the CEOs and the percentage of shares held by directors. Two leverage ratios are used as depend variable, namely the book value of total debt over total assets and the market value of leverage, which is the book value of total debt divided by the book value of total liabilities plus market value of total equity. The results indicate that non-debt tax shield, tangibility, profitability and growth appeared significant with expected sign. These factors are commonly tested in the developed nation and the result appeared found to be similar in the Thailand dataset. Besides that, single family owned firms have higher debt levels compared to other type of firms. The managerial ownership appeared positively and significantly related to leverage for both the directors and CEO involvement. Age of the firm has no significant impact on the debt equity choice of firms in Thailand.

Liu (1999) examines on determinants of corporate capital structure of the firms from listed companies in China between 1992 and 1997. Using the OLS regression, the long-term debt ratio is examined to see whether there exists any relationship with industry classifications, firm size, proportion of tangible assets, profitability, growth rate of assets and ownership concentration. The results indicate that debt ratio are positively related to firm size, asset tangibility and growth rate and negatively related to ownership structure.

Prasad et al. (1999) examine a comparative study of capital structure of Indian firms with the firms of developing European and Asian countries. The author hypothesizes that there are no differences on the debt level of firms from either Asia or Europe. For the purpose of this study, the capital structures of firms in India are compared with 5 other developing countries in Asia namely, Malaysia, Singapore, Thailand, Hong Kong and South Korea and with 3 other developing countries of Europe that includes Greece, Portugal and

Spain. The nonparametric test is conducted to analyze the data. The result suggests that firms in developing countries tend to use similar levels of debt to the developed nations.

The major studies during 1990s are concerned with the test of capital structure theories and determinants of capital structure in both developed and developing countries. The theories of capital structure do not give definitive answers to everyday questions about how firms should be financed. The results of the studies relating to two models, pecking order and trade-off theory, the coefficient and significance of the pecking order variables change hardly at all; but the performance of the target adjustment model's variables degrade. The results indicate that the firms plan to finance anticipated deficits with debt. The studies suggest that there is a greater confidence in the pecking order than in the target adjustment model. Based on the review of capital structure, one conclusion is that there are some common findings and answers to questions about what determines capital structure choice and how firms develop their capital structure over time. A simple question from practitioners as to whether their firms are overleveraged or underleveraged can be answered by a target debt ratio prediction.

2.3.4 Review of literatures during 2000s

This section deals with the review of the major studies that have been conducted recently during 2000s. Table 2.4 presents the summary of the major studies conducted during the period of 2000s.

Table 2.4

Summary of key findings of the some major recent studies during 2000s

Study	Key findings
Chirinko and Singha (2000)	Argue that the coefficient of deficit regressed on the net change in total debt in the Shyam-Sunder and Myers (1999) model should be close to one is neither a necessary nor a sufficient condition for the pecking order theory to be valid and their explanation implies that finding a coefficient near one would not disprove trade-off theory.
Chen (2000)	The results indicate that firm size, corporate tax, research and development costs, earnings variability and cost variability are positively related to leverage. The positive sign for corporate tax is a surprised result as it is predicted to be negative.
Chen and Jiang (2001)	The results of the study indicate that provisions, assets tangibility, firm size, and financial flexibility as significant while growth, profitability, volatility, and industry dummy found to be least significant factors in explaining the capital structure choices of Dutch firms. Provision ratios and financial flexibility found to be negatively related to leverage with all the leverage ratios used in this study. Firm size is positively related to long term debt and insignificant to other leverage measures.
Devic and Krstic (2001)	the results show that firm size as the most important determinant for Poland while profitability appeared to be the most significant factor in explaining the leverage for Hungary.
Miguel and Pindado (2001)	The results indicate that the non-debt tax shields and financial distress costs are negatively related to leverage. A negative relationship is also noted between cash flow and leverage in the presence of asymmetric information. As a whole, these results are in line with the pecking order theory and free cash flow theory.
Booth et al. (2001)	Conclude that the variables that explained the capital structures in developed nations were also relevant in the developing countries irrespective of differences in institutional factors across these developing nations. The same types of variables, which affect developed nations, were significant in developing nations too.
Graham and Harvey (2001)	The findings of this study indicate that there is either a problem with the theories or that practitioners are ignoring them. This study however, infers that the reason for these discrepancies may be that no one theory is good enough and that these theories are complementary rather than competing.
Bhaduri (2002)	The study indicates that when the firms have more unique products, it will be difficult for them to borrow. The measure of profitability or cash flow factor seem to be significant for the short-term and total borrowings but not for long-term borrowings. The asset structure turns out to be surprising as it shows that there is no association between fixed assets and short-term borrowings as theory recommends that they do with collateral argument.
Baker and Wurgler (2002)	The results of the study are consistent with the hypothesis that market timing has a large and persistent effect on the capital structure. The main finding of this study is that low leverage firms are those that raised funds when their market values are high, as measured by the market-to-book ratio and high leverage firms are those that raised funds when their market values are low.
Adedeji (2002)	The result shows that new debt issues does not have a one-to-one relationship with firms financing deficit as pecking order theory suggests where new debt issues financed only 22 percent of financing deficit.
Antoniou et al. (2002)	Leverage is positively affected by the size of the firm for all the three countries. Market to book ratio, term structure of interest rate and share price performance as expected appears to be negatively related to leverage.
Frank and Goyal (2003)	The study concludes that the pecking order theory is a competitor to the conventional leverage regressions but the financing deficit adds a small amount of extra explanatory power. Even the financing deficit does not challenge the role of the conventional leverage factors.

Byoun and Rhim (2003)	Find that pecking order theory to be much more binding force for small firms and non-dividend paying firms, supporting the hypothesis that small firms are more likely to follow the pecking order because of the difficulty in accessing external financing sources.
Drobetz and Fix (2003)	Indicates that asset tangibility, firm size and R&D expenditure are positively related to leverage while profitability, growth opportunities and volatility appeared to be negatively related to leverage. Non-debt tax shield has been found as statistically insignificant determinant of the leverage of the firms.
Cai and Ghosh (2003)	Their explanation is that when a firm's debt level reaches a significantly high level (above the mean), the large bankruptcy and agency costs of leverage make the reduction of the debt capital, while a firm whose debt level is below the average debt level of the industry does not put consideration of debt level as its first priority.
Benito (2003)	The author finds that debt varies negatively with profitability and positively with investment.
Bhole and Mahakud (2004)	From the trend of leverage ratios, they find that public limited companies are more dependent on debt compared to private limited companies. From the industry variations, they note that among the industries having higher debt ratios include shipping, electricity generation and supply, paper, cement, textiles and sugar while aluminum industry recorded a declining trend in debt usage.
Bancel and Mittoo (2004)	Their findings show that the major determinants of capital structure within European firms are similar to those of US firms.
Fauzias and Bany (2005)	Find that non-debt tax shield appeared negatively related to leverage, as predicted by the theory. Tangibility and firm size found to be positively related to leverage while profitability and growth opportunity evidence significant negative relationship with leverage supporting pecking order.
Leary and Roberts (2005)	The study find that firms may have a target leverage ratio but still follow the pecking order theory, suggesting that adjustment toward the target leverage ratio may take place in a way consistent with the suggestion of pecking order theory.
Pardon et al. (2005)	The results indicate that only the firm reputation (age of firm) seems to be insignificant. As expected, size and the level of warrants show a positive relation with leverage.
Tong and Green (2005)	The results provide a support for the pecking order hypothesis and demonstrate that a conventional model of corporate capital structure could explain the financing behavior of Chinese companies.
Beattie et al (2006)	Many of the theoretical determinants of debt levels are widely accepted by respondents, in particular the importance of interest tax shield, financial distress, agency costs and also, at least implicitly, information asymmetry.
Gaud et al. (2006)	The fact learned from this study is that profitable firms prefer increasing dividends rather than decreasing debt levels which supports the agency cost theory of capital structure.
Flannery and Rangan (2006)	Claim that the effects of pecking order considerations on the capital structure are swapped by reversion toward firm specific target leverage.
Cheng and Shiu (2007)	The better the GDP of the countries, the lower are the leverages and inflation has negative impact on leverage. Finally, the impact of taxes suggests that the firms with higher corporate taxes use more debt than firm with lower corporate taxes.
Byoun (2008)	The study provides evidence that most adjustments occur when firms have above target debt with a financial surplus. The speed of adjustments for firms with financial deficits is lower than those with financial surplus, suggesting that firms with financial deficit are more risky than firms with financial surplus.
Vasiliou and Daskalakis (2009)	They find the Greek finance managers seem to care more about the disadvantages of debt instead of exploiting debt capital and cost of financial distress, market timing and competitiveness are more important factors determining the capital structure of Greek firms.

Chirinko and Singha (2000) argue that the coefficient of deficit regressed on the net change in total debt should be close to one is neither a necessary nor a sufficient condition for the pecking order theory to be valid. Therefore, they question the interpretation of Shyam-Sunder and Myers (1999) regression test. They claim that the slope coefficient could fall well short of unity when the pecking order theory holds and be close to unity when it does not. This is because equity issues may create a degree of positive and negative bias in the Shyam-Sunder and Myers' test. They show that the predicted regression coefficient of deficit is actually 0.74 rather than one for the firms that actually follow the pecking order theory, but they issue an empirically observed amount of equity. This amount of bias is not trivial, but it still leaves the coefficients very far from the magnitudes of slope coefficients that are observed. Furthermore, their explanation implies that finding a coefficient near one would not disprove trade-off theory.

Chen (2000) investigates the association between firm characteristic and the capital structure decision in high technology companies. For the purpose of the study, Chen examines 17 high tech industries in Taiwan. High tech companies are studied as they are in financial environment that cannot be reflected by its characteristics such as rapid growth, competition, technological innovation and research and development costs. The factors examined by Chen includes managerial ownership, growth opportunities, research and development costs, firm size, earnings variability, profitability, cost variability, depreciation tax shield, cash flow variability, corporate tax shield and dividend payment. The results indicate that firm size, corporate tax, research and development costs, earnings variability and cost variability are positively related to leverage. The positive

sign for corporate tax is a surprised result as it is predicted to be negative. The other factors explaining the debt ratio appeared insignificant in his study.

Chen and Jiang (2001) examine the determinants of capital structure choice in Dutch firms. They use the structural equation modeling technique. Besides the industry dummy variables, seven different variables namely, assets tangibility, firm size, growth opportunity, profitability, earnings volatility, and flexibility, are tested to examine the effect on debt ratio. In their study, four measures of capital structure are examined which includes long-term debt divided by book value of total capital assets, short-term debt divided by book value of total capital assets, market value of tong-term debt divided by market value of total capital assets and market value of total short-term debt divided by total market value capital assets.

They have developed two models, a structural model that explains the relationship between capital structure and the independent factors and a measurement model which indicate the relationship between the factors and various proxy variables. Their study uses the application of LISREL system developed by Joreskog and Sorbon (1981). The results of the study indicate that provisions, assets tangibility, firm size, and financial flexibility as significant while growth, profitability, volatility, and industry dummy found to be least significant factors in explaining the capital structure choices of Dutch firms. Provision ratios and financial flexibility found to be negatively related to leverage with all the leverage ratios used in this study. Firm size is positively related to long term debt and insignificant to other leverage measures.

Devic and Krstic (2001) show that firm size as the most important determinant for Poland while profitability appeared to be the most significant factor in explaining the leverage for Hungary. In the literatures relating to capital structure of developed countries mostly covered the United States, the United Kingdom, Japan Germany, France Italy, Canada, Switzerland, Holland, and Spain. They examine the factors affecting the leverage of the firms based of the four firm specific factors namely firm size, profitability, growth opportunities and asset tangibility. They define the variable profitability as sum of profit before interest and taxes and depreciation to net sales. The assets tangibility as the ratio of tangible fixed assets to total assets, the firm size as the natural logarithm of annual sales, and the growth opportunity as the ratio of market value of equity to the book value of equity.

The required financial data for the study has been extracted from Excel database. In order to examine the effect of selected variables in leverage, 20 listed firms from Hungary and 18 listed firms from Poland are used. They use the regression analysis and the results show that firm size as the most important determinant for Poland while profitability appeared to be the most significant factor in explaining the leverage for Hungary.

Miguel and Pindado (2001) show some new evidences on the corporate capital structure relating to firm specific factors and institutional characteristics. Among the factors considered in this research include tax aspects, agency cost problems, financial distress and interdependent between investment and debt. The financial data of companies are gathered from the Security Exchange Commission while the market values of equity are extracted from the Stock Exchange Official Daily List. Altogether 133 companies from 10 industries between 1990 and 1997 are analyzed. The results indicate that the non-debt

tax shields and financial distress costs are negatively related to leverage. A negative relationship is also noted between cash flow and leverage in the presence of asymmetric information. As a whole, these results are in line with the pecking order theory and free cash flow theory.

Booth et al. (2001) conduct the study to see whether the capital structure theories developed in developed countries could also be applicable in the developing countries irrespective of different institutional structures. Among the various objectives of the study, one objective is to see whether the corporate financial leverage decisions differ significantly between developing and developed countries and whether the factors affecting the cross-sectional variability in individual countries' capital structures is similar between developed and developing countries. The objective of the study is to predict whether the conventional capital structure models could be improved by knowing the nationality of the company. The readily available abbreviated balance sheets and income statements are collected by the researchers from the International Finance Corporations (IFC) for the largest companies in 10 developing countries, namely; India, Pakistan, Thailand, Malaysia, Turkey, Zimbabwe, Mexico, Brazil, Jordan and Korea. Besides financial statements, the stock prices for a maximum of the 100 largest publicly traded firms in each country are also collected for a period from 1980 to 1991.

Three main important ratios namely, the total debt ratios, long-term book-debt ratios and long-term market-debt ratios are calculated from the data collected. Besides, several other variables were calculated and analyzed to explain capital structure determinants by considering the impact of taxes, agency conflicts, financial distress and the impact of informational asymmetries. The variables mentioned include tax rates, business risk

(measured as standard deviations of the return on assets), asset tangibility, natural logarithm of sales[given as size of currency (in local & dollar terms)], return on assets, and market-to-book ratio. A basic cross regression model of three different measures of firm's debt ratio against those variables are developed.

From their analysis, the authors have concluded that the variables that explained the capital structures in developed nations are also relevant in the developing countries irrespective of differences in institutional factors across these developing nations. The same types of variables, which affect developed nations, are also significant in developing nations. However, they have identified some systematic differences in the leverage of GDP growth rates, inflation rates and the development of capital markets. The research is also consistent with the pecking-order hypothesis and the existence of significant information asymmetries. This research supports the argument of asset tangibility in financing decisions which indicates that firm's long-term debt ratio increases while total-debt ratio decreases as more tangible the asset mix becomes. It is interesting to note that the estimated empirical average tax rate does not affect the financing decisions. The study also indicates that knowing the nationality of the firm is at least important as knowing the size of independent variables for both the total and long-term book debt ratios. The authors have outlined their recommendation for further studies or research in this area with an increase in the quality international database. They also suggest that a theoretical model to be developed to study the direct link between profitability and capital structure choices. Most of the researchers conclude that the factors affecting the developed countries also explain the capital structure decisions in the developing nations.

An important contribution to the survey approach is by Graham and Harvey (2001), which won the Jensen prize for the best paper in corporate finance in 2001, examined the implications of different capital structure theories through a survey of US managers and find that executives rely heavily on practical and informal rules when choosing capital structure. They observe moderate support that firms follow the trade-off theory and target their debt ratios. They also find some support for the pecking-order theory. Their results show that firms value financial flexibility but its importance is not related to information asymmetry or growth options in the manner predicted by the pecking order theory. They find little evidence that other factors including agency costs, signaling, asset substitution, free cash flow and product market concerns affect capital structure choice. They also report that managers use many informal criteria, such as credit rating and earnings per share dilution, in making their financing decisions. Graham and Harvey indicate that there is either a problem with the theories or that practitioners are ignoring them. This study however, infers that the reason for these discrepancies may be that no one theory is good enough and that these theories are complementary rather than competing.

Bhaduri (2002) attempts to study the capital structure decision in developing countries by taking the Indian corporate sector as the main focus. The balance sheets from 1989 till 1995 from 363 manufacturing firms in India with nine types of industries are collected from the Centre for Monitoring Indian Economy (CMIE) database. Three measures of leverages that are calculated include total borrowing to asset ratio, long-term borrowing to asset ratio and short-term borrowing to asset ratio. Due to limitation of data, only book value has been used to measure all the variables.

The factors include asset structure, non-debt tax shield, firm size, financial distress, growth, profitability, age, signaling and uniqueness. Ratio of land and building to total assets, ratio of plant & equipment to total assets and ratio of inventories to total assets are used as proxies for asset structures. A ratio of change in accumulated depreciation to net operating income is used as proxy for non-debt tax shield of a firm. To determine the firm size, logarithm of total assets is used as proxy.

Since the firms with volatile income likely to be less leveraged, two measurements are derived to measure volatility; probability of financial distress and standard deviation of percentage change in operating income multiplied by probability of financial distress. The study uses the ratio of capital expenditure over total assets and growth of total assets as proxies to measure growth. Profitability is measured from the ratio of cash flow over total assets and the ratio of cash flow over sales. To measure age, value of one is taken for firms below the age of 20 and zero for otherwise. To capture signaling factors, the ratio of dividend payment to net operating income is calculated. Finally, product uniqueness has been measured using the ratio of R&D to sales and the ratio of selling expenses to sales. From the analysis, it is interesting to note that firms with large size depend more on the long-term borrowing while the small firms depend more on short-term borrowings.

Firms with high growth opportunities would like to increase their long-term debt taking capacity. It is also proved from the study that when the firms have more unique products it will be difficult for them to borrow. The profitability seems to be significant for the short-term and total borrowings but not with long-term borrowing. The asset structure

turn out to be surprising as it show that there is no association between fixed assets and short-term borrowings as theory recommends that they do with collateral argument.

Baker and Wurgler (2002) discuss on the capital structure of the firms with reference to market timing. In corporate finance, equity market timing refers to the practice of issuing shares at high prices and repurchasing at low prices. In practice, equity market timing appears to be an important aspect of real corporate financial policy. In addition to this, several empirical evidences have shown that firms tend to issue equity instead of debt when market value is high, relative to book values and past market values, and tend to repurchase equity when market value is low. The study is based on the data from COMPUSTAT data base and firms appearing at any point between 1968 and 1999 have been included for their study. They restrict the sample for which they could determine an IPO (Initial Public Offering) from 1968 to 1998.

The main focus of their study is on market-to-book ratio as determinant of annual changes in the leverage of the firms. But to round out a benchmark set of control variables, they also use three other variables that Rajan and Zingales (1995) found to be correlated to leverage in several developed countries. They are asset tangibility, profitability, and firm size. The authors are of opinion that tangible assets may be used as collateral and so may be associated with higher leverage. Asset tangibility had been defined as net plant, property, and equipment divided by total assets and expressed in percentage. Profitability is associated with the availability of internal funds and thus may be associated with less leverage under the pecking order theory. Profitability had been defined as earnings before interest, taxes, and depreciation divided by total assets and expressed in percentage. Size of the firms measured as the log of net sales. To measure

the effect of all these explanatory variables on changes in the leverage of the firms, the regression model has been used.

The results of the study are consistent with the hypothesis that market timing has a large and persistent effect on the capital structure. The main finding of this study is that low leverage firms are those that raised funds when their market values are high, as measured by the market-to-book ratio and high leverage firms are those that raised funds when their market values are low.

Adedeji (2002), using Shyam-Sunder and Myers (1999), tests the prediction of pecking order theory in the UK market. The result shows that new debt issues does not have a one-to-one relationship with firms financing deficit as pecking order theory suggests where new debt issues financed only 22 percent of financing deficit. The author retests the pecking order model by considering only the positive values of financial deficit in the regression and sets the negative values equal to zero (the new variable is named as the adjusted deficit variable). The author argues that these amounts are not internal funds deficits or requirements for external finance to be covered by issuing debt. The results show that excluding the negative values (surplus amounts) from the deficit variable increased the estimated coefficient on the deficit variable from 22 percent to 39 percent, implying that including negative values can reduce the effect of deficit variable on the dependent variable which is the change in total debt level.

Antoniou et al. (2002) indicate the determinants of corporate capital structure of European countries. The firms from the UK, France and Germany for the period from 1969 till 2000 are analyzed. In their study, the independent variables are both firm

specific, institutional and macroeconomic variables. Among the independent variables examined in the autoregressive distributed-lag model are profitability ratio, effective tax rate, market to book ratio, fixed assets ratio, size of the firm, liquidity ratio, earnings volatility, market equity premium, term structure of interest rates and changes in share prices. Profitability is measured by the ratio of operating income to total assets. Effective tax rate is measured by the ratio of total tax to total taxable income of the firm. Market to book ratio is given by market value of equity to book value of total assets. Fixed assets are defined as the ratio of net tangible assets to total assets. The proxies for firm size are the logarithm of total assets and logarithm of total sales. Liquidity is given by the ratio of current asset to current liabilities. Equity premium is measured by the cost of equity in relation to the return on risk free investment. Term structure of interest rates is measured by a six-month lag of interest rates. Annual stock price changes are used to represent share market performance. Firstly, the results show that firms adjusted their leverage ratios to achieve their target capital structure and this complied with the static trade-off theory of capital structure.

Leverage is positively affected by the size of the firm for all the three countries. Market to book ratio, term structure of interest rate and share price performance as expected appears to be negatively related to leverage. When the interest rate is high, firms generally useless debt and when share price decline or when lower stock performance experience by the firms, they tend to use more debt until the stock price signal good rise. Inverse relations are noted between profitability and market to book ratio with leverage in France and the UK respectively. Tangibility of assets with leverage appeared positive in Germany, insignificant in France and negative in the UK. This suggests that asset

tangibility is an important element for borrowing in Germany. Liquidity and volatility in earnings appeared insignificant in affecting leverage in Germany, France and the UK.

Frank and Goyal (2003) examine the theory where they test the pecking order theory of corporate leverage on a broad cross-section of publicly traded American firms for 1971 to 1998. In this study, they study the extent the of pecking order theory of capital structure in providing a satisfactory account of the financing behavior of publicly traded companies. They have considered three elements here in this research. First, they provide the evidence about the broad patterns of financing activity. This provides the empirical context for the more formal regression tests. It also serves as a check on the significance of external finance and equity issues. Second, they have examined a number of implications of the pecking order in the context of Shyam- Sunder and Myers' (1999) regression tests. Finally, they have checked to see whether the pecking order theory receives greater support among firms that face particularly severe adverse selection problems. It has been suggested that the pecking order hypothesis must be true empirically. This is because it is well known that to a first approximation, firms do not issue much equity after the IPO. If equity issues are known to be zero, the financing deficit must be equal to the debt issue. However the first approximation to an accounting identity is misleading. Much more equity is issued than is sometimes recognized. It can be found on the basis of the research that in contrast to what is often suggested, internal financing is not sufficient to cover investment spending on average. External financing is heavily used. Debt financing does not dominate equity financing in magnitude. Net equity issues track the financing deficit quite closely, while net debt does not do so. The current portion of long-term debt is not treated as part of the financing deficit. These facts

are surprising from the perspective of the pecking order theory. The pecking order theory is a competitor to the conventional leverage regressions but the financing deficit adds a small amount of extra explanatory power. Even the financing deficit does not challenge the role of the conventional leverage factors. When narrower samples of firms are considered the greatest support for the pecking order is found among large firms in earlier years. Over time, support for the pecking order declines for two reasons. More small firms are publicly traded during the 1980s and 1990s than during the 1970s. The researchers have even concluded that since small firms do not follow the pecking order, the overall average moves further from the pecking order. However, the time period effect is not entirely due to more small firms in the 1990s. Even when attention is restricted to the largest quartile of firms, support for the pecking order theory declines over time. Equity becomes more important. Many aspects of the evidence pose serious problems for the pecking order. But this does not mean that the information contained in the financing deficit is completely irrelevant. The components of the financing deficit appear factored in to some degree, particularly by large firms, when they adjust their leverage.

Byoun and Rhim (2003) examine the explanatory power of pecking order theory. They consider the financial data from the period of 1981 to 2000 for the firms listed in COMPUSTAT database. Financial firms as well as regulated utilities are excluded from the sample because these firms have very different capital structures and the financing decisions of these firms may not convey the same information as for non financial and non regulated firms. Thus the total of 1236 firms is taken into consideration for the period of 11 years. They find that the difference between the target debt ratio and actual debt

ratio is an important determinant of the change in debt level. The results suggest that firms adjust their debt levels according to target debt ratios but the upward adjustment of the debt ratio is much less sensitive to the deviation from the target ratio, reflecting higher adjustment costs for debt increasing than decreasing. The pecking order model also captured a significant portion of variations in debt ratio. When the authors allow different slopes for positive and negative financial deficit, the results suggest that firms use financial surplus to pay back their outstanding debt but the change in debt level is much less responsive to their financing needs. Firms appear to consider both long-term and total debt levels in marking their optimal capital structure decisions. The researchers also compare the pecking order model and the tradeoff target adjustment model between small and large firms and also between non-dividend and positive-dividend paying firms. The pecking order is found to be much more binding force for small firms and non-dividend paying firms, supporting the hypothesis that small firms are more likely to follow the pecking order because of the difficulty in accessing external financing sources.

Drobetz and Fix (2003) examine on capital structure choice in Switzerland. Altogether 124 Swiss firms listed in the Swiss Stock Exchange (SWX) are sampled in their study. Unlike the previous studies, leverage is defined in four different ways namely, the ratio of total liabilities to total assets, ratio of total debt to total assets, ratio of total debt to total assets and the ratio of total debt to capital. The independent variables examine in study include asset tangibility, firm size, growth opportunities, profitability, volatility, non-debt tax shield and product uniqueness. Asset tangibility is given by the ratio of fixed assets to total assets, firm size is measured by the natural logarithm of net sales and the growth opportunity is represented by the ratio of book to market equity. Two proxies are applied

to represent profitability and they include the ratio of operating income over total assets and the ratio of operating income over sales. Volatility is measured by the standard deviation of the first difference in annual earnings, scaled by the average value of the firm's total assets over time. Non-debt tax shield is given by the ratio of total depreciation over total assets and the ratio of depreciation over operating profit. Product uniqueness is represented by research and development expenditure. The cross sectional regression analysis has been used and indicates that asset tangibility, firm size and R&D expenditure are positively related to leverage while profitability, growth opportunities and volatility appeared to be negatively related to leverage. Non-debt tax shield has been found as statistically insignificant determinant of the leverage of the firms.

Using data of small and large US companies, Mayer and Sussman (2003) provide evidence consistent with both trade-off theory and pecking order theory. At the same time, they find that large firms fund large investment projects with debt while small firms tend to use equity. They argue that funding large projects shift firms away from their prior levels of leverage which is consistent with the implication of pecking order approach where capital structure responds to their investment financing needs. They find little impact of the previous levels of leverage on a firm's financing patterns, where firms give the priority to debt over equity when external funds are needed. Furthermore, the profitable large firms prefer debt to equity and increase debt according to their financing requirements. Although they find that new equity issues are generally associated with loss-making small firms, they also find that when both small and large firms encounter losses and debt would take them to the dangerous levels of leverage, issuing equity would be their financing choice.

This result is in the line with Myers (2001) who contends that equity issues occur only when debt is costly. Finally they argue that firms revert to their previous levels of leverage in the long run consistent with predictions of static-trade-off-theory. Therefore, they conclude that the combination of trade-off and pecking order theories provide a good description of firms financing behavior in the short run and longer run dynamics.

Cai and Ghosh (2003) argue that by assuming the goal of the firm is to maximize the value, the firm must adjust its leverage upward when its leverage ratio is below the optimal leverage ratio and it must reduce its leverage ratio when it is above the optimal ratio. They propose an answer to the question "why does a firm adjust its debt level toward the industry mean when it is above the mean, while it is indifferent to revert to target when it is below that target or mean?" Their explanation is that when a firm's debt level reaches a significantly high level (above the mean), the large bankruptcy and agency costs of leverage make the reduction of the debt capital, while a firm whose debt level is below the average debt level of the industry does not put consideration of debt level as its first priority.

However, these predictions are not empirically tested. The dynamic capital structure has assumed that these costs are symmetric. In reality, the significance of these costs may not necessarily be symmetric or identical for firms: i.e., firms with below-target leverage ratio may benefit (tax benefit) from increasing leverage, however it is not as critical that they revert to their target as for those with above-target leverage ratio. This is because of the probability of bankruptcy increases with leverage. It is increasing at an increasing rate as firms move above their target level of leverage, while for those with leverage below their target leverage ratio, the marginal tax savings decline as a firm moves up to match it

target level for the same reason. Moreover, leverage expansions may be constrained by the availability of debt at attractive rates and also by borrowing constraints such as bankruptcy and agency risks.

Using data from UK and Spanish markets, Benito (2003) examines the propensity of affirm to issue debt and equity as a function of its financial characteristics such as cash flow and investment. Benito contends that a higher cash flow firms tend to use low levels of debt while the higher investment level will increase its need for debt funds. The results have revealed that debt is largely responsive to cash flow and investment as pecking order theory suggests in both countries. The author finds that debt varies negatively with profitability and positively with investment. Although the UK and Spain follow different financial systems (market-based system in UK and bank-base system in Spain), the behavior of UK and Spain firms is consistent with the existence of hierarchy of finance. Therefore, Benito concludes that the results for both the countries are in the line with pecking order theory over the trade-off theory.

Bhole and Mahakud (2004) conduct the study using the panel data analysis. In this study, the changes in capital structure of both public limited companies and private limited companies are examined for a trend period, 1984-85 to 1999-2000, 1984-85 to 1991-92 and 1992-93 to 1999-2000. Four ratios are used to measure capital structure namely, long-term debt to equity, total borrowings to equity, total borrowings to total liabilities and long-term borrowings to short-term borrowings. The trend in corporate capital structure in India has also been examined by 13different classes of industries. Apart from that, major determinants of capital structure have also been examined to see the relationship between capital structure which includes, cost of borrowing, cost of equity,

size of the firms, profitability, growth of the firms, collateral value of assets, liquidity and non-debt tax shields.

From the trend of leverage ratios, they find that public limited companies are more dependent on debt compared to private limited companies. From the industry variations, they note that among the industries having higher debt ratios include shipping, electricity generation and supply, paper, cement, textiles and sugar while aluminum industry recorded a declining trend in debt usage. The final part of the study shows that cost of borrowing, profitability, liquidity and non-debt tax shield are negatively related to leverage while cost of equity, firm size, growth and collateral value reveal a positive association with leverage. In terms of significance, only firm size and liquidity appeared significant determinants for all the three periods in the corporate capital structure of India. Other determinants appeared significant only in one or two periods from the three periods under study.

Replicating Graham and Harvey's (2001) approach, Bancel and Mittoo (2004) through survey in 16 European countries raising the questions on the determinants of capital structure, examine whether European and US managers' views on capital structure are driven by similar factors. They find that financial flexibility, credit rating and earnings per share dilution are primary concerns of managers in issuing debt and common stock. The study also finds that although a country's legal environment is an important determinant of debt policy, it plays a minimal role in common stock policy. Their findings conclude that financing policies of the firms are influenced by both their institutional environment. They also find evidence of market timing within European firms. European managers try to time the window of opportunities in order to raise the

capital. They also find mediate support for trade-off theory and weak support for pecking order theory of capital structure. Their findings show that the major determinants of capital structure within European firms are similar to those of US firms.

Fauzias and Bany (2005) examine pyramiding structure of ownership to see the impact on firm's capital structure decision in Malaysia. Pyramiding or Pyramidal ownership structure is an entity (or group of companies) whose ownership structure displays a top-down chain of control starting with an ultimate owner with successive lower layers of firms. The result of this ownership structure is divergence of cash flow rights from control rights in the hand of the largest shareholders. The study has aimed at Malaysian listed distress companies which have failed to comply with the obligations set under Malaysian practice that cause them to be delisted or suspended from trading. With regression analysis, they confirm that the separation of cash flow rights and control rights increases leverage of the distressed Malaysian firms. This study also provides additional evidence on other control factors that are linked to leverage. The non-debt tax shield appeared negatively related to leverage. Tangibility and firm size found to be positively related to leverage while profitability and growth opportunity evidence significant negative relationship with leverage.

Leary and Roberts (2005) provide evidence suggesting that information asymmetry costs are an important determinant in the financing decision of the US firms that follow a dynamic re-balancing strategy. They find that US firms are less likely to use external capital when they have sufficient internal funds, but are more likely to use it when they have large investment needs. Therefore, they conclude that firms may have target leverage ratio and still prefer internal over external funds. However, they find that US

firms are more likely to increase (decrease) leverage if their leverage is relatively low (high). Moreover, they find that highly levered firms tend to reduce their book leverage in the following year. They find that firms may have a target leverage ratio but still follow the pecking order theory, suggesting that adjustment toward the target leverage ratio may take place in a way consistent with the suggestion of pecking order theory.

Pardon et al. (2005) examine 65 non-financial listed corporations in the Spanish Stock Exchange from 1990 till1999. Six factors are examined empirically to see their influence on capital structure namely, firm size, generated resources, level of warrants, cost of debt, growth opportunities, and age of the firms. Generated resource is measured by the company's profit plus depreciation charges over its total liabilities. Level of warrant (also referred to as asset tangibility) is measured by the ratio of net tangible fixed assets over total assets. Capital structure is measured by total debt over total debt plus market value of equity. The results indicate that only the firm reputation (age of firm) seems to be insignificant. As expected, size and the level of warrants show a positive relation with leverage. As a conclusion, the recent study of a developed nation still give similar results with the earlier study done on other developed nations.

Based on the methodology that is used by Fama and French (2005), Tong and Green (2005)test the pecking order and trade-off hypotheses of corporate financing decisions to explain the financing behavior of Chinese firms. The data are extracted from the published accounts of non-financial companies listed on the Shanghai and Shenzhen Stock Exchanges for the years 2001 and 2002. The data are of top 50 firms reported by Shanghai and Shenzhen Stock Exchange. The study examine few related aspects of corporate financing such as where trade-off and pecking order theories give different

predictions, the determinants of leverage, the relationship between leverage and dividends, and the implications of each theory for corporate investment. The results indicate that there is a significant negative relationship between leverage and profitability. They find a significant positive relationship between current leverage and past dividends. These results broadly support the pecking order hypothesis over trade-off theory. However, they find insignificant negative correlation between the growth and the rate of past dividends. Overall, the results provide a support for the pecking order hypothesis and demonstrate that a conventional model of corporate capital structure could explain the financing behavior of Chinese companies.

Beattie *et al*. (2006) examine among 831 finance directors in industrial and commercial UK listed firms. They find that 60 percent of responds argue that they follow the financing hierarchy, where internally generated funds through retention are the preferable source of financing, followed by debts. They find that UK companies tend to adopt pecking order approach if the information and transaction costs are significantly large. When internally generated funds become insufficient for financing, the company turns to raise debt funds to meet the finance requirement. Moreover, the survey results show that investment opportunities and dividend pay-out determine the amount of external financing requirement as the pecking order theory suggests. The long term target dividend payout is set based on the firm's profitability and growth opportunities so that the need for external financing is minimized. The results also show that 88 percent of responding directors agree that they consider the market response to new issues of debt and equity.

Gaud et al. (2006) examine the capital structure of the firms from 13 European countries that include the United Kingdom, France, Germany, Sweden, Italy, Spain, Netherlands, Switzerland, Norway, Denmark, Belgium, Finland and Australia. A panel data of 5,074 firms for the period from 1988 till 2000 have been analyzed. It is noted that debt levels around Europe are fairly homogenous, with the range between 0.207and 0.388. The lowest and the highest leverage are observed in the UK and Norway respectively. The effect of firm size and asset tangibility on leverage turns out to be positive as expected and this supports the trade-off theory of capital structure. A negative association is noted with leverage for the effect of return on asset for all the European countries in the sample which supports the pecking order hypothesis of capital structure. The growth opportunity also shows a negative coefficient and this complies with the static trade-off theory. Another fact learned from this study is that profitable firms prefer increasing dividends rather than decreasing debt levels which supports the agency cost theory.

Flannery and Rangan (2006), using the models proposed by Frank and Goyal, 2003 and Shyam-Sunder and Myers (1999), provide evidence suggesting the equity issues track the financing deficit of the US firms quite closely, implying that debt financing does not govern equity financing as pecking order theory predicts. The findings of this study are consistent with the finding of Frank and Goyal (2003) in the same market. However, this study finds that firms tend to finance a large proportion of their financing deficit by equity when the price of equity is overvalued. This finding supports the view of Myers and Majluf (1984) that firms issue equity when the cost of equity is relatively low. However, they claim that the effects of pecking order considerations on the capital structure are swapped by reversion toward firm specific target leverage.

Cheng and Shiu (2007) examine whether, in addition to the firm specific factors, institutional differences, particularly investor protection determine capital structure choice of 45 countries from Asia, Europe, North America, Africa and Australia. The capital structure ratios across 45 countries are calculated for the sample period from1998 till 2001. The total debt ratio has an overall mean of 54.44 percent with the highest recorded by Indonesia, with 66.85 percent and lowest total debt of 31.80 percent in Venezuela. Firms in European countries have higher total debt ratio in average while developing countries generally have lower debt ratio.

In the ASEAN countries, except for Thailand with 61.97 percent, other countries recorded lower debt ratio including Malaysia, Singapore and Philippines with51.87 percent, 46.56 percent and 46.34 percent respectively. Growth opportunities, firm size, profitability, asset structure, business risk, investor protection, capital market size vs. banking sector power, GDP per capita, inflation and taxes are examined to see the effect on capital structure of the selected countries.

The authors claim that the firms easily access to equity if the capital markets are larger while more prone to take bank loan if there are stronger power in banking sector. The results show that for all the countries, profitability appeared to be negatively related to leverage. For the effect of firm size, there is more positive significance than negative significance for the 41 countries under study. For the asset structure, only long-term debt shows a positive relationship with leverage while mixed results have been noted for the effect of growth opportunities and business risk. The other interesting results noted are firms use more debt in country where they have better creditor protection and in country where shareholders protection appeared better, firms tend to use more of equity. The

better the GDP of the countries, the lower are the leverages and inflation has negative impact on leverage. Finally, the impact of taxes suggests that the firms with higher corporate taxes use more debt than firm with lower corporate taxes.

Byoun (2008) examines the capital structure adjustment based on the required external capital changes as measured by a financial deficit/surplus. The study provides evidence that most adjustments occur when firms have above target debt with a financial surplus. The speed of adjustments for firms with financial deficits is lower than those with financial surplus, suggesting that firms with financial deficit are more risky than firms with financial surplus. Although the results suggest that firms move toward the target capital structure when they face a financial deficit/surplus, adjustment towards the target leverage ratio does not occur in the way consistent with the predictions of pecking-order theory. In addition, the author suggests that surplus firms with above target debt use all of their financial surpluses to pay off debt, whereas firms with below target debt retire both debt and equity with their financial surpluses. Hence, firms with financial surpluses experience different adjustment rates for leverage below and above target leverage ratios, with higher rates for above target leverage than for below target leverage. In contrast, his results suggest that surplus firms with leverage below the target level move away from the target, increasing the time required for firms to revert back towards their target ratios.

Vasiliou and Daskalakis (2009) investigate the finance managers in 89 listed companies on the Athens Exchange. They find the Greek finance managers seem to care more about the disadvantages of debt instead of exploiting debt capital and cost of financial distress, market timing and competitiveness are more important factors determining the capital structure of Greek firms. Agency costs of equity, pecking order theory and signaling

theory seems to be less relevant in determining the capital structure of Greek firms. However, the finding indicates the internal financing to be the main source of funding when Greek firms finance new projects. The findings are comparable to those of Graham and Harvey (2001) and Bancel and Mittoo (2004).

Most of the studies during 2000s seem to find out the determinants of capital structure, both firm specific factors and macroeconomic factors especially GDP and inflation. In addition, some studies have examined whether trade-off theory and pecking order theory explain the capital structure of the firms in both developed and emerging countries. From the review of major studies during 2000s, the observations are that the existing theories serve as analytical tools to dissect the empirical findings, but none is capable of explaining all the aspects of capital structure choice. While each theory can successfully account for some of the stylized facts, it has trouble with some of the others. The current state of the literature suggests that the most reliable factors for explaining the capital structure are market-to-book ratio, assets tangibility, profitability, size of the firms, expected inflation, and the median industry leverage.

Additionally, the speed of adjustments, as assumed by trade-off theory, is higher in market-based economies relative to bank-based economies. Firms that operate in market-based economies have lower adjustment costs and higher benefits of adjusting to an optimal capital structure. The closer a firm's debt ratio to an optimal ratio, the higher is the firm's value and the lower is the cost of capital. Thus, a firm's valuation is significantly influenced by the financial system in which it operates.

2.3.5 **Review of recent literature**

This section deals with the review of the major studies that have been conducted recently during 2010 onward. Table 2.5 presents the summary of the major studies conducted during the period of during 2010 onward.

Table 2.5

Summary of key findings of the recent studies

Study	Key findings
Bartholdy et al. (2010)	The study shows that owners have the most information about the firm and the use of internal equity gives a strong signal that the owners believe in the firm's future prospects. The results from the study however are less favorable to a strict interpretation of pecking order financing.
Rasiah and Kim (2011)	The findings of the study indicate that with respect to variable profitability of the firm, in consistence with theory, under the static tradeoff theory model they find a positive relationship between the profitability and the leverage; whereas under the pecking order theory they find a negative relationship between the profitability and the leverage.
Alicia and David (2012)	They find that the majority if the firms rely heavily on external debt sources, such as bank financing and less extensively on friends-and-family-based funding sources. The average amount of bank debt is roughly proportional to the amount of personal equity supplied by the entrepreneur.
Natasa and Martina (2012)	The results show a significant negative relationship between liquidity and leverage. They also find a negative relationship between ratio of cash in current assets and short term debt ratio.
Mostarac et al. (2013)	They argue that large firms use more debt in financing because they have lower cost of debt due to the fact that they are more diversified and have a lower risk of bankruptcy. This is in line with trade-off theory.
Ralf et al. (2014)	The results show that more profitable firms less equity (as expected, given a preference for inside funds) but more debt (which is inconsistent with the pecking order theory). Overall, their study offer little support for the most common interpretation of pecking order theory of capital structure.

Bartholdy et al. (2010) test the pecking order behavior in small and medium Portuguese firms using an improved version of the Shyam-Sunder and Myers test. The data used by them are collected from the Bank of Portugal Statistical Department database which contains balance sheet and income statement data of 1811 non listed firms with 11,359 observations over the period from 1990 to 2000. However, only manufacturing firms with

more than 100 employees for at least one year are included for the purpose of the study. The authors have separated debt into four components—cheap trade credits, bank loans, other loans and debt, and expensive credit. According to them, the pecking order of financing sources for Portuguese SMEs is driven by the degree of asymmetric information and the estimated cost is of each source. The predicted pecking order is internal equity, cheap trade credits, bank loans, credit from other financial institutions, overdrawn or expensive trade-credits, and finally miscellaneous other debt. Under pecking order financing, internal equity should be the preferred source of funds and the study indicates that it provides about half of the funding for Portuguese Small and Medium Enterprises.

Clearly, the study shows that owners have the most information about the firm and the use of internal equity gives a strong signal that the owners believe in the firm's future prospects. The results from the study however are less favorable to a strict interpretation of pecking order financing. The results are broadly consistent with the loose interpretation of pecking order theory since Portuguese firms generally proceed with financing along the pecking order, even if they do not totally exhaust each source before moving on to the next higher cost funding source. Thus, the results of the study have supported a loose interpretation of pecking order financing because the study find breakpoints between internal equity, cheap trade credits, loans from banks and other institutions, and expensive financing sources involving expensive trade credits and other debt. The results suggest that Portuguese SMEs follow a loose pecking order based on cost of funding (including costs of asymmetric information), but they do not exhaust each financing source before moving on the next higher cost source of funds.

Rasiah and Kim (2011) attempt a study to examine which of the theory of capital structure – pecking order theory or trade-off theory - would explain the financing behavior of the firm. This study made use of the few explanatory variables determining the optimal leverage ratio. The determinants used in their study were firm's profitability, the effective tax rate and the size of the firm. The findings of the study indicate that with respect to variable profitability of the firm, in consistence with theory, under the static tradeoff theory model they find a positive relationship between the profitability and the leverage; whereas under the pecking order theory they find a negative relationship between the profitability and the leverage. With respect to the effective tax rate, the findings indicate positive relationship between the effective tax rate and level of debt and a negative relationship under pecking order theory.

The results are inconsistence with the theories. It is because firms having higher taxable income tend to borrow more debt to take advantage of interest tax-shield. But in case of the pecking order theory; an expectation for the negative relationship between the effective tax rate and leverage ratio is expected because higher effective tax rate reduce the internal funds of profitable firms, and subsequently increase its cost of capital. The other determinant is the firm size and the findings indicate that in case of static tradeoff theory; the size of a firm is positively associated with the level of leverage which is expected by the theory. Large firms are more diversified and less vulnerable to bankruptcy costs which enabled them to borrow at lower interest rate along with higher level of leverage. But in case of the pecking order theory the findings indicate the negative relationship whereas the theory expects the positive relationship in this regard.

Alicia and David (2012) study the capital structure choices that entrepreneurs make in their firms' initial year of operation using the data from the Kauffman Firm Survey. They find that the majority of the firms rely heavily on external debt sources, such as bank financing and less extensively on friends-and-family-based funding sources. The average amount of bank debt is roughly proportional to the amount of personal equity supplied by the entrepreneur. This indicates that the scale of operations simply scales with the entrepreneurs' net worth. Their study suggests that informal investors are important for the handful of firms that rely on outside equity at their startup. The study also indicates that most of the firms turn elsewhere for their initial capital. Indeed, roughly 80 – 90 percent of most firms' startup capital is made up in equal parts of owner equity and bank debt. This study suggests that the reliance on formal bank capital is likely to be important for startups as they continue to grow.

Natasa and Martina (2012) show that the liquidity of the company, which is reflected in the ongoing ability to pay financial obligations, affects the firms' capital structure. The increase of liquidity of the firm leads to decrease of the leverage and vice versa. The results show a significant negative relationship between liquidity and leverage. They also find a negative relationship between ratio of cash in current assets and short term debt ratio. They also find that long term leveraged firms are more liquid. Increasing inventory levels lead to increase in the leverage of the firms.

Mostarac et al. (2013) examine the determinants of capital structure in selected Croatian enterprises (about 10,000 enterprises) using cross-sectional data for 2007 as pre-recession year and 2010 as recession year. They include assets tangibility, profitability, firm size, and business risk as determinants of capital structure. The results indicate highly

significant positive relationship between assets tangibility and leverage in both observed years which is consistent with trade-off theory as well as pecking order theory. They find profitable firms in Croatia in the period before financial crisis and during recession have the ability to retain earnings and finance internally and show the significant negative relationship between profitability and leverage which is consistent with pecking order theory. They also find the firms, bigger in size, using more debt.

They argue that large firms use more debt in financing because they have lower cost of debt due to the fact that they are more diversified and have a lower risk of bankruptcy. This is in line with trade-off theory. However, they do not find a significant relationship between business risk and leverage. Thus, they conclude that assets tangibility, profitability, and size of the firms are the significant determinants of capital structure in Croatian firms.

Ralf et al. (2014) examine three theories of capital structure: the trade-off theory, pecking order theory, and market timing theory in US firms. They find strong evidence consistent with target adjustment behavior for their sampled firms. They find that the type of securities issued to finance a large investment significantly depends on the deviation between a firm's target and actual leverage. Over-leveraged firms issue less debt and more equity when financing large projects, and vice versa. They demonstrate that firms making large investments converge unusually rapidly toward target leverage ratio. They also find that managers issue more equity after a share price run-up occurs. Their results confirm the pecking order hypothesis asserts that firms prefer internal to external funds and debt to equity. They find that higher profitability leads firms to replace external financing with internal funds.

However, profitability primarily affects the choice between internal funds and issuing new equity. This substitution is consistent with a non-standard version of the pecking order hypothesis (Myers, 1984, p. 584), but it has little effect on firm leverage. The results show that more profitable firms less equity (as expected, given a preference for inside funds) but more debt (which is inconsistent with the pecking order theory). Overall, their study offer little support for the most common interpretation of pecking order theory of capital structure.

The studies basically concerned with the test various firm specific variables and theories, especially trade-off theory and pecking order theory in explaining the capital structure of the firms. The studies find that assets tangibility, profitability, firm size, and business risk as major determinants of capital structure. In some cases trade-off theory has been observed as best compared to pecking order theory in explaining the capital structure and in other cases the results show the pecking order theory as best. Based on the results, it can be concluded that these theories are not exclusive.

2.3.6 Review of major Nepalese studies

Despite extensive on issues relating to capital structure management in the developed countries, there are a few studies with reference to capital structure issues of Nepalese enterprises. Table 2.6 shows the findings of the major studies conducted on capital structure issues in Nepalese enterprises.

Table 2.6

Summary of key findings of the some major Nepalese studies

Study	Key findings
Shrestha (1985)	The author finds that there are low capital gearing and even unbalance pattern of capital structure in public enterprises of Nepal.
Pradhan and Ang (1994)	The authors also argue that the Nepalese firms follow the target debt ratio while managing their capital structure.
Baral (1996)	The study finds positive relationship of leverage with growth, profitability, non-debt tax shield (statistically not significant), interest coverage ratio, and operating cash flows; and negative relationship of leverage with business risk by using Pearson's correlation analysis. The study further concludes that the capital structures of public enterprises are not sound.
Pradhan *et al.* (2002)	The major facts observed by the authors are that more than 50 percent public enterprises are running at loss; the labor productivity and debt coverage ratios have been deteriorated by increased financial distress; the profitability and liquidity found to be low in financially distressed enterprises. The return on equity, liquidity, labor productivity and debt capacity are also found to be low in financially distressed enterprises.
Gajurel (2005)	The author finds that the Nepalese firms as highly levered and the positive relationship between assets structure and size of the firms with leverage. Similarly, the relationship of liquidity, risk, growth, and nod-debt tax shields with the leverage found to be negative.
Khadka (2006)	The results show a negative relationship between the cost of capital and leverage but the coefficient is statistically insignificant and the author concludes that the leverage is not significant determinant of cost of capital.
Rajopadhyay (2007)	The study finds firm size, profitability, liquidity, tangibility, volatility, and non-debt tax shields as significant determinants of capital structure of Nepalese manufacturing firms. The author also has tested the speed of adjustment towards target capital structure as high compared to developed countries.

Shrestha (1985) argues that the financial leverage in Nepalese public enterprises is low. The study is based on the period of 1962 – 1967 and the author examines the aggregate trend of leverage used by the public enterprises of Nepal. The author observes the lack of pattern in the aggregate trend of capital structure of Nepalese enterprises. The author finds that there are low capital gearing and even unbalance pattern of capital structure in public enterprises of Nepal.

Pradhan and Ang (1994) find that the retained earnings and bank loan as most widely used sources of funds in Nepalese enterprises to meet their financial requirements. This finding is consistent with the pecking order theory of capital structure. This conclusion is based on their survey of 78 major enterprises, including 24 public enterprises of Nepal, focusing on finance functions, sources and types of financing, effects of taxes on capital structure decision, financial distress and dividend policy. The authors also argue that the Nepalese firms follow the target debt ratio while managing their capital structure.

Baral (1996) finds positive relationship of leverage with growth, profitability, non-debt tax shield (statistically not significant), interest coverage ratio, and operating cash flows; and negative relationship of leverage with business risk by using Pearson's correlation analysis. The study further concludes that the capital structures of public enterprises are not sound.

Pradhan *et al.* (2002) argue on the financial distress cost in Nepalese public sector. The study is based on the data from 1997 to 1999 and used portfolio analysis and econometric analysis. The major facts observed by the authors are that more than 50% public enterprises are running at loss; the labor productivity and debt coverage ratios have been deteriorated by increased financial distress; the profitability and liquidity found to be low in financially distressed enterprises. The return on equity, liquidity, labor productivity and debt capacity are also found to be low in financially distressed enterprises. The authors further argue that there is lack of legal frameworks to corporate restructuring. However, these studies are focused on financial distress (bankruptcy) aspect of capital structure, other aspects of capital structure remained unexplored.

Baral (2004) observes the relationship of determinants of capital structure namely, size, business risk, growth rate, earning rate, dividend payout, debt service capacity, and degree of operating leverage with debt ratio of Nepalese firms listed on Nepal Stock Exchange (NEPSE). The multiple regression models used to test the theoretical relation between the financial leverage and characteristics of the firm .The dependent variable was the ratio of total debt to total assets. The total debt includes both short term and long term interest bearing debt. The independent variables were: size of the firm, business risk, growth rate, earning rate, dividend, debt service and degree of operating leverage.
The results indicated that the size, growth and earning rate were statistically significant determinants of financial leverage.

Gajurel (2005) attempts to explain the capital structure pattern and its determinants in Nepalese non financial firms listed in Nepal Stock Exchange using the date from 1992 – 2004. The author finds that the Nepalese firms as highly levered and the positive relationship between assets structure and size of the firms with leverage. Similarly, the relationship of liquidity, risk, growth, and nod-debt tax shields with the leverage found to be negative. In addition, the author concludes that the macroeconomic variables GDP, inflation, and capital market influence the capital structure of the Nepalese firms. The author also has concluded that both the trade-off theory and pecking order theory work in explaining the capital structure of Nepalese non-financial firms.

Khadka (2006) tests the Modigliani and Millers's proposition on the relationship between leverage and cost of capital in the context of Nepalese capital market. The main objective of this study is to determine whether the average cost of capital declines with the

increasing use of leverage. The results show a negative relationship between the cost of capital and leverage but the coefficient is statistically insignificant and the author concludes that the leverage is not significant determinant of cost of capital. The study further concludes that the tax deductibility feature of debt capital is not only the factor in reducing the cost of capital. The author also concludes that the relationship between leverage and cost of equity as negative. Besides leverage, the study also concludes that the size and dividend payout ratio are the major determinants of cost of capital in Nepalese context.

Rajopadhyay (2007) finds firm size, profitability, liquidity, tangibility, volatility, and non-debt tax shields as significant determinants of capital structure of Nepalese manufacturing firms. This conclusion is based on the data from manufacturing companies listed in Nepal Stock Exchange for the period from 1991 – 2004 and regression equation. The author also has tested the speed of adjustment towards target capital structure as high compared to developed countries. The author has observed the speed of adjustment as 57 percent in the Nepalese manufacturing firms. Besides, the study also has shown the negative relationship between leverage and cost of capital indicating that the increase in leverage decreases the cost of capital.

2.4 Conceptual framework of the study

The central theme in capital structure literature is whether an optimal or at least a target capital structure exists. A target capital structure is the form of financing toward which firms move their capital structure over time. The target capital structure can be modeled

by a regression equation contingent on firm-specific variables. The starting point for all modern treatments of this subject is the irrelevance proposition of Modigliani and Miller (1958) with no capital market imperfections. The perfect market assumptions underlying Modigliani and Miller differ from the real world in which firms operate. The capital structure literature discusses the imperfections and their possible consequence for capital structure decisions. The capital structure literature contains two main theories: the trade-off theory and the pecking order theory. In the trade-off theory, the firm's benefits and costs of debt are weighted against each other by adjusting to its optimal capital structure. The main theoretical benefit of debt is the tax shield on interest paid on debt. The main adverse consequence is the cost of financial distress.

The pecking order theory, which can be motivated by both asymmetric information and transaction costs, offers a distinction between internal and external capital. Asymmetric information may exist both between the company and shareholders and between the firm and its lenders. The effect on the debt ratio depends on whether uncertainty exists about risk and return. The pecking order theory proposes that firms finance their investments with internally generated funds before debt and then external equity. The firm's debt ratio will reflect the cumulative requirement for external funding (Myers 1984).

In the review paper, Harris and Raviv (1991) find the three main hypotheses used to explain differences in capital structure among companies are the transaction-cost hypothesis, the asymmetric-information hypothesis, and the tax hypothesis. They report that leverage increases with fixed assets, non-debt tax shields, investment opportunities, and firm size. By contrast, leverage decreases with volatility, advertising expenditure, probability of bankruptcy, profitability, and uniqueness of the product.

As the ac discussion on trade-off verses pecking order theory by Shyam-Sunder and Myers (1999) and Fama and French (2002) continues, ascertaining which of the two main theories best describe capital structure adjustments is difficult. In a reconciliation of these two theories, Kayhan and Titman (2007) claim that short-term movements are governed by pecking order theory, while a long-term target is determined by a trade-off between costs and benefits of debt and equity. Both recent and historic studies have tried to find out the firm specific determinants of capital structure and this study also examines the various firm-specific factors determining the capital structure of Nepalese enterprises with the following theoretical framework.

Figure 2.2: Conceptual framework with respect to determinants of capital structure

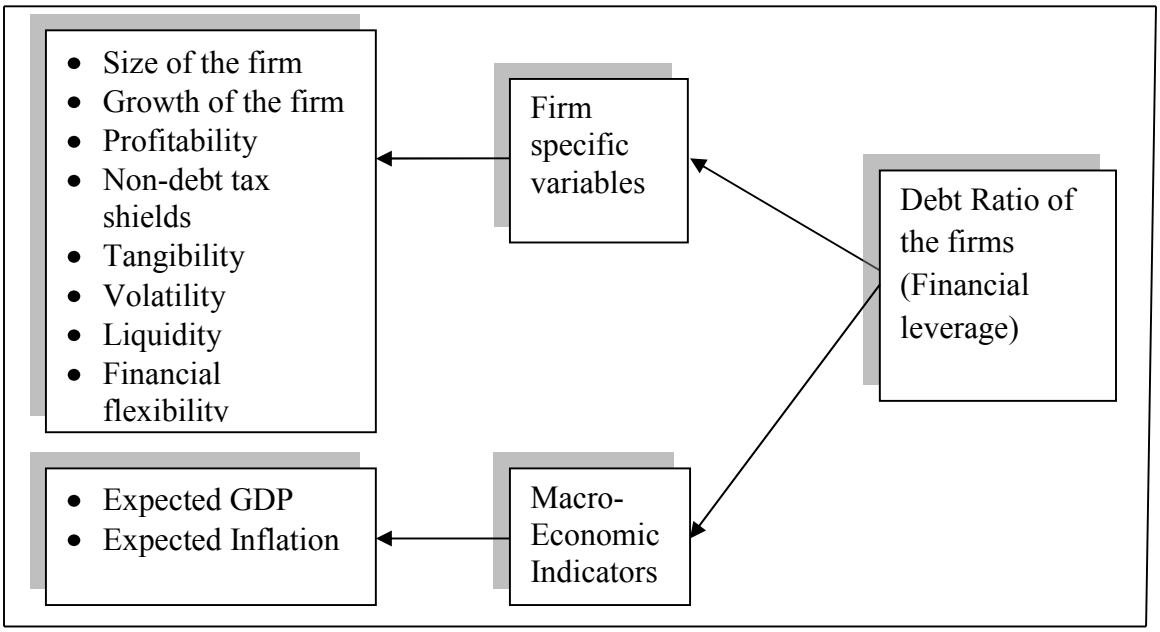


Figure 2.2 presents the conceptual framework of the study showing the firm specific variables and macroeconomic indicators determining the capital structure of Nepalese manufacturing firms.

The pecking order theory (Myers and Mujluf 1984; Myers 1984) and its extensions (Lucas and McDonald 1990) are based on the idea of asymmetric information between managers and investors. Managers know more about the true value of the firm and the

firm's riskiness than less informed outside investors. If the information asymmetry results in underpricing of the firm's equity and the firm needs to finance a new project by issuing equity, the underpricing may be so severe that new investors capture most of the net present value of the project, resulting in a net loss to existing shareholders. Thus, managers who work in the best interest of the current shareholders will reject the project which creates the underinvestment problem in the firm. To avoid the problem of such underinvestment in the firm, managers will seek to finance the new project using a security that is not undervalued by the market such as internal funds and riskless debt. Thus, the pecking order theory predicts that a financing deficit is the main determinant of debt issue and firms use external financing only if internal funds are insufficient to finance their growth opportunities. Following this notion, this study has followed the following theoretical framework in respect of examining the pecking order theory.

2.5 Concluding remarks

To sum up, even more than five decades after Modigliani and Miller's (1958) path-breaking analysis, corporate finance still lacks a unifying capital structure theory. However, the existing theories serve as analytical tools to dissect the empirical findings, but none is capable of explaining all the aspects of capital structure choice. While each theory can successfully account for some of the stylized facts, it has trouble with some of the others. The current state of the literature suggest that the most reliable factors for explaining corporate leverage are market-to-book ratio, tangibility of the assets, profitability of the firm, size of the firm, expected inflation, and median industry level.

Frank and Goyal (2009) refer to these factors as the "core leverage factors" that affect capital structure decision. Many of the variables that the various theories of capital structure have suggested affecting the optimal capital structure are difficult to measure. For example, signaling theory of capital structure suggests that managers' private information about the firm's prospects plays an important role both in their financing choices and in how the market responds to such choices. But since it is difficult to identify when managers have such proprietary information, it is not easy to test this proposition. In addition, measurement of variables found to be different from study to study. Same variable has been found different in its measurement in different studies. It seems lack of consistency in the measurement of the variables of capital structure and because of this fact, comparison of the result from one study to another study have become difficult.

Based on this review, one conclusion is that there are some common findings and answers to questions about what determines capital structure choice and how firms develop their capital structure over time. A simple question from practitioners as to whether their firms are overleveraged or underleveraged can be answered by a target debt ratio prediction. The literature has reached a consensus about the directions of effects, but it is far from reaching a consensus on the size of the effects as the discussion on speed of adjustments illustrates.

Empirical evidences confirm the main prediction of trade-off theory that leverage should be inversely related to expected bankruptcy costs. The major weakness of trade-off theory is the negative relationship between debt and profitability. The only theory that provides a straight explanation for this phenomenon is pecking order theory. Pecking

order theory also helps to explain negative share price reaction on equity issue announcements. Signaling theory is useful in explaining the negative market reaction to a broad range of leverage decreasing transactions and the positive reaction for some leverage increasing transactions. It also predicts the positive market reaction on debt issues which does not have empirical support. Evidences support market timing theory that managers wait until the market conditions get better before issuing securities. Evidence also shows that stocks tend to have high returns before new equity issues. Some recent papers address problems associated with trade-off theory such as debt conservatism and the low sensitivity of debt regarding tax changes. Recent research helps to explain why growing and risky firms issue equity based on and asymmetric information approach suggested by pecking order and signaling theories.

Several major conclusions emerge from the development of capital structure theory over the past. First, researchers have extensively tested trade-off and pecking order theories. Taken separately, these theories cannot explain certain important facts about capital structure. Second, market timing theory emerged after the publication of Baker and Wurgler (2002) as a separate theory of capital structure. Compared to trade-off and pecking order theories, theoretical aspects of market timing theory are underdeveloped. Third, a popular line of inquiry has emerged based on surveys of managers about their capital structure decisions. For example, Graham and Harvey (2001) report a large gap between theory and practice. Fourth, signaling theory of capital structure lacks empirical supports regarding some of its core predictions. However, several new theories have emerged that contradict the notion of signaling quality through debt issuance. More research may be required to create new models that can compete with trade-off and

pecking order theories. From the review of literature it seems that the empirical methods in corporate finance, especially relating to capital structure management, have lagged behind those in capital markets due to several reasons.

First, the models of capital structure decisions are less precise than those in capital markets – for example, capital assets pricing model. Models of capital structure typically provide only qualitative or directional predictions. For example, the tax – based theory of capital structure suggests that firms with more non–debt tax shield should have less debt in their capital structure, but the theory does not tell us how much less.

Second, various theories of capital structure so far been developed have been tested in the developed countries and they have suggested the factors affecting the capital structure decisions of the firms. However, there are not sufficient studies to test the theories and models developed in the context of developing countries. Few studies have been conducted in the emerging countries of Asia and some other continents and the results found were more or less same as compared to that from developed countries. But the necessity of such studies in the countries like ours is there.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

Research methodology is a way of solving a research problem systematically. Research is a systematic and organized effort to investigate a specific problem that needs a solution (Sekaran, 1992). This process of investigation involves a series of well-thought out activities og gathering, recording, analyzing, and interpreting the data with the purpose of finding answers to the problem. The methodology employed in the study comprises research design, nature and sources of data, study period, selection of firms, discussion on the variables used, methods of analysis, analysis and presentation of outputs, and concluding remarks. The following are the details relating to methodology employed in this study.

3.2 Research design

This study employs descriptive and causal comparative research designs. Descriptive research design is a fact-finding operation searching adequate information. It is conducted to assess the opinions, behavior or characteristic of a given population and to describe the situation and events occurring at present. For the purpose of the survey on capital structure management practices in Nepalese enterprises, the structured questionnaire has been distributed to practitioners in the field of finance.

The study also employs causal comparative research design which deals with cause effect relationship between capital structure and factors affecting capital structure. More

specifically, the study examines the cause effect relationship of capital structure with various firm specific and macro-economic variables namely, size of the firms, assets tangibility, non-debt tax shields, earnings volatility, liquidity, financial flexibility, profitability, growth, expected inflation, and expected GDP.

3.3 Nature and sources of data

Since this study is based on both primary as well as secondary sources of information, this study has employed descriptive and causal comparative research designs to deal with the fundamental issues associated with corporate capital structure of Nepalese manufacturing enterprises. The study is based on both secondary and primary data. The required secondary data for this study have been collected from the annual reports, prepared by the concerned firms. These annual reports have been collected from the concerned firms, Nepal Stock Exchange (NEPSE), the publications of the annual reports by the concerned firms, Securities Board of Nepal (SEBON) and Office of the Auditor General of Nepal. The macroeconomic variables namely, GDP and inflation are collected from the quarterly economic bulletin published by Nepal Rastra Bank (Central bank of Nepal), economic survey by Ministry of Finance. This study is also based on the primary data and the required data have been collected through questionnaire survey.

The following sample selection criteria has been used

i) For this study, only the manufacturing firms of Nepal have been included. The firms that operate in banking and insurance sectors have been excluded as they are highly regulated and their leverages are very high. So they do not

provide a good laboratory for research. Consistent with most capital structure studies, the sample excludes firms in the finance related sectors, as they depend largely on borrowed funds and have low net assets bases. The reason for excluding these sectors is that those firms have debt ratio having special characteristics in comparison with that of manufacturing firms which may tend to make the results biased (Rajan and Zingales, 1995).

ii) The manufacturing firms either listed in Nepal Stock Exchange (NEPSE) or owned by government have been included for the purpose of this study.

iii) All the firms with missing data have been excluded.

iv) All the firms having at least ten years' data have been included.

With the application of above mentioned criteria, 12 years data from 2000 to 2011 of 25 manufacturing firms from private and public sectors have been selected for the analysis. Out of 25 firms, 15 firms are listed in Nepal Stock Exchange (NEPSE) which is being categorized in this study as private firms and 10 firms which are being owned by the government is being categorized as public firms in this study. Since this study is based on both secondary as well as primary sources of information, a questionnaire survey has been carried out. For the purpose of this study, the multiple questionnaire is distributed to 300 respondents. Out of which only 186 usable questionnaires are received. The sectors covered in this study to collect the required information through survey are trading, manufacturing, finance, and service.

Considering the study period, usable data has been obtained from the 25 manufacturing enterprises as indicated below in Table 3.1.

Table 3.1

Table showing the selection of the firms for the study along with study period and number of observations

S.N	Name of the firms	Study Period	Number of Observations
1	Arun Vanaspati Udyog Limited	2000 – 2011	12
2	Bhrikuti Pulp and Paper Nepal Limited	2000 – 2011	12
3	Bottlers Nepal Balaju Limited	2000 – 2011	12
4	Bottlers Nepal Terai Limited	2000 – 2011	12
5	Fleur Himalayan Limited	2000 – 2011	12
6	Birat Shoe Limited	2000 – 2011	12
7	Himalayan Distillery Limited	2000 – 2011	12
8	Jyoti spinning Mills Limited	2000 – 2011	12
9	Nepal Bitumin and Barrel Udyog Limited	2000 – 2011	12
10	Nepal Khadya Udhyog Limited	2000 – 2011	12
11	Nepal Lube Oil Limited	2000 – 2011	12
12	Nepal Vanaspati Ghee	2000 – 2011	12
13	Raghupati Jute Mills	2000 – 2011	12
14	Shree Ram sugar mills	2000 – 2011	12
15	Unilever Nepal	2000– 2011	12
16	Agriculture Input	2000– 2011	12
17	Butwal Spinning Mills Limited	2000 – 2011	12
18	Dairy development	2000 – 2011	12
19	Gorakhkali Rubber Udhyog Limited	2000 – 2011	12
20	Hetauda Cement	2000 – 2011	12
21	Jatibuti	2000– 2011	12
22	Nepal Aushadi	2000– 2011	12
23	Nepal Foundry Company Ltd.	2000– 2011	12
24	Nepal Orind Magnesite	2000 – 2011	12
25	Udayapur Cement	2000 – 2011	12
Total			300

This study is, therefore, based on the 300 observations collected from 25 manufacturing enterprises of Nepal.

3.4 Measurement of variables and development of hypotheses

This section presents a brief discussion of the variables selected for this study to examine the significance in explaining the capital structure decisions of Nepalese firms. In addition, this section is concerned with the development of hypotheses with respect to each variable selected and their measurement based on the theories and past empirical studies. The variables selected for this study are: firm size, growth opportunities, non-debt-tax-shield, profitability, liquidity, tangibility or collateral value of assets, volatility of earnings and, financial flexibility. In addition, as suggested by recent studies on capital structure (e.g. Campello, 2003, Khanna and Tice, 2005), the capital structure decisions of the firms are affected not only by the firm-specific variables but macro-economic variables as well. In this study two macro-economic variables namely, Gross Domestic Product (GDP) and expected inflation rates are considered to examine their significance in explaining the capital structure decisions in the selected Nepalese manufacturing enterprises.

Firm Size

It has been suggested by a number of studies that firm size is positively related to debt ratios. The rationale behind this belief is the evidences provided by Warner (1977) and Ang et al. (1982) that the ratio of direct bankruptcy costs to the firm value decreases as the size increases, suggesting that the impact of these costs on the borrowing decisions of large firms might be negligible. Large sized firms tend to be more diversified, and hence their cash flows are less volatile. According to Titman and Wessels (1988), relatively large firms tend to be less prone to bankruptcy. Ferri and Jones (1979) suggest that large

firms have easier access to the market and can borrow at better conditions. Furthermore, it is argued that larger firms may have lower agency costs associated with the assets substitution and the underinvestment problems (Chung, 1993).

A further reason for smaller firms to have lower debt ratios might be that smaller firms are more likely to be liquidated when they are in financial distress (Ozkan, 2000). Most empirical studies reported indeed a positive sign for the relationship between size and leverage (Rajan and Zingales, 1995; Booth et al., 2001; Frank and Goyal, 2003). In this study the natural logarithm of sales is used as a proxy for the size of firms. This measure is in line with other studies in this area (e.g., Titman and Wessels, 1988; Whitley, 1992; and Rajan and Zingales, 1995). These arguments suggest that there should exist positive relationship between the firm size and leverage ratios of the firms.

Growth Opportunities

Myers (1977) suggests that the amount of debt issued by a firm is inversely related to the growth opportunities consisting of future investment opportunities, which would increase the value of the firm when undertaken. It is argued that firms financed with risky debt pass up some of these valuable investment opportunities in some state of nature. Titman and Wessels (1988) also point out that firms in growing industries incur higher agency costs since they have more flexibility in taking future investments.

Rajan and Zingales (1995) find a negative relationship between growth opportunities and leverage. They suggest that this may be due to firms issuing equity when stock prices are high. As mentioned by Hovakimian et al. (2001), large stock price increases are usually associated with improved growth opportunities, leading to a lower debt ratio. Titman and

Wessels (1988) suggest that the growth includes capital expenditure over total assets and the percentage change in the total assets can be used as suitable proxy to measure the growth of the firm and the same measure has been used in this study.

Non-Debt Tax Shields

Some investments may generate non-debt tax benefits which are unrelated to how firms finance these investments. Although these investments do not consist of any debt related costs they act as substitutes for tax shields. DeAngelo and Masulis (1980) present a capital structure model where non-debt tax shields serve as a substitute for the interest expenses that are deductible in the calculation of the corporate tax.

According to the MM theory, the main incentive to use debt capital is to take advantage of interest tax shields. The presence of other non-debt tax shields like depreciation and amortization reduces this incentive. Therefore, the existence of non-debt tax shields should discourage leverage and a negative relationship between non-debt tax shields and leverage is expected. Following Titman and Wessels (1988), the ratio of annual depreciation expenses to total assets is considered as a proxy for non-debt tax shields and an inverse relationship is expected to exist between the amount of the non-debt tax shields and debt ratio.

Profitability

One of the main theoretical controversies concerns with the relationship between leverage and profitability of the firm. Myers (1984) and Myers and Majluf (1984), in their pecking order theory of capital structure, point out that firms prefer retained

earnings as their main source of financing investment where the second preference is debt financing, and last comes new equity issues. All things being equal, the more profitable the firms are, the more internal financing they will have, and therefore it is expected a negative relationship between leverage and profitability of the firms. This relationship is one of the most systematic findings in the empirical literature (Harris and Raviv, 1991; Rajan and Zingales, 1995; Booth et al., 2001).

In a trade-off theory of capital structure framework, an opposite conclusion is expected. When firms are profitable, they should prefer debt to benefit from the tax shield. In addition, if past profitability is a good proxy for future profitability, profitable firms can borrow more as the likelihood of paying back the loan is greater. But this is not a common finding since both Fama and French (2002) and Frank and Goyal (2003) find that there often is a negative relationship between debt ratio and profitability. Kayhan and Titman (2007) also find this relation in their analysis of changes in debt ratios, but the effect is relatively week. In dynamic trade-off studies, profitability is also obviously negatively linked to leverage. It is generally observed that the financing behavior of the firms is likely to change over time. For example, Frank and Goyal (2005) finds that profitability has lost its explanatory power for US firms' capital structure over the last decades. A conclusion from what is said above and which is consistent with the pecking order theory is the fact that more profitable firms have a reduced need for external financing.

In this sense, profitability allows the firm to use retained earnings rather than external finance and a negative association between profitability and debt ratio is expected. Following Titman and Wessels (1988) and Whitley (1992), in this study profitability is

measured as ratio of the earnings before interest and tax and depreciation (EBITD) to total assets.

Liquidity

Liquidity position of the firms has a mixed impact on the capital structure decisions of the firms. 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. On the other hand, firms with greater liquid assets may use these assets to finance their investments. Therefore, the firm's liquidity position should exert a negative impact on its debt ratio. Moreover, the liquidity of the company's assets can be used to show the extent to which these assets can be manipulated by shareholders at the expense of bondholders. The studies which have used the ratio of current assets over current liabilities to measure the liquidity are studies done by Bhole and Mahakud (2004), Krenusz (2004) and Antoniou et al. (2002). In line with literature, this study also measures liquidity as the ratio of current assets over current liabilities.

Assets Tangibility

Most of the capital structure theories argue that the types of assets owned by a firm in some way affects its capital structure choice. Tangible assets are likely to have an impact on the borrowing decisions of a firm because they are less subject to information asymmetries and usually they have a greater value than intangible assets in case of bankruptcy. Additionally, the moral hazard risks are reduced when the firm offers tangible assets as collateral, because this constitutes a positive signal to the creditors who

can request the selling of these assets in the case of default. As such, tangible assets constitute good collateral for loans. According to Scott (1977), a firm can increase the value of equity by issuing collateralized debt when the current creditors do not have such guarantee. Hence, firms have an incentive to do so, and one would expect a positive relationship between the tangible assets and leverage of the firms.

Based on the agency problems between managers and shareholders, Harris and Raviv (1990) suggest that firms with more tangible assets should take more debt. This is due to the behavior of managers who refuse to liquidate the firm even when the liquidation value is greater than the value of the firm as a going concern. In agency theory framework, debt can have another disciplinary role. By increasing the debt level, the free cash flow will decrease (Grossman and Hart, 1982; Jensen, 1986; Stulz, 1990).

From pecking order theory perspective, firms with few tangible assets are more sensitive to information asymmetries. These firms will thus issue debt rather than equity when they need external financing (Harris and Raviv, 1991), leading to an expected negative relationship between the tangible assets and leverage. Most empirical studies conclude to a positive relationship between tangible assets (collateral value of assets) and the debt ratio (Rajan and Zingales, 1995; Frank and Goyal, 2003).The findings of Rajan and Zingales (1995) and Gaud et al. (2006) are consistent with the trade-off theory saying that tangible assets are appropriate from the reason of raising debt since it acts as a good guarantee. It also seems to diminish the cost of financial distress. Therefore, firms with more tangible assets would be expected to raise more debt and a positive relationship between leverage and tangibility of assets is expected which is consistent with the pecking order theory as well. In line with Titman and Wessels (1988), the ratio of

inventories plus fixed assets to total assets is used as a proxy to measure the tangibility of the firm.

Financial Flexibility

Despite its importance for managers, financial flexibility has received little attention in the academic literature. Traditional financing theories such as trade-off theory and pecking order theory assign little or no role to financial flexibility. Managers identify the need for financial flexibility as the main driver of their financing decisions. This finding is confirmed across countries legal systems as well as in both earlier and recent surveys such as Pinegar and Wilbricht (1989) and Graham and Harvey (2001). Bancel and Mittoo (2004) report that European managers are concerned with financial flexibility while making their financial decisions. They report that firms with high degree of internal financing tend to be more financially flexible as they tend to have low leverage, low trade credit, and high cash holdings. Their evidences also show that financially flexible firms are less likely to say that banks are reluctant to lend and that financially flexible firms also tend to have more business flexibility.

Studies have typically shown a negative relationship between financial flexibility and leverage and this is in line with the pecking order theory by Myers (1984). Singh and Hodder (2000) show an empirical study to determine the relationship of multinational firm's capital structure with firm specific factors. Among the factors examined, financial flexibility is found to be significantly affecting the firm's debt ratio. Gulati (1997) evidences the similar result.

Upneja and Dalbor (2001) find that financial flexibility as one the important variable determining the capital structure. They find that financial flexibility is negatively related to debt ratio. Chen and Jiang (2001) also find in the Dutch dataset that financial flexibility to be negatively related to short-term and long-term debt ratios measured both in book value and market value. In this study it is expected that there exists a negative relationship between financial flexibility and leverage. In this study, following Gulati (1997) and Upneja and Dalbor (2001), the ratio of cash plus marketable securities over total assets is used to measure the financial flexibility.

Volatility

Many studies have included a measure of risk as an explanatory variable of capital structure (Titman and Wessels, 1988; MacKie-Mason, 1990; Booth et al., 2001). Debt capital increases the volatility of the net profit. Firms that have high operating risk can lower the volatility of net profit by reducing the level of debt. A negative relationship between operating risk and leverage is expected from pecking order theory perspective. It is commonly argued in the literature that when a company has higher volatility in earnings, the probability of bankruptcy increases and the company will have difficulties in arranging funds to serve the interest. For companies choosing to raise funds through equity, they may not pay the dividends in the time of difficulties. Therefore, firms with highly volatile earnings borrow the least and prefer equity to debt. Hence, a negative relationship between financial distress and leverage is expected. In this study, according to Titman and Wessels (1988) the percentage change in operating profit is used to measure the volatility.

Gross Domestic Product (GDP)

In addition to firm-specific factors determining the capital structure, expected GDP has been considered as a significant factor determining the capital structure of the firm as suggested by recent studies. The recent studies on capital structure determinants have considered GDP as one of the factors as determinant of capital structure in developed countries and find it as a significant variable in explaining the leverage of the firms. Among the studies, Booth et al. (2001) and Muhammad (1999) use the expected GDP and find significant positive relationship with leverage of the firms. They find that the ratio of stock market capitalization to GDP increases over time in most countries under the study but for some countries the trend found is imperceptible. The GDP of the following year has been taken as expected GDP in this study. As indicated by Booth et al. (2001), the positive relationship between GDP and debt ratio is expected in this study.

Inflation Rate

Another macro-economic variable that has been considered in this study is the expected inflation. When expected inflation is high, firms tend to have high levels of leverage. This finding supports the trade-off theory, as the real value of the tax shield is positively related to inflation. This positive effect of inflation on leverage can also be explained by market timing. Since the real value of debt decreases with inflation, managers have an incentive to issue debt when expected inflation is high. Hatzinikolaou et al. (2002) show the effect of inflation on debt ratio decisions of the US firms. Based on the 20-year data from 1978 to 1997 for US firms, the authors find the negative relationship between inflation rate and leverage of the firms. However, in another study, Mutenheri and Green (2002) measure inflation rate as the percentage change in consumer price index. The

study is based on 52 listed firms in Zimbabwe for the period 1990 till 1999. The results indicate that the inflation has no significant effect in explaining the debt ratio choices. In this study the inflation rate of the following year has been used as the expected inflation and positive relationship with debt ratio is expected.

3.5 The model

The model estimated in this study assumes that the debt ratios depend on several firm specific variables and macroeconomic variables. The firm specific variables considered are firm size, growth opportunities, non-debt tax shields, profitability, liquidity, assets tangibility, and financial flexibility. The macroeconomic variables considered are expected GDP and expected inflation. Therefore the model takes the following form:

Debt ratio = f (Firm specific variables, macroeconomic variables)

More specifically,

Leverage = f (Firm size, Growth opportunities, Non-debt tax shields, Profitability, Liquidity, Asset tangibility, Financial flexibility, Volatility, GDP, Inflation)

In equation form,

$$y_{it} = \alpha_{it} + \beta x_{it} + \mu_{it} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad (3.1)$$

Where,

$i = 1,\ldots, N$ and $t = 1,\ldots,T$

y_{it} = leverage of firm i in year t.

α =intercept, constant of equation.

β = a(10 x 1) vectors of constant (i.e., coefficient of variables)

x_{it} = a vector of 10 time-varying independent variables, and

μ_{It} = error terms independently and identically distributed with zero mean

For the operational purpose, natural logarithm of net sales (lnS) as a proxy for size of the firm (Titman and Wessels, 1988; Rajan and Zingales, 1995; Wiwattanakantang, 1999; Booth et al., 2001; and Huang and Song, 2006) has been used in this study. The annual growth rate of total assets (ΔTA) is used as the proxy for growth opportunity (Titman and Wessels, 1988; Beven and Danbolt, 2002). The ratio of net operating income to total assets (EBITDTA) is used to measure the profitability of the firm (Titman and Wessels, 1988). The ratio of total depreciation to total assets (DEPTA) is used as the proxy for non-debt tax shields (Kim and Sorenson, 1986; Titman and Wessels, 1988; Wald, 1999; Wiwattanakantang, 1999). Similarly, the ratio of inventory plus net fixed assets to total assets (INVFATA) as a proxy for assets tangibility, current ratio (CR) as a proxy for liquidity and change in operating income (ΔEBITDTA) as proxy for volatility have been used in this study (Titman and Wessels, 1988; Wald, 1999). The ratio of cash to tatal assets (CTA) is used to measure the financial flexibility (Singh and Hodder, 2000; Upneja and Dalbor, 2001; Chen and Jiang (2001). The following year's GDP is used for expected GDP and similarly the following year's inflation rate has been used as expected inflation. Incorporating the proxies for the variables into equation 3.1 the empirical model for the capital structure are:

$$DR_1 = \alpha_t + \beta_{1t}(\ln S_{it}) + \beta_{2t}(\Delta TA_{it}) + \beta_{3t}(DEPTA_{it}) + \beta_{4t}(EBITDTA_{it}) + \beta_{5t}(CR_{it}) + \beta_{6t}(INVFATA_{it}) + \beta_{7t}(CTA_{it}) + \beta_{8t}(\Delta EBITDTA_{it}) + \beta_{9t}(GDP_{it}) + \beta_{10t}(\Delta INF_{it}) + \varepsilon_{it} \quad (3.2)$$

$$DR_2 = \alpha_t + \beta_{1t}(\ln S_{it}) + \beta_{2t}(\Delta TA_{it}) + \beta_{3t}(DEPTA_{it}) + \beta_{4t}(EBITDTA_{it}) + \beta_{5t}(CR_{it}) + \beta_{6t}(INVFATA_{it}) + \beta_{7t}(CTA_{it}) + \beta_{8t}(\Delta EBITDTA_{it}) + \beta_{9t}(GDP_{it}) + \beta_{10t}(\Delta INF_{it}) + \varepsilon_{it} \quad (3.3)$$

$$DR_3 = \alpha_t + \beta_{1t}(\ln S_{it}) + \beta_{2t}(\Delta TA_{it}) + \beta_{3t}(DEPTA_{it}) + \beta_{4t}(EBITDTA_{it}) + \beta_{5t}(CR_{it}) + \beta_{6t}(INVFATA_{it}) + \beta_{7t}(CTA_{it}) + \beta_{8t}(\Delta EBITDTA_{it}) + \beta_{9t}(GDP_{it}) + \beta_{10t}(\Delta INF_{it}) + \varepsilon_{it} \quad (3.4)$$

Where,

DR_1	: Short-term debt to total assets
DR_2	: Long term debt to total assets
DR_3	: Total debt to total assets
$\ln S_{it}$	: Size of the firm
ΔTA_{it}	: Growth opportunities of the firm
$DEPTA_{it}$	: Non-debt tax shield
$EBITDTA_{it}$	: Profitability of the firm
CR_{it}	: Liquidity of the firm
$INVFATA_{it}$	: Tangibility of the assets of the firm
CTA_{it}	: Financial flexibility
$\Delta EBITDTA_{it}$	: Earning volatility of the firm
GDP_t	: Expected gross domestic product
INF_{it}	: Expected Inflation
ε_{it}	: The error term.

One of the objectives of this study is to examine the explanatory power of trade-off theory in explaining the financial behavior of the selected Nepalese manufacturing firms. For this purpose, this study has used target adjustment model. The trade-off theory implies a target-adjustment model (Taggart, 1977; Jalilvand and Harris, 1984; Ozkan, 2001). Target adjustment theory assumes that firms try to balance the cost of debt, i.e. financial distress cost and bankruptcy costs, with the benefits of debt in terms of tax savings from the interest. Firms are expected to move toward their target debt ratio when their observed debt ratio deviates from the target and adjust the debt ratio accordingly. In this regards, according to Myers (1984), the presence of adjustment costs may restrict the

firms' ability to revert back to their capital structure immediately, suggesting the occurrence of partial adjustment toward the target level. The partial adjustment mechanism allows for the firms' observed debt ratio not always being equal to their target level. This mechanism suggests that firms make debt adjustment if the costs of being away from the target debt ratio are higher than those of moving toward the target; otherwise it is not rational for those firms to make debt adjustment, because the adjustment costs will be large enough to cancel out the benefits of moving toward the target level. However, it assumes that adjustment towards the target occurs at symmetrical rates. No distinction is being made between the below-target debt ratio and above-target debt ratio, suggesting that the adjustment costs as well as the benefits of increasing and reducing debt ratios are symmetrical. As the literature suggests for the target debt ratio as the fitted value estimated from the conventional regression, in this study, the target debt ratio has been estimated by using the model as specified in the equation (3.1). According to Shyam-Sunder and Myers (1999), the partial adjustment model can be defined as follows.

$$Y_{it} - Y_{it-1} = \alpha_t (Y_{it}^{*} - Y_{it-1}) + \varepsilon_{it} \qquad (3.5)$$

Where,

Y_{it} : the actual level of debt ratio of firm i at the end of year t.

Y_{it-1}: the actual level of debt ratio of firm i at the beginning of year t.

α_t: the adjustment speed or the proportion of the difference between target level of debt ratio and actual level of debt ratio at the beginning of year t.

Y_{it}^{*}: the target level of debt ratio of firm i at year t, and

ε_{it}: the error term.

The equation (3.5) is the theoretical partial adjustment model of capital structure proposed by trade-off theory which states that firms set a target level of leverage, Y_{it}^{*}. At a certain point in time, however, a firm's actual level of leverage, Y_{it}, may deviate from the target level of leverage, Y_{it}^{*} (Taggart, 1977; Marsh, 1982; Flannery and Rangan, 2006). In addition, the target level of leverage may change over the time and the firm attempts to adjust its next period's actual level of leverage toward the target level of leverage, as suggested by Hovakimian et al. (2001). The extent of the leverage adjustment or the change in capital structure at year t, as represented by $(Y_{it} - Y_{it-1})$ in equation (3.5), is a portion (α_t) of the difference between the target level of leverage and actual level of previous leverage, $(Y_{it}^{*} - Y_{it-1})$.

In addition, given a positive adjustment speed (α_t) in the application of the partial adjustment model, the increase or decrease in debt ratio (i.e. positive or negative adjustment) depends upon whether financial constraints of a positive or a negative adjustment gap exists between the target level of debt ratio and the previous actual level of debt ratio. According to the basic partial adjustment model, the size of the adjustment toward the target level is between zero and one.

In the application of the partial adjustment model, as represented by equation (3.5), the most important variable is target debt ratio. The target debt ratio or capital structure is unobservable. As suggested by prior studies (Ferri and Jones, 1979; Harris and Raviv, 1991; Hovakimian et al., 2001; Korajczyk and Levy, 2003; Flannery and Rangan, 2006), the target debt ratio has been estimated by using the model as specified in the equation (3.1).Based on this, the equation for the target debt ratio(Y_{it}^{*})has been expressed as follows.

$$Y_{it}^{*} = \alpha_{it} + \beta X_{it} \qquad (3.6)$$

Where,

Y_{it}^{*}: the target leverage of firm *i* at the end of year *t.*

β : regression coefficient

X_{jit} : the firm specific factors of firm i at year t

α_{it} : intercept of the equation

Substituting Y_{it}^{*} *in* equation (3.6) into equation (3.5), the new equation is derived which is for the determination of capital structure adjustment as follow.

$$Y_{it} - Y_{it-1} = \alpha_t (\beta X_{it} - Y_{it-1}) + \varepsilon_{it} \qquad (3.7)$$

Incorporating the individual firm-specific variables determining the capital structure, as suggested by prior studies, into equation (3.7), the equation (3.11) is derived as follow.

$$Y_{it} - Y_{it-1} = \alpha_t\beta_{1t} SIZE_{it} + \alpha_t\beta_{2t} GROWTH_{it} + \alpha_t\beta_{3t} NDTS_{it}\ \alpha_t + \alpha_t\beta_{4t} PROFITABILITY_{it} + \alpha_t\beta_{5t} LIQUIDITY_{it} + \alpha_t\beta_{6t} TANGIBILITY_{it} + \alpha_t\beta_{7t} FLEX_{it} + \alpha_t\beta_{8t} VOLATYLITY_{it} + \alpha_t\beta_{9t} (GDP) + \alpha_t\beta_{10t} (INFLATION) - \alpha_t Y_{it-1} + \varepsilon_{it} \qquad (3.8)$$

Rearranging equation (5.8), the equation (5.9) for the determination of actual leverage of the firm (Y_{it}) can be obtained as follows.

$$Y_{it} = \alpha_t\beta_{1t} SIZE_{it} + \alpha_t\beta_{2t} GROWTH_{it} + \alpha_t\beta_{3t} NDTS_{it}\ \alpha_t + \alpha_t\beta_{4t} PROFITABILITY_{it} + \alpha_t\beta_{5t} LIQUIDITY_{it} + \alpha_t\beta_{6t} TANGIBILITY_{it} + \alpha_t\beta_{7t} FLEX_{it} + \alpha_t\beta_{8t} VOLATYLITY_{it} + \alpha_t\beta_{9t} (GDP) + \alpha_t\beta_{10t} (INFLATION) + (1 - \alpha_t) Y_{it-1} + \varepsilon_{it} \qquad (3.9)$$

Equation 3.8 and 3.9 reflect the adjustment behavior of leverage of firms with financial constraint of over-leverage and under-leverage. Firms may deviate from their target leverage in the course of economic development when the adjustment rate is not equal to

1. When the adjustment rate is equal to 1, then the actual leverage is exactly same as the target leverage and no gap exists between them. In other words, the partial regression coefficient of the previous actual leverage will be significantly greater than 0 and different from 1 whenever the deviation from the target leverage of firms occurs.

Incorporating the proxies for the variables in equation 3.8 and 3.9, the empirical model for capital structure adjustment and actual capital structure of firms with the financial constraint of under-leverage or over-leverage in the case of positive or negative adjustment gaps is expressed as follows.

$$\Delta DR_{it} = \alpha_t\beta_{1t}InS_{it} + \alpha_t\beta_{2t}\Delta TA_{it} + \alpha_t\beta_{3t}EBITDTA_{it} + \alpha_t\beta_{4t}DEPTA_{it} + \alpha_t\beta_{5t}INVFATA_{it} + \alpha_t\beta_{6t}CR_{it} + \alpha_t\beta_{7t}\Delta EBITDTA_{it} + \alpha_t\beta_{7t}CTA_{it} + \alpha_t\beta_{9t}GDP_t + \alpha_t\beta_{10it}INFLATION - \alpha_t DR_{it-1} + \varepsilon_{it} \quad (3.10)$$

$$DR_{it} = \alpha_t\beta_{1t}InS_{it} + \alpha_t\beta_{2t}\Delta TA_{it} + \alpha_t\beta_{3t}EBITDTA_{it} + \alpha_t\beta_{4t}DEPTA_{it} + \alpha_t\beta_{5t}INVFATA_{it} + \alpha_t\beta_{6t}CR_{it} + \alpha_t\beta_{7t}\Delta EBITDTA_{it} + \alpha_t\beta_{7t}CTA_{it} + \alpha_t\beta_{9t}GDP_t + \alpha_t\beta_{10it}INFLATION + (1 - \alpha_t)DR_{it-1} + \varepsilon_{it} \quad (3.11)$$

The pecking order theory basically states that the cost of financing increases with asymmetric information. Financing comes from internal funds, debt and equity. When it comes to method of raising the capital, companies will prefer internal financing first, then after debt financing and issuing equity lastly. Raising equity, in this sense, can be viewed as a last resort according to pecking order theory. The pecking order theory developed by Stewart C. Myers argues that equity is a least preferred source of capital. This theory maintains that firms adhere to a hierarchy of financing sources and prefer internal

financing when available, and debt is preferred over equity if external financing is required. Thus, the form of debt a firm chooses can act as a signal of its need for external finance. Myers extends his research on pecking order theory of capital structure with Shyam-Sunder in 1994. They attempt to test the static trade-off theory against pecking order theory of capital structure. The static trade-off call for target debt ratio by a firm leveling between tax advantages of borrowed fund and the financial distress costs faced by the firm. Based on the financial data of 157 US firms from 1971 to 1989 the scholars come to a conclusion that the pecking order is still the first and effective order of describing the behavior of corporate financing. When the trade-off theory is tested independently, it is seen to be a good descriptor as well. But, when two models are put together, the coefficient and significance of pecking order variables do not change at all but the variables in trade-off model do. This indicates that firms plan to finance anticipated deficits with debt as recommended by the pecking order theory.

According to Shyam-Sunder and Myers (1999), in the context of pecking order theory, the need of external funds arises when there is an imbalance between internal cash flows, net of interest and taxes, and investment opportunities available to the business firms. If the internal cash flows exceed available investment opportunities there is no need of raising the funds externally. Hence, firms whose investment opportunities exhaust internally generated funds will go to the capital market to raise funds externally through debt or equity. According to Shyam-Sunder and Myers (1999) and Frank and Goyal (2003), theoretically, the total amount of debt capital raised and/or issuance of equity from one year to another year must be equal to the total deficit at the end of the year as given by the following equation:

$$\Delta D_{it} + \Delta E_{it} = DEF_{it} \quad (3.12)$$

Where,

ΔD_{it} = the debt issued or raised by firm i in year t.

ΔE_{it} = the net equity issued by firm i in year t.

DEF_{it} = the internal funds deficits of firm i in year t.

Based on the theoretical model describing the pecking order theory of capital structure management of the firms, the following is the empirical model that has been used to test whether pecking order theory explains the financing behavior of Nepalese firms. Shyam-Sunder and Myers (1999) suggest a test that is based on the pecking order's prediction concerning the type of external financing chosen to fill the financing deficit. If the pecking order theory holds, the deficit will be covered with new debt issued or raised.

Shyam-Sunder and Myers (1999) estimate the following regression model to examine the evidence for the pecking order theory of capital structure.

$$\Delta DTA_{it} = \alpha + \beta\, DEFTA_{it} + \varepsilon_{it} \quad (3.13)$$

Where,

α = the intercept of the equation.

ΔDTA_{it}= the net change in total debt scaled by total assets.

$DEFTA_{it}$= the internal funds deficit of firm scaled by total assets.

β =the coefficient of the independent variable ($DEFTA_{it}$)

ε_{it}=the error term

Following the Shyam-Sunder and Myers (1999) and Frank and Goyal (2003), the variables in equation 3.14 have been scaled by total assets as a precaution against

heteroskedasticity. Frank and Goyal (2003) argue that scaling is most often justified as a method of controlling for differences in firm size. If the pecking order theory holds, the financing deficit is fully covered by debt, which implies $\alpha = 0$ for the intercept term and the value of $\beta = 1$ for sensitivity coefficient of the independent variable of the model which is described in equation 3.14. In other words, following Shyam-Sunder and Myers (1999), Nuri and Archer (2001), Adedeji (2002), and Frank and Goyal (2003), this study tests the hypothesis that the slope coefficient of independent variable, financing deficit ($DEFTA_{it}$) is equal to one and the intercept (α) is equal to zero. Hence any internal fund deficiency is met from the raising debt capital first and if the source of debt capital exhausts the firms use new equity as last resort of source of funds. Therefore, a positive association is expected between new debt and internal fund deficiency.

The model specified in the equation 3.14 has been used in most of the previous studies relating to test of validity of pecking order theory in the developed countries. However, this model ignores other variables that might affect the decision of the firms relating to the use of debt capital in their capital structure especially the willingness of suppliers to supply debt capital to the firms (Adedeji, 2002). According to Adedeji, the best way to test pecking order theory is to add the deficit variable as one of the explanatory variables in the conventional leverage regression model that has been used to test the determinants of capital structure. If the suggestion of pecking order theory is correct, the financing deficit variable should wipe out the effects of the other explanatory variables in the conventional leverage regression model. If it does not, the firms take other variables into consideration when setting their leverage or debt level in their capital structure. The findings of Frank and Goyal (2003) and Adedeji (2002) have revealed by using the

conventional regression model, in the first differences, that the financing deficit is one factor among many that firms trade off when funding their investment.

Based on the above discussion, this study uses the following model to investigate the determinants of debt level in Nepalese firms. The financial deficit variable ($DEFTA_{it}$) has been added as one of the explanatory variables. According to the conventional regression model of determinates of capital structure, the debt level is the function of many variables which can be expressed as follow:

Leverage = f (Firm size, Growth opportunities, Non-debt tax shields Profitability, Liquidity, Asset tangibility, Financial flexibility, Volatility, GDP, Inflation, Deficits)

The above mentioned function can be expressed in empirical (operational) model as

$$DR_{it} = \alpha + \beta_1(\ln S_{it-1}) + \beta_2(\Delta TA_{it-1}) + \beta_3(DEPTA_{it-1}) + \beta_4(EBITDTA_{it-1}) + \beta_5(CR_{it-1}) + \beta_6(INVFATA_{it-1}) + \beta_7(CTA_{it-1}) + \beta_8(\Delta EBITDTA_{it-1}) + \beta_9(GDP_{it-1}) + \beta_{10}(INF_{it-1}) + \beta_{11}(DEFTA_{it-1}) + \varepsilon_{it} \quad (3.14)$$

Where,

DR_{it}	: Total debt to total assets
$\ln S_{it-1}$	: Size of the firm of previous year
ΔTA_{it-1}	: Growth opportunities of the firm of previous year
$DEPTA_{it-1}$	: Non-debt tax shield of previous year
$EBITDTA_{it-1}$	: Profitability of the firm of previous year
CR_{it-1}	: Liquidity of the firm of previous year
$INVFATA_{it-1}$	: Tangibility of the assets of previous year
CTA_{it-1}	: Financial flexibility of previous year
$\Delta EBITDTA_{it-1}$	: Earning volatility of the firm of previous year
GDP_{it-1}	: Change in gross domestic product of previous year
$INFLATION_{it-1}$	: Inflation of previous year
$DEFTA_{it-1}$	: the internal funds deficits of previous year
ε_{it}	: The error term.

Based on the above mentioned two models, this study attempts to examine whether the pecking order theory explain the financing behavior of the selected Nepalese enterprises.

3.6 Limitations of the study

Though this study has provided valuable insight relating to capital structure management practices in the selected Nepalese manufacturing enterprises, there are some limitations which may limit the generalization of the findings of this study. The followings are the limitation of this study.

This study aims at examining the issues relating to the capital structure of manufacturing enterprises. However, all the issues have not been tested in this study. This study is only confined to the examination of factors determining the capital structure of selected Nepalese enterprises. In addition, this study also deals with the testing which of the capital structure theories, trade-off theory or pecking order theory, explains the financial behavior of the selected firms.

The data problem is acute in Nepal. Even the financial statements of public enterprises published in the "Annual Reports of the Auditor General" are not readily available since they are treated as confidential. In order to make the study more fruitful, it is essential that data should be of frequent time interval. Here again, such type of weekly or monthly data could not be obtained and due to this the study has been forced to use the annual data which are available in profit and loss accounts and balance sheets prepared at the end of

fiscal year. The use of annual data in this study is thus likely to make the conclusions somewhat less valid and less reliable.

Since this study is based on twelve years data from 2000 to 2011 of the 25 firms from manufacturing sector, the limitation stems also from the period of study. Out of 25 firms, 15 firms are from private sector, listed firms in Nepal Stock Exchange, and the rest 10 firms are from public sector being owned by the government. During the study period, because of the political disturbances in the country, the selected enterprises were not in a position to perform their activities properly. This fact might have some undesirable effects in the functions of the selected firms and expected to be reflected in the financial statements prepared by them on which this study is based. During this study period, Nepal Stock Exchange has witnessed decrease in stock price index limiting the scope of stock market.

This study does not cover all the enterprises in the manufacturing sector. It, therefore, implies that the conclusions drawn are of a tentative nature and generalization of the findings of this study should be avoided for the entire manufacturing enterprises. This is another limitation of this study.

The required data has been extracted from the annual financial statement prepared by the firm itself and some data are from the records maintained by the Stock Exchange itself. So, the limitation comes from the data set. The reliability and accuracy of the data might affect the robustness of the results of this study. Though all efforts have been made to ensure the accuracy of the data, potential data problem may remain. In addition, some missing figures have been estimated as an average of the previous and following year's

related figures and some missing figures have been estimated on the basis of growth rate based on the previous figures.

The limitation of this study is also concerned with the use of proxy variables. The same variables have been measured by different authors in different ways. For example, size of the firm, which is considered as one of the significant determinant of the capital structure, is being measured in different ways in different studies. Firm size is usually measured as the logarithm of total assets or total sales. Following the Rajan and Zingales (1995), the size of the firm has been measured as the logarithm of sales in this study. Since there is no precise measurement of the variables affecting capital structure of the firms, the measurement of variables used in this study is based on the previous well recognized studies and theories. Although the proxy variables used are defined empirically and theoretically, they remain proxies and may not perfectly represent the theoretical proposition. However, problem relating to use of proxies is not only the problem of this study but also a problem common to all empirical studies in the field of capital structure of the firms.

Different studied have used different models to identify the factors affecting the capital structure and there are various models that can be used to analyze the data. In this study, following the Rajan and Zingales (1995), ordinary least square regression model has been used to analyze the collected data. This study does not consider all those variables identified as determinants of capital structure by previous empirical studies. Only eight firm-specific variables and only two macro-economic variables, expected GDP and expected inflation, have been considered in this study.

In order to measure the speed of adjustment to achieve the target debt ratio, this study assumes that the adjustment towards the target debt ratio occurs at symmetrical rates. No distinction is being made between the below-target debt ratio and the above-target debt ratio, suggesting that the adjustment costs as well as the benefits of increasing and reducing debt ratio are symmetrical. But, in reality, the cost associated to debt adjustment above and below the target debt ratios may not be same.

The limitation is also concerned with the survey. In any survey, it is likely that the potential respondents who do not respond on time may have a non-response bias. In addition, whatever the respondents said were believed to be true response. However, in order to test the reliability of the responses, Cronbach's Alpha test has been calculated and the values found to be acceptable limit. Another limitation of survey methodology is that it measures beliefs of the respondents and not necessarily actions. Finally, the results from the survey are based on the structured questionnaire and only the responses provided by 186 respondents. The responses have been collected from the practitioners working in Kathmandu valley.

CHAPTER FOUR
RESULTS AND DISCUSSION

Different capital structure theories suggest that there are determinants that may affect the firm's debt ratio, such as assets structure, profitability, earnings volatility, firm size, growth rate, financial flexibility, etc. The existing empirical studies on the issue of capital structure choice have analyzed the role of firm-specific factors determining the debt level of the firms and theories relating to capital structure management of the firms. However, the existing empirical studies in this field have been limited to the US and other developed countries, and received little attention in developing countries where capital markets are small, less developed, less competitive, and suffering from the lack of compatible regulations and sufficient supervision. Only in recent years, a few studies have addressed to the use of capital structure choice in developing countries. Some of those studies are Singh (1994); Booth et al (2001); Chen (2004).

According to Myers (2001), the financial decisions in developing countries are somehow different from those of developed ones because of their institutional differences such as the level of transparency and investor protection besides bankruptcy and tax law. In the light of this, this chapter is concerned with the presentation and discussion on the findings of this study with respect to the various issues of capital structure management of selected manufacturing firms in Nepal.

In order to discuss the findings from the analysis of secondary data, this chapter has been organized into six sections. Section 4.1 discusses on the patterns of capital structure of selected Nepalese enterprises. Sections 4.2 deals with the patterns of selected firm-

specific variables determining the capital structure of selected Nepalese enterprises. Section 4.3 describes the descriptive statistics of the data collected for the study. Section 4.4 has been designed to discuss on the various factors, which have been considered in this study, influencing the capital structure of selected firms. Section 4.5 is concerned with the examination of trade-off theory explaining the capital structure of selected Nepalese manufacturing firm by using the speed of adjustment model as suggested by the theory. Section 4.6 discusses on the most prominent theory on capital structure, pecking order theory, in providing the justification on the variation of the capital structure in the selected Nepalese manufacturing firms. Lastly, the chapter concludes with the concluding remarks of the findings of this study. The findings are based on the data collected for the period of 12 years from 2000 to 2011 from 25 manufacturing firms, out of which 15 firms are listed in NEPSE and 10 firms being run by government of Nepal. The firms listed in NEPSE have been termed as private firms and the firms run by the government as public firms in this study.

4.1 Patterns of capital structure

The central theme in capital structure literature is whether an optimal or at least a target capital structure exists. First of all, in this section, the structure and patterns of three debt ratios, short term debt ratio, long term debt ratio, and total debt ratio have been estimated and presented. All three debt ratios represent the percentage of total assets of the concerned firm. The computed short term debt ratios for the selected enterprises are presented in Table 4.1.

Table 4.1

Structure and patterns of the short term debt ratio, measured as percentage of total short term debt to total assets, of the selected enterprises for the period of 12 years from 2000 to 2011.

S.N	Enterprises	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Mean	St. Dev
1	Arun Vanaspati Udyog Limited	87.7	88.8	88.0	89.2	93.1	81.6	82.5	126.3	53.6	60.0	60.8	58.1	80.8	19.5
2	Bhrikuti Pulp and Paper Nepal Limited	25.4	35.9	64.9	73.8	87.9	71.6	86.9	86.2	101.7	68.9	140.0	160.7	83.7	36.5
3	Bottlers Nepal Balaju Limited	26.3	38.4	36.8	36.0	22.5	26.5	36.3	73.1	43.9	53.8	59.4	63.1	43.0	15.3
4	Bottlers Nepal Terai Limited	40.1	44.5	44.4	41.6	34.5	38.2	37.2	60.5	49.0	63.5	62.5	58.3	47.9	10.1
5	Fleur Himalayan Limited	50.0	65.9	155.0	160.5	164.8	185.3	199.5	215.2	200.9	207.2	142.8	164.4	159.3	50.4
6	Birat Shoe Limited	42.1	58.2	50.1	50.1	33.4	48.0	30.7	54.1	45.0	54.1	63.1	65.5	49.5	10.2
7	Himalayan Distillery Limited	18.4	23.7	24.6	36.0	39.9	48.0	55.3	65.9	65.0	62.1	50.7	52.5	45.2	15.9
8	Jyoti spinning Mills Limited	83.6	86.2	43.5	37.8	31.5	20.8	10.4	12.1	15.6	26.6	23.7	21.1	34.4	24.4
9	Nepal Bitumin and Barrel Udyog Limited	42.1	69.4	82.2	73.8	80.0	71.6	86.9	86.2	77.5	68.9	77.5	81.8	74.8	11.4
10	Nepal Khadya Udhyog Limited	50.4	56.9	84.3	95.4	99.5	95.9	101.6	99.1	99.5	99.4	124.9	134.2	95.1	22.6
11	Nepal Lube Oil Limited	39.5	38.4	58.5	65.7	56.9	60.6	65.7	63.8	64.6	74.5	67.6	71.0	60.6	10.8
12	Nepal Vanaspati Ghee	217.5	294.8	313.2	366.8	547.9	596.6	677.8	704.1	712.8	744.6	778.4	781.5	544.7	232.8
13	Raghupati Jute Mills	32.2	13.0	18.6	14.8	19.2	20.7	56.5	52.8	58.0	61.7	62.7	66.6	39.7	20.7
14	Shree Ram sugar mills	33.5	141.7	45.2	53.6	54.9	50.5	68.9	95.3	98.4	106.8	100.2	111.8	80.1	31.9
15	Unilever Nepal	57.9	63.4	86.7	83.8	97.3	90.7	55.7	60.5	64.8	77.8	87.5	85.7	76.0	14.0
16	Agriculture Input	81.2	75.5	84.6	76.5	77.7	72.5	85.5	54.6	72.8	79.2	80.2	80.1	76.7	7.7
17	Butwal Spinning Mills Limited	6.4	10.0	11.6	24.9	32.9	36.7	41.0	66.2	258.9	338.2	298.5	438.4	130.3	149.5
18	Dairy development	55.8	59.9	52.6	45.0	46.6	47.5	59.2	61.4	66.2	62.2	63.3	63.9	57.0	7.0
19	Gorakhkali Rubber Udhyog Limited	5.9	46.7	51.9	58.6	70.7	83.0	95.8	108.2	125.7	111.3	84.2	109.9	79.3	32.9
20	Hetauda Cement	95.4	110.6	121.7	119.8	122.4	120.5	118.3	119.4	123.3	127.3	131.5	135.8	120.5	9.8
21	Jadibuti	91.8	122.9	111.7	111.8	115.6	113.2	136.1	168.8	157.0	152.2	159.3	168.4	134.1	25.1
22	Nepal Aushadi	28.3	32.6	82.3	87.7	56.0	72.0	72.4	81.6	364.8	285.5	364.6	476.8	167.1	151.8
23	Nepal Foundry Company Ltd.	25.4	36.5	97.5	40.9	34.2	22.3	32.6	20.2	13.1	22.0	22.0	19.3	32.2	21.2
24	Nepal Orind Magnesite	358.9	363.5	391.4	402.8	678.9	428.2	441.1	452.1	462.6	483.2	500.5	492.5	454.7	81.5
25	Udayapur Cement	17.2	19.7	21.2	24.8	30.4	33.0	20.8	25.6	25.6	24.9	26.2	25.6	24.6	4.2
	Mean	64.52	79.88	88.90	90.87	109.15	101.42	110.19	120.53	136.81	140.64	145.28	159.48	111.65	40.69
	Standard Deviation	68.29	82.50	87.08	94.77	157.12	131.42	145.14	149.06	161.00	165.77	172.98	186.25	123.67	55.96

Source: Annexure 2

The average values of twelve years period within the firm in the table indicate that the short term debt ratio is largest for Nepal Vanaspati Ghee (544.7 percent), followed by Nepal Orind Magnesite (454.7 percent), Nepal Aushadi (167.1 percent), Fleur Himalayan Limited (159.3 percent), Jadibuti(134.1 percent), Butwal Spinning Mills Limited (130.3 percent), Hetauda Cement (120.5 percent) and so on. The average short term debt ratios of above mentioned firms are more that 100 percent. The results observed are because of accumulated losses. Since the total assets are net of accumulated losses, the amounts of debt are more than total assets. The short term debt ratio is smallest for Udayapur Cement (24.6 percent), followed by Nepal Foundry Company Ltd. (32.2 percent), Jyoti spinning Mills Limited (34.4 percent), Raghupati Jute Mills (39.7 percent), and so on. The year wise mean value of debt ratio indicates the industry average of the selected firms. Based on these figures, the short term debt ratio of the firms has been increasing year by year. The smallest average short term debt ratio is 64.52 percent in the year 2000 which has been increased to 159.48 percent in the year 2011.

Out of the twenty five selected enterprises, seven firms have been observed having short term debt ratio more than average short term debt ratio of 111.65 percent and the same of the remaining eighteen firms are below the average. The statistics of distribution of short term debt ratios clearly shows that the debt management in most of the selected firms is very poor and the firms have been using the excessive amount of short term debt in their capital structures.

The long term debt ratio has been measured as the percentage of total long term debt to total assets. The structures and patterns of long term debt ratio of selected enterprises is presented in Table 4.2.

Table 4.2

Structure and patterns of the long term debt ratio, measured as percentage of total long term debt to total assets, of the selected enterprises for the period of 12 years from 2000 to 2011.

S.N	Enterprises	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Mean	St. Dev
1	Arun Vanaspati Udyog Limited	41.3	35.3	30.0	29.1	18.4	42.0	63.9	89.9	310.6	305.5	356.4	324.2	137.2	139.8
2	Bhrikuti Pulp and Paper Nepal Limited	77.6	76.2	83.1	83.6	62.0	101.0	109.7	126.2	139.8	136.5	164.9	177.8	105.5	32.6
3	Bottlers Nepal Balaju Limited	0.0	0.0	0.0	0.0	0.0	0.0	9.5	0.0	21.1	11.9	5.0	0.0	4.0	6.8
4	Bottlers Nepal Terai Limited	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	Fleur Himalayan Limited	55.3	59.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.5	22.3
6	Birat Shoe Limited	79.0	81.0	80.0	80.0	53.3	73.6	53.0	86.6	76.3	82.5	79.5	81.6	75.0	11.3
7	Himalayan Distillery Limited	37.4	38.8	44.7	39.9	39.2	31.5	25.9	18.3	14.8	19.7	42.5	38.4	32.6	10.3
8	Jyoti spinning Mills Limited	47.2	46.5	67.8	74.9	81.4	78.8	84.3	93.9	81.6	80.2	85.1	90.3	73.7	15.6
9	Nepal Bitumin and Barrel Udyog Limited	79.0	83.4	90.9	83.6	104.9	101.0	109.7	126.2	131.3	136.5	131.3	138.2	107.1	21.5
10	Nepal Khadya Udhyog Limited	48.7	42.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.6	17.8
11	Nepal Lube Oil Limited	28.3	31.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.5	12.2
12	Nepal Vanaspati Ghee	122.3	0.0	0.0	4.6	7.4	4.6	1.6	0.0	0.0	0.0	0.0	0.0	11.7	34.9
13	Raghupati Jute Mills	100.0	28.3	24.7	25.3	19.3	19.6	5.1	8.7	6.2	4.0	13.4	23.6	23.2	26.9
14	Shree Ram sugar mills	45.9	142.6	46.2	41.0	39.5	34.1	31.9	24.5	31.2	46.1	33.9	43.7	47.0	32.5
15	Unilever Nepal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	Agriculture Input	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17	Butwal Spinning Mills Limited	294.5	319.4	367.0	316.9	210.1	199.7	165.2	311.0	377.9	427.8	402.8	415.7	308.4	85.9
18	Dairy development	21.6	23.5	21.1	11.1	10.9	11.4	11.3	0.8	0.4	4.2	1.8	2.1	10.0	8.5
19	Gorakhkali Rubber Udhyog Limited	83.6	66.4	69.4	75.7	79.9	82.1	84.7	88.0	92.7	88.6	78.0	86.3	80.8	8.1
20	Hetauda Cement	7.0	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	2.4
21	Jatibuti	77.4	97.7	82.5	74.8	69.2	66.3	68.7	70.4	74.3	64.6	69.8	67.4	74.1	9.3
22	Nepal Aushadi	35.7	42.1	57.6	76.3	67.3	206.6	249.8	143.1	102.9	170.2	237.9	246.3	135.4	77.4
23	Nepal Foundry Company Ltd.	0.0	0.0	0.0	5.6	5.6	5.6	5.0	4.6	4.5	4.9	4.8	4.7	5.0	0.4
24	Nepal Orind Magnesite	231.1	238.4	258.4	255.9	142.9	252.8	253.8	248.3	247.0	253.9	229.4	221.6	236.1	31.7
25	Udayapur Cement	92.7	95.7	94.5	97.6	96.4	96.0	39.3	39.4	39.6	40.0	41.4	40.3	67.7	29.0
	Mean	60.6	58.6	53.4	52.0	42.1	53.2	53.0	59.9	76.1	78.0	81.8	84.4	62.1	27.8
	Standard Deviation	68.6	74.5	83.5	76.3	52.2	70.1	71.6	80.0	106.8	109.8	113.2	114.4	75.3	35.3

Source: Annexure 3

The average values of twelve years period within the firm in the table indicate that the long term debt ratio is largest for Butwal Spinning Mills Limited(308.4 percent), followed by Nepal Orind Magnesite (236.1 percent), Arun Vanaspati Udyog Limited(137.2 percent), Nepal Aushadi (135.4 percent), Bhrikuti Pulp and Paper Nepal Limited (105.5 percent), and so on. The average long term debt ratios of above mentioned firms are more that 100 percent. The long term debt ratio is smallest for Hetauda Cement (1.0 percent), followed by Bottlers Nepal Balaju Limited (4 percent), Nepal Lube Oil Limited (5.5 percent), Nepal Khadya Udhyog Limited (7.6 percent), and so on. The year wise mean value of debt ratio indicates the industry average of the selected firms. Based on these figures, the long term debt ratio of the firms has been increasing year by year. The smallest average short term debt ratio is 42.1 percent in the year 2004 and the largest value for the same is 84.4 percent in the year 2011.

Out of the twenty five selected enterprises, ten firms have been observed having long term debt ratio more than average long term debt ratio of 62.1 percent and the same of the remaining fifteen firms are below the average. The statistics of distribution of long term debt ratios clearly shows that the debt management in most of the selected firms is very poor and the firms have been using the excessive amount of long term debt in their capital structures. Besides, there are three firms namely Bottlers Nepal Terai Limited, Unilever Nepal, and Agriculture Input which never had used long term debt during the study period of twelve years.

The total debt ratio has been measured as the percentage of total debt to total assets. The structures and patterns of the distribution of total debt ratio of selected enterprises are presented in Table 4.3.

Table 4.3

Structure and patterns of the total debt ratio, measured as percentage of total debt to total assets, of the selected enterprises for the period of 12 years from 2000 to 2011.

S.N	Enterprises	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Mean	St. Dev
1	Arun Vanaspati Udyog Limited	129.0	124.1	118.0	118.3	111.5	123.6	146.4	216.2	364.2	365.5	417.2	382.3	218.0	125.0
2	Bhrikuti Pulp and Paper Nepal Limited	103.0	112.1	148.0	157.4	150.0	172.6	196.7	212.4	241.5	205.3	304.9	338.4	195.2	71.8
3	Bottlers Nepal Balaju Limited	26.3	38.4	36.8	36.0	22.5	26.5	45.7	73.1	65.0	65.7	64.5	63.1	47.0	18.3
4	Bottlers Nepal Terai Limited	40.1	44.5	44.4	41.6	34.5	38.2	37.2	60.5	49.0	63.5	62.5	58.3	47.9	10.6
5	Fleur Himalayan Limited	105.3	124.9	155.0	160.5	164.8	185.3	199.5	215.2	200.9	207.2	142.8	164.4	168.8	34.1
6	Birat Shoe Limited	121.0	139.2	130.1	130.1	86.7	121.5	83.7	140.7	121.3	136.7	142.6	147.1	125.1	20.5
7	Himalayan Distillery Limited	55.8	62.5	69.3	75.9	79.2	79.5	81.3	84.2	79.8	81.8	93.2	90.9	77.8	10.8
8	Jyoti spinning Mills Limited	130.8	132.7	111.3	112.7	113.0	99.6	94.7	106.1	97.1	106.8	108.8	111.4	110.4	11.7
9	Nepal Bitumin and Barrel Udyog Limited	121.0	152.7	173.1	157.4	184.9	172.6	196.7	212.4	208.9	205.3	208.9	219.9	184.5	29.9
10	Nepal Khadya Udhyog Limited	99.1	99.4	84.3	95.4	99.5	95.9	101.6	99.1	99.5	99.4	124.9	134.2	102.7	13.5
11	Nepal Lube Oil Limited	67.8	70.1	58.5	65.7	56.9	60.6	65.7	63.8	64.6	74.5	67.6	71.0	65.6	5.2
12	Nepal Vanaspati Ghee	139.9	294.8	313.2	371.3	555.3	601.2	679.5	704.1	712.8	744.6	778.4	781.5	556.4	220.4
13	Raghupati Jute Mills	132.2	41.3	43.3	40.0	38.5	40.4	61.6	61.5	64.2	65.7	76.1	90.2	62.9	27.3
14	Shree Ram sugar mills	79.5	284.3	91.4	94.6	94.4	84.6	100.8	119.8	129.6	152.9	134.1	155.5	126.8	56.0
15	Unilever Nepal	57.9	63.4	86.7	83.8	97.3	90.7	55.7	60.5	64.8	77.8	87.5	85.7	76.0	14.6
16	Agriculture Input	81.2	75.5	84.6	76.5	77.7	72.5	85.5	54.6	72.8	79.2	80.2	80.1	76.7	8.1
17	Butwal Spinning Mills Limited	300.9	329.4	378.7	341.8	242.9	236.4	206.2	377.3	636.8	766.0	701.4	854.0	447.6	227.2
18	Dairy development	77.4	83.4	73.7	56.1	57.5	58.8	70.5	62.2	66.5	66.4	65.0	66.0	67.0	8.2
19	Gorakhkali Rubber Udhyog Limited	89.4	113.0	121.3	134.3	150.6	165.1	180.5	196.3	218.4	199.9	162.2	196.2	160.6	39.9
20	Hetauda Cement	102.3	111.9	121.7	119.8	122.4	120.5	118.3	119.4	123.3	127.3	131.5	135.8	121.2	8.6
21	Jatibuti	169.2	220.5	194.2	186.6	184.8	179.5	204.8	239.2	231.3	216.8	229.1	235.8	207.7	24.3
22	Nepal Aushadi	64.0	74.8	139.9	164.0	123.3	278.7	322.2	224.7	467.6	455.7	602.5	723.1	303.4	215.6
23	Nepal Foundry Company Ltd.	25.4	36.5	97.5	46.5	39.8	27.9	37.6	24.7	17.6	27.0	26.7	24.0	35.9	21.0
24	Nepal Orind Magnesite	590.0	601.9	649.8	658.7	821.9	681.1	694.9	700.4	709.6	737.2	729.9	714.2	690.8	62.3
25	Udayapur Cement	109.9	115.4	115.7	122.4	126.8	128.9	60.1	65.0	65.2	64.9	67.6	65.9	92.3	29.2
	Mean	118.3	137.5	141.4	140.7	148.5	158.7	166.8	186.4	213.8	212.9	221.2	237.5	173.6	54.4
	Standard Deviation	108.5	121.4	126.9	131.3	168.3	153.9	166.7	177.6	208.4	215.9	222.7	242.7	158.2	69.6

Source: Annexure 4

The average values of twelve years period within the firm in the table indicate that the total debt ratio is largest for Nepal Orind Magnesite(690.8 percent), followed by Nepal Vanaspati Ghee (556.4 percent), Butwal Spinning Mills Limited(447.6 percent), Nepal Aushadi (303.4 percent), Arun Vanaspati Udyog Limited(218 percent), and so on. The average total debt ratios of above mentioned firms are more that 100 percent. The total debt ratio is smallest for Nepal Foundry Company Ltd. (35.9 percent), followed by Bottlers Nepal Balaju Limited (47 percent), Bottlers Nepal Terai Ltd. (47.9 percent), Raghupati Jute Mills (62.9 percent), and so on. The year wise mean value of debt ratio indicates the industry average of the selected firms. Based on these figures, the total debt ratio of the firms has been increasing year by year. The smallest average total debt ratio is 118.3 percent in the year 2000 and the largest value for the same is 237.5 percent in the year 2011.

Out of the twenty five selected enterprises, eight firms have been observed having total debt ratio more than average total debt ratio of 173.6 percent and the same of the remaining seventeen firms are below the average. There are only ten firms whose total debt ratios are less than 100 percent. The statistics of distribution of total debt ratios clearly shows that the debt management in most of the selected firms is very poor and the firms have been using the excessive amount of debt in their capital structures.

One of the reasons of this observation may be the increase in accumulated profit. Since the debt ratios are scaled by total assets, net of accumulated losses, the increase in accumulated losses reduce the value of assets resulting the increasing the debt ratios. According to Pradhan et al. (2002), the financial distress in the Nepalese public enterprises is alarming and more recently, the operating losses incurred by these

enterprises amount to over Rs. 2,100 million per year. Because of such a huge losses decrease the value of assets and results in increasing the debt ratios. Another reason may be the ineffective use of debt capital in Nepalese enterprises which results the observed high debt ratios. The average of all the three ratios, short term, long term, and total debt ratios have been presented in the Figure 4.1.

Figure 4.1

Figure showing the trend of average short term debt ratio, long term debt ratio and total debt ratio

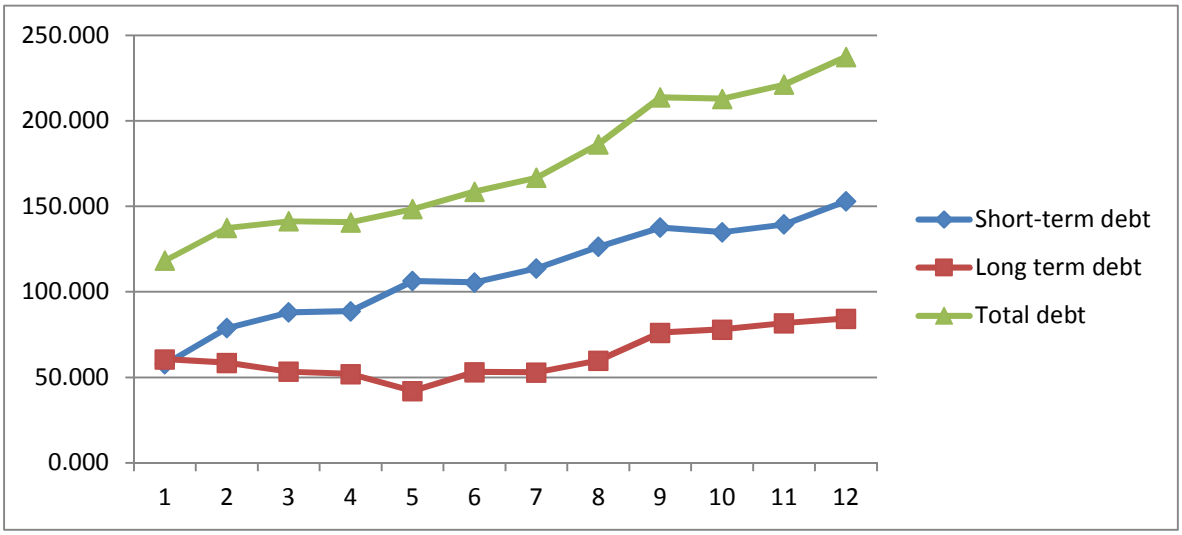


Figure 4.1 presents the trends of average of total short term debt ratio, total long term debt ratio, and total debt ratio over the period 12 years from 2000 to 2011.

In the Figure 4.1, X-axis measures the period starting from 2000 to 2011. The value 1 stands for year 2000 and the value 12 stands for year 2011. Similarly, Y-axis measures average debt ratio in percentage of total assets of all selected 25 firms. The Figure 4.1 presents the trends of all three types of debt ratios, short term debt, long term debt, and total debt ratio of twenty seven selected firms for the period of twelve years from 2000 to 2011. The figure depicts the trend line of average short term debt ratio is above that of long term debt ratio which indicates the selected firms have been using more short term

debt than the long term debt in their capital structure throughout the study period. Another observation that can be observed from the figure is that the use of long term debt for the period of first few years has been decreasing then after it seems to be increasing in the remaining period. This clearly indicates that the selected Nepalese firms have been using more short term debt than long term debt.

4.2 Structure and pattern of firm-specific factors

The capital structure theories and empirical studies have identified various firm-specific and macro-economic factors as determinants of debt ratio of the firm. The debt ratio increases with fixed assets, non-debt tax shields, investment opportunities, and firm size. By contrast, debt ratio decreases with volatility, advertisement expenditures, probability of bankruptcy, profitability, and uniqueness of the product (Harris and Raviv, 1991). Similarly, Frank and Goyal (2009) find a positive relationship of debt ratio with industry debt ratio, tangible assets, size of the firm, and expected inflation and a negative relation with profitability and dividend. This study has considered eight different firm-specific variables and two macro-economic variables as determinants of debt ratio.

The size of the firm is considered as one of the most important determinant of capital structure of a firm. The trade-off theory predicts an inverse relationship between size and the probability of bankruptcy, and hence a positive relationship between size and debt ratio. This study has considered the size as one of the factors determining the debt ratio of selected Nepalese firms and the size has been measured as the logarithm of sales of the firms consistent with the Titman and Wessels (1988). The structure and pattern of the size of the firms have been presented in Table 4.4.

Table 4.4

Structure and patterns of the size of the firm, measured as the natural logarithm of sales, of the selected enterprises for the period of 12 years from 2000 to 2011.

S.N	Variables	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Mean	St. Dev
1	Arun Vanaspati Udyog Limited	19.47	19.71	20.29	20.05	20.28	20.22	19.94	19.61	18.69	17.29	17.46	18.13	19.26	1.10
2	Bhrikuti Pulp and Paper Nepal Limited	20.01	20.30	20.18	20.37	20.24	20.24	20.27	20.42	20.37	20.56	20.39	20.58	20.33	0.16
3	Bottlers Nepal Balaju Limited	19.74	19.84	20.10	20.23	20.26	20.24	20.25	20.27	20.43	20.73	21.19	21.34	20.38	0.48
4	Bottlers Nepal Terai Limited	19.91	20.09	19.95	19.96	19.88	19.81	19.69	20.00	19.98	20.25	20.56	20.64	20.06	0.29
5	Fleur Himalayan Limited	16.43	16.80	16.40	17.01	16.74	16.53	17.21	17.39	17.56	17.59	19.29	19.79	17.39	1.09
6	Birat Shoe Limited	17.41	17.63	17.32	16.65	15.76	17.70	18.25	16.78	16.87	16.88	17.98	17.30	17.21	0.67
7	Himalayan Distillery Limited	18.14	18.37	19.13	19.57	19.93	20.09	20.30	20.28	20.28	20.73	20.98	21.21	19.92	0.96
8	Jyoti spinning Mills Limited	20.29	20.33	20.29	20.40	20.39	20.57	20.41	20.46	20.87	21.29	20.39	20.21	20.49	0.30
9	Nepal Bitumin and Barrel Udyog Ltd.	16.89	17.18	17.04	17.32	17.21	17.17	17.50	17.58	17.73	17.84	18.70	18.39	17.55	0.55
10	Nepal Khadya Udhyog Limited	20.17	19.81	19.95	19.73	19.79	19.62	20.01	20.24	20.24	20.32	20.50	20.59	20.08	0.31
11	Nepal Lube Oil Limited	18.49	18.10	18.73	18.60	18.25	18.59	18.82	19.03	18.94	19.27	19.65	20.04	18.87	0.56
12	Nepal Vanaspati Ghee	18.76	19.32	19.86	19.24	18.53	18.16	18.18	16.69	17.52	18.41	18.58	18.17	18.45	0.84
13	Raghupati Jute Mills	19.38	19.50	19.86	19.72	19.76	19.99	19.98	20.30	20.21	20.32	20.77	20.43	20.02	0.41
14	Shree Ram sugar mills	19.94	20.30	20.08	20.10	20.23	19.86	20.28	20.15	20.43	20.09	20.44	20.32	20.19	0.18
15	Unilever Nepal	19.66	19.90	20.94	21.15	21.12	21.11	21.32	21.49	21.69	21.84	21.99	21.84	21.17	0.73
16	Agriculture Input	19.04	19.33	20.83	19.69	20.28	19.54	20.01	18.90	18.70	21.17	21.57	20.48	19.96	0.92
17	Butwal Spinning Mills Limited	18.38	18.46	18.23	16.29	14.79	18.86	19.29	16.17	16.17	16.17	16.68	16.34	17.15	1.41
18	Dairy development	21.12	21.16	21.20	21.19	21.22	21.24	21.31	21.51	21.69	21.80	21.91	22.02	21.45	0.32
19	Gorakhkali Rubber Udhyog Limited	19.78	19.83	19.76	19.81	19.68	19.65	19.81	19.71	19.54	19.98	20.19	20.27	19.83	0.22
20	Hetauda Cement	19.90	20.21	19.85	20.30	20.31	20.30	20.38	20.34	20.36	20.35	20.35	20.65	20.27	0.21
21	Jatibuti	17.34	17.57	17.68	17.64	17.67	17.80	17.80	17.78	17.90	18.10	18.12	18.36	17.81	0.28
22	Nepal Aushadi	17.66	18.22	17.91	18.01	17.76	17.73	17.78	17.38	16.84	16.04	15.27	16.40	17.25	0.91
23	Nepal Foundry Company Ltd.	16.10	16.25	16.39	16.54	16.40	16.56	16.49	16.49	16.79	17.01	17.03	17.25	16.61	0.34
24	Nepal Orind Magnesite	16.56	17.04	16.22	16.56	16.34	16.67	16.86	16.89	16.95	16.56	15.01	15.70	16.45	0.58
25	Udayapur Cement	20.02	20.07	20.39	20.06	19.98	20.12	20.38	20.04	20.13	20.33	20.39	20.64	20.21	0.21
	Mean	18.82	19.01	19.14	19.04	18.91	19.13	19.30	19.03	19.07	19.23	19.41	19.48	19.13	0.56
	Standard Deviation	1.402	1.339	1.536	1.554	1.820	1.444	1.390	1.669	1.663	1.852	1.951	1.808	1.511	0.34

Source: Annexure 5

The average value of the logarithm of sales is largest for Dairy Development (21.25), followed by Unilever Nepal (21.17), Jyoti spinning Mills Limited (20.49), Bottlers Nepal Balaju Limited (20.38), Bottlers Nepal Terai Limited (20.33), Hetauda Cement (20.27), Udayapur Cement (20.21), and so on. The average value of logarithm of sales is lowest for Nepal Orind Magnesite (16.45), followed by Nepal Foundry Company Limited (16.61), Butwal Spinning Mills Limited (17.15), Nepal Aushadi (17.25), and so on. Based on the average sales, Dairy Development Corporation is the largest firm and Nepal Orind Magnesite is the smallest firm among the selected firms. With the figures of standard deviation, the sizes of the sales of most of the firms do not seem to change significantly during the period of study.

Size of the firm can also be regarded as a proxy for information asymmetry between firm insiders and capital markets. The large firms are said to be more closely observed by analysts and hence they should be more capable of issuing informational sensitive equity capital. Accordingly, the pecking order theory predicts a negative relationship between debt ratio and size of the firm, with larger firms exhibiting increasing preference for equity relative to debt capital. Whereas, the trade-off theory predicts positive relationship between debt ratio and size of the firm as bigger firms are considered having less chances of going into bankruptcy and they are supposed to use more debt capital. During the study period the sizes of the firms remain more or less same whereas, the average debt ratio has been increased drastically during the study period.

The growth of the firm is another factor considered in this study as determinant of capital structure and has been measured as the percentage change in total assets. The structure and pattern of growth is presented in Table 4.5.

Table 4.5

Structure and patterns of the growth, measured as the percentage change in total assets of the selected enterprises, for the period of 12 years from 2000 to 2011.

S.N	Variables	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Mean	St. Dev
1	Arun Vanaspati Udyog Limited	-19.9	15.7	12.1	-1.6	8.1	-8.0	-20.3	-26.9	-0.9	7.4	-9.8	-17.8	-5.16	14.179
2	Bhrikuti Pulp and Paper Nepal Limited	5.6	-5.6	-3.3	-3.2	-10.0	-4.6	-6.1	-8.9	-9.6	-2.0	-17.5	-8.5	-6.15	5.597
3	Bottlers Nepal Balaju Limited	-0.6	1.8	24.3	0.3	-16.4	11.5	-11.9	15.5	-14.2	18.1	18.3	26.6	6.09	15.077
4	Bottlers Nepal Terai Limited	3.4	15.6	12.4	-4.9	-12.6	8.2	-32.3	24.6	-16.7	36.9	43.8	21.3	8.31	22.348
5	Fleur Himalayan Limited	-9.1	-5.6	-5.7	13.0	4.2	-6.0	1.5	-1.3	17.3	2.2	10.3	41.4	5.17	14.058
6	Birat Shoe Limited	12.2	-4.1	4.1	4.1	36.1	35.0	5.4	26.9	3.6	2.3	3.5	4.7	11.15	13.610
7	Himalayan Distillery Limited	-3.5	-4.0	-4.7	10.1	-2.2	6.1	-1.1	-6.0	26.0	6.3	1.6	-2.4	2.19	9.049
8	Jyoti spinning Mills Limited	1.5	-2.3	-7.8	-1.8	-1.5	-1.7	-3.7	-10.9	-2.7	-2.3	8.7	6.8	-1.48	5.374
9	Nepal Bitumin and Barrel Udyog Limited	12.2	-3.3	-6.9	-3.2	-6.1	-4.6	-6.1	-8.9	-3.5	2.0	-3.5	1.8	-2.51	5.629
10	Nepal Khadya Udhyog Limited	6.1	-2.2	6.6	-6.9	-1.9	11.3	1.4	8.3	-24.1	28.1	2.7	24.3	4.48	13.702
11	Nepal Lube Oil Limited	-5.7	-7.1	10.5	27.3	-16.7	7.9	11.4	-2.7	5.4	5.2	2.6	3.6	3.48	11.061
12	Nepal Vanaspati Ghee	5.2	26.8	-6.7	-11.7	-37.8	-3.5	-6.6	-1.3	0.1	-2.9	-4.2	-3.6	-3.83	14.398
13	Raghupati Jute Mills	-1.4	2.6	6.7	-2.8	1.3	5.8	7.6	3.8	2.3	-3.1	3.0	2.1	2.33	3.483
14	Shree Ram sugar mills	21.8	-9.2	3.0	7.0	-5.8	-7.6	-6.5	10.0	-16.6	-18.2	-8.3	7.6	-1.90	11.856
15	Unilever Nepal	-5.6	16.5	18.6	-12.9	-10.9	11.4	3.9	-0.2	-1.9	4.8	-3.1	-8.0	1.05	10.307
16	Agriculture Input	2.3	-22.2	4.4	-14.0	-0.1	-9.6	3.4	-16.3	13.9	13.6	8.0	8.9	-0.64	12.064
17	Butwal Spinning Mills Limited	-9.1	-7.4	-12.7	-12.5	3.2	21.2	9.5	5.6	5.1	-12.6	-3.8	-1.7	-1.28	10.535
18	Dairy Development Corporation	-2.5	-8.6	10.9	4.6	-0.1	-5.8	-3.8	19.0	11.5	8.9	13.2	11.2	4.87	8.828
19	Gorakhkali Rubber Udhyog Limited	33.6	-7.4	-3.2	-13.4	-6.2	-5.7	-2.9	-2.9	-3.9	17.9	10.5	14.6	2.58	13.613
20	Hetauda Cement	-7.0	-8.0	-6.3	4.4	-0.9	4.6	0.0	3.7	4.7	5.3	4.4	3.5	0.70	5.082
21	Jatibuti	-9.9	-20.8	18.4	10.4	8.1	4.3	-3.4	-2.4	16.9	15.0	9.8	10.3	4.71	11.774
22	Nepal Aushadi	8.6	9.2	-6.0	8.0	15.7	-31.8	-8.2	33.2	-35.3	28.7	-29.5	-19.8	-2.26	23.278
23	Nepal Foundry Company Ltd.	6.5	5.5	8.0	-7.3	0.1	-0.6	12.1	9.7	0.2	5.3	6.8	5.5	4.31	5.315
24	Nepal Orind Magnesite	8.4	1.2	-5.0	0.3	8.8	-43.9	0.4	0.3	1.3	-0.9	-1.0	4.7	-2.10	13.741
25	Udayapur Cement	3.7	-4.8	-2.7	-5.9	-0.3	-0.9	1.8	-0.8	-0.5	-1.0	-4.3	-1.9	-1.47	2.711
	Mean	3.22	0.44	2.19	-0.08	-1.55	0.19	-1.33	1.94	0.89	8.02	2.60	5.88	1.87	11.43
	Standard Deviation	11.20	12.80	13.28	9.87	13.21	14.83	9.79	15.27	14.70	13.90	12.79	13.12	4.62	5.83

Source: Annexure 1

Table 4.5 depicts the structure and patterns of the growth factor of the firms. In most instances, growth opportunities are measured either using the ratio of market value to book value of the share price or the change in the value of total assets. In this study the change in total assets has been taken as a proxy to measure the growth of the firms. In addition, the table presents the mean growth and the standard deviation of distribution. Based on the figures, the average growth rate is highest for Birat Shoe Limited (11.15 percent), followed by Bottlers Nepal Terai (8.31 percent), Bottlers Nepal Balaju Limited (6.09 percent), Fleur Himalayan Limited (5.17 percent), Dairy Development Corporation (4.87 percent), Nepal Khadya Udhyog Limited (4.48 percent), and so on. The average growth is lowest, excluding the negative growth, for Hetauda Cement (0.70 percent), followed by Unilever Nepal (1.05 percent), Himalayan Distillery Limited (2.19 percent), Raghupati Jute Mills (2.33 percent).

The debt-related agency costs are higher for firms with substantial growth opportunities. Accordingly, the trade-off theory predicts that firms with more investment opportunities have less leverage because they have strong incentives to avoid underinvestment and asset substitution that can arise from stockholder-bondholder agency conflicts. This notion is further supported by Jensen's (1986) free cash flow theory, which predicts that firms with more investment opportunities have less need for the disciplining effect of debt payments to prevent managerial squandering. But, as opposed to the theory, the total debt ratio has been increasing in the selected firms with a low growth rate.

Table 4.6 presents the structure and patterns of the profitability of the firms with average profitability and standard deviation of the distribution of the profitability. The average profitability of the firms under this study ranges from 2.32 percent for Nepal Khadya

Table 4.6

Structure and pattern of the profitability, measured as the percentage of earnings before depreciation, interest and tax to total assets, of the selected enterprises for the period of 12 years from 2000 to 2011.

S.N	Variables	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Mean	St. Dev
1	Arun Vanaspati Udyog Limited	23.52	22.95	26.08	25.51	46.62	32.69	27.14	47.34	27.75	32.16	14.87	24.93	29.30	9.43
2	Bhrikuti Pulp and Paper Nepal Limited	11.60	23.67	26.51	29.69	29.89	32.43	38.97	37.34	35.73	42.73	44.21	46.70	33.29	9.89
3	Bottlers Nepal Balaju Limited	26.85	31.08	31.24	36.70	38.72	39.95	40.19	28.03	28.98	30.77	33.79	29.66	33.00	4.75
4	Bottlers Nepal Terai Limited	22.75	30.36	31.63	27.30	27.99	30.09	53.62	36.07	35.43	21.74	21.70	26.29	30.42	8.74
5	Fleur Himalayan Limited	20.13	13.93	14.85	16.61	22.82	19.36	24.99	24.68	32.62	34.07	32.45	12.78	22.44	7.52
6	Birat Shoe Limited	20.59	26.63	23.61	23.61	15.74	22.40	14.73	25.49	21.50	25.24	29.68	32.60	23.49	5.12
7	Himalayan Distillery Limited	13.43	18.10	17.63	16.12	17.09	21.01	22.15	25.23	19.20	22.19	24.91	24.01	20.09	3.75
8	Jyoti spinning Mills Limited	30.71	31.30	27.80	29.24	31.43	36.33	35.19	41.97	35.76	31.95	27.80	26.80	32.19	4.41
9	Nepal Bitumin and Barrel Udyog Limited	20.59	28.10	33.76	29.69	33.52	32.43	38.97	37.34	40.04	42.73	40.04	36.90	34.51	6.22
10	Nepal Khadya Udhyog Limited	5.08	4.05	0.14	-6.12	1.81	7.84	-1.45	5.01	3.26	2.09	3.85	2.29	2.32	3.59
11	Nepal Lube Oil Limited	21.27	28.44	17.71	21.50	27.17	28.19	26.14	32.80	22.41	20.71	25.31	21.30	24.41	4.29
12	Nepal Vanaspati Ghee	37.04	61.49	58.03	40.62	21.87	20.98	20.80	20.37	19.89	24.24	24.41	24.32	31.17	14.91
13	Raghupati Jute Mills	62.52	20.64	16.64	25.79	26.14	26.35	23.70	22.33	24.04	26.60	9.39	11.70	24.65	13.25
14	Shree Ram sugar mills	21.96	49.11	17.49	23.85	16.57	9.51	38.23	44.20	35.02	32.23	37.15	34.80	30.01	12.05
15	Unilever Nepal	23.66	26.09	26.02	33.34	45.72	49.84	29.84	51.59	52.26	51.05	48.38	40.86	39.89	11.32
16	Agriculture Input	15.14	11.67	25.80	7.28	14.28	12.93	11.64	25.37	41.53	26.59	20.86	17.40	19.21	9.42
17	Butwal Spinning Mills Limited	17.57	20.48	18.82	17.90	26.99	26.57	25.07	33.18	30.57	8.42	19.49	21.30	22.20	6.70
18	Dairy Development Corporation	39.51	34.42	22.21	29.73	21.26	32.70	28.10	41.73	38.31	36.05	38.69	37.68	33.36	6.74
19	Gorakhkali Rubber Udhyog Limited	32.63	32.89	35.58	31.46	34.09	35.49	35.60	36.29	35.55	28.97	38.33	-29.80	28.92	18.66
20	Hetauda Cement	44.25	42.16	42.93	40.53	38.10	34.51	39.46	36.99	39.80	42.82	46.08	49.58	41.43	4.12
21	Jatibuti	65.79	66.15	53.09	62.73	61.83	62.45	63.68	62.56	56.46	62.75	60.59	53.80	60.99	4.30
22	Nepal Aushadi	38.90	41.53	41.89	42.54	30.21	32.95	39.06	33.18	40.10	28.91	40.03	38.60	37.32	4.73
23	Nepal Foundry Company Ltd.	14.70	12.50	16.30	13.31	10.23	14.44	22.19	24.60	19.09	20.08	21.49	21.31	17.52	4.53
24	Nepal Orind Magnesite	20.12	17.65	17.30	17.56	9.54	17.40	17.53	18.05	19.20	18.99	18.78	18.42	17.55	2.67
25	Udayapur Cement	25.25	27.54	29.76	29.67	29.26	32.89	19.69	24.65	24.44	27.82	29.65	27.30	27.33	3.44
	Mean	26.67	28.37	27.41	27.12	27.93	29.19	30.12	33.21	31.25	30.21	30.31	26.28	29.01	7.37
	Standard Deviation	14.04	14.22	12.30	14.22	12.30	12.39	13.63	12.08	11.18	12.63	12.68	16.19	10.50	4.12

Source: Annexure 6

Udyog to 61 percent for Jadibuti. The average profitability is the highest for Jadibuti (60.99 percent), followed by Hetauda Cement (41.43 percent), Unilever (39.89 percent), Nepal Aushadi (37.32 percent), Nepal Bitumin and Barrel Udyog Lld. (34.51 percent), Dairy Development Corporation (33,36), and so on. The average profitability is lowest for Nepal Khadya Udyog Ltd. (2.29 percent), followed by Nepal Foundry Company Ltd.(17.52 percent), Nepal Orind Magnesite (17.55 percent), Agriculture Input (19.21 percent), Himalayan Distillery Limited (20.09 percent), and so on. Similarly, the variation in the profitability within the firms ranges from 2.67 percent for Nepal Orind Magnesite to 18.66 percent for Nepal Vanaspati Ghee. Based on the figures of standard deviation, the profitability within the firms seems to be consistent. Besides, the industry average profitability more or less remains stable. The range of industry average profitability is 26.67 percent in the year 2000 and the same is 33.21 percent, which is the highest in the year 2007.

According to the trade-off theory, the expected bankruptcy costs decline when profitability increases. The deductibility of interest payment for tax purposes induces more profitable firms to finance with debt. Similarly, in the agency model of Jensen and Meckling (1976), higher leverage helps to control agency problem by forcing managers to pay out more of the firm's excess cash. The strong commitment to use a larger fraction of pre-interest earnings for debt payments suggests a positive relationship between leverage and profitability. In sharp contrast, the pecking order model predicts that higher earnings should result in less leverage.

Table 4.7 reveals the structure and patterns of non-debt tax shields of the firms along with mean and standard deviation of the distribution of each firm. The non-debt tax shield has

Table 4.7

Structure and patterns of the non-debt tax shields (measured as the percentage of depreciation expenses to total assets) of the selected enterprises for the period of 12 years from 2000 to 2011.

S.N	Variables	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Mean	St. Dev
1	Arun Vanaspati Udyog Limited	1.758	1.698	3.313	3.826	1.505	1.683	2.127	3.121	6.352	5.908	1.910	4.723	3.160	1.714
2	Bhrikuti Pulp and Paper Nepal Limited	0.980	6.553	6.772	7.022	7.834	8.235	8.651	8.334	9.154	9.033	11.118	12.100	7.982	2.753
3	Bottlers Nepal Balaju Limited	5.131	5.936	5.584	6.079	7.408	5.701	8.447	5.451	6.898	6.063	5.416	4.782	6.075	1.039
4	Bottlers Nepal Terai Limited	2.472	2.858	2.898	3.384	4.008	2.838	13.867	8.442	9.144	5.038	5.843	6.675	5.622	3.440
5	Fleur Himalayan Limited	2.870	3.156	1.243	1.862	1.490	1.357	1.281	1.825	1.532	1.391	1.836	1.138	1.748	0.640
6	Birat Shoe Limited	4.768	6.782	5.775	5.775	3.850	5.546	3.514	6.229	5.157	6.262	7.275	8.200	5.761	1.343
7	Himalayan Distillery Limited	3.827	4.068	4.350	4.002	4.166	4.097	4.185	4.507	3.660	4.117	5.369	5.171	4.293	0.507
8	Jyoti spinning Mills Limited	4.370	4.674	5.154	5.354	5.477	5.697	6.002	6.879	5.850	5.611	6.400	6.900	5.697	0.782
9	Nepal Bitumin and Barrel Udyog Limited	4.768	6.897	8.240	7.022	7.678	8.235	8.651	8.334	8.684	9.033	8.684	8.700	7.911	1.197
10	Nepal Khadya Udhyog Limited	1.190	1.084	0.946	1.095	0.973	0.780	0.691	0.597	0.720	0.530	0.630	0.503	0.812	0.237
11	Nepal Lube Oil Limited	1.166	1.521	1.215	1.229	1.768	1.478	1.171	1.103	0.973	0.811	0.963	1.000	1.200	0.272
12	Nepal Vanaspati Ghee	0.237	0.167	0.284	0.417	2.533	2.260	1.949	1.704	1.483	3.451	3.157	3.304	1.746	1.243
13	Raghupati Jute Mills	2.109	3.723	0.618	3.912	4.186	4.165	3.071	3.808	4.335	4.689	3.715	3.900	4.353	2.653
14	Shree Ram sugar mills	2.171	6.575	2.209	2.545	2.259	1.399	12.549	9.944	10.769	11.614	10.776	11.180	6.166	4.621
15	Unilever Nepal	3.266	2.304	1.714	2.211	2.474	1.597	1.386	1.499	2.101	1.849	2.162	2.186	2.063	0.512
16	Agriculture Input	2.205	2.890	2.828	3.253	3.181	3.469	2.234	2.594	1.334	1.784	1.995	2.000	2.481	0.658
17	Butwal Spinning Mills Limited	5.609	6.061	6.947	7.942	7.694	6.350	5.802	14.707	13.494	2.160	7.827	7.200	7.649	3.394
18	Dairy Development Corporation	4.416	4.514	3.993	3.890	3.820	4.715	5.222	4.415	3.990	4.542	4.316	4.283	4.343	0.395
19	Gorakhkali Rubber Udhyog Limited	5.442	5.284	5.066	5.431	5.270	5.177	4.787	4.589	4.150	3.283	2.929	3.000	4.534	0.960
20	Hetauda Cement	4.563	4.496	4.249	3.585	3.205	2.728	2.448	2.588	2.596	2.604	2.612	2.619	3.191	0.818
21	Jatibuti	2.759	3.033	2.451	2.337	2.148	1.815	1.718	1.605	1.279	0.956	1.280	1.400	1.898	0.648
22	Nepal Aushadi	1.300	1.376	1.190	1.125	0.999	1.535	1.641	1.841	1.691	1.236	1.750	1.800	1.457	0.289
23	Nepal Foundry Company Ltd.	0.100	0.100	0.200	0.165	0.131	0.131	0.117	0.107	0.157	0.128	0.127	0.130	0.133	0.029
24	Nepal Orind Magnesite	0.384	0.373	0.386	0.298	0.086	0.151	0.139	0.138	0.098	0.082	0.083	0.079	0.191	0.129
25	Udayapur Cement	4.947	5.200	5.354	5.592	4.463	4.505	4.490	5.088	5.113	5.162	5.522	5.266	5.058	0.389
	Mean	3.184	3.521	3.184	3.438	3.414	3.349	4.103	4.236	4.264	3.763	4.008	3.782	3.687	1.167
	Standard Deviation	2.465	2.168	2.285	2.214	2.273	2.242	3.542	3.387	3.466	2.902	3.053	2.947	2.336	1.159

Source: Annexure 7

been measured as the percentage of total depreciation expenses to total assets. The average value of non-debt tax shield observed to be 3.69 percent. The average values of non-debt tax shields among the firms ranges from 0.133 percent to 7.982 percent. The average non-debt tax shield is highest for Bhrikuti Pulp and Paper Nepal Limited (7.982 percent), followed by Nepal Bitumin and Barrel Udyog Ltd. (7.911 percent), Butwal Spinning Mills Ltd. (7.649 percent), Shree Ram Sugar Mills (6.166 percent), Bottlers Nepal Balaju Ltd. (6.075 percent), and so on. The average non-debt tax shield is lowest for Nepal Foundry Company Ltd. (0.133 percent), followed by Nepal Orind Magnesite (0.191 percent), Nepal Khadya Udhyog Ltd. (0.812 percent), Nepal Lube Oil Ltd. (1.2 percent), and so on. The standard deviation ranges from 0.029 percent of Nepal Foundry Company to 4.621 percent of Shree Ram Sugar Mills. With the very small amount of standard deviation, it can be concluded that the depreciation expenses are more or less remained same during the period of study within the firms. With reference to industry average of non-debt tax shield, it ranges from 3.18 percent in the year 2000 to 4.264 percent in the year 2008.

Ross (1985) argues that if such firms issue excessive debt, they may become "tax-exhausted" in the sense that they are unable to use all their potential tax shields. Debt is then "crowded out," and the intensive to use debt financing diminishes as non-debt tax shields increase. Accordingly, in the framework of the trade-off theory, a negative relationship between non-debt tax shields and debt ratio is expected.

Table 4.8 presents the structure and patterns of tangibility of the assets of the firms along with average and standard deviation of the distribution for each firm. The tangibility has been measured as the percentage of sum of total fixed assets and inventory to total assets.

Table 4.8

Structure and patterns of the tangibility, measured as the percentage of sum of fixed assets and inventories to total assets of the selected enterprises for the period of 12 years from 2000 to 2011.

S.N	Variables	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Mean	St. Dev
1	Arun Vanaspati Udyog Limited	51.57	45.74	48.32	47.05	63.53	49.66	49.41	74.42	76.13	75.50	71.86	74.50	60.64	13.02
2	Bhrikuti Pulp and Paper Nepal Limited	93.75	93.17	92.13	91.09	90.75	88.15	89.95	88.33	84.08	81.43	79.73	76.20	87.40	5.72
3	Bottlers Nepal Balaju Limited	65.99	66.20	65.23	65.76	66.04	64.43	65.89	70.88	74.09	73.53	71.52	68.98	68.21	3.43
4	Bottlers Nepal Terai Limited	41.09	44.56	44.22	43.29	42.53	47.01	72.12	51.55	51.63	43.79	42.73	46.05	47.55	8.43
5	Fleur Himalayan Limited	80.79	76.45	75.30	65.53	66.17	61.88	64.57	62.67	66.94	66.64	35.81	16.62	61.61	18.00
6	Birat Shoe Limited	93.02	92.13	92.57	92.57	61.72	84.75	61.86	73.50	88.88	95.00	87.50	82.10	83.80	11.88
7	Himalayan Distillery Limited	82.53	87.48	87.11	76.71	79.13	78.77	77.79	82.30	78.76	79.62	82.30	84.30	81.40	3.54
8	Jyoti spinning Mills Limited	89.68	88.78	86.72	84.04	83.56	85.65	84.26	92.93	84.95	83.95	74.60	79.80	84.91	4.69
9	Nepal Bitumin and Barrel Udyog Limited	93.02	91.61	89.62	91.09	89.71	88.15	89.95	88.33	84.88	81.43	84.88	86.70	88.28	3.31
10	Nepal Khadya Udhyog Limited	47.23	48.39	43.34	41.28	42.70	49.13	47.13	54.48	53.73	63.64	69.36	75.93	53.03	11.08
11	Nepal Lube Oil Limited	33.60	40.08	27.40	29.75	37.55	37.05	33.34	40.14	28.67	26.13	31.64	34.80	33.35	4.77
12	Nepal Vanaspati Ghee	47.53	69.62	67.80	58.91	46.24	44.69	44.44	43.37	41.93	43.31	42.05	42.68	49.38	10.12
13	Raghupati Jute Mills	65.64	92.67	89.60	92.75	91.68	87.08	87.69	88.14	86.35	88.22	60.74	67.30	83.15	11.50
14	Shree Ram sugar mills	94.77	85.72	94.37	92.88	90.91	93.46	93.49	89.85	83.81	90.63	88.09	88.50	90.54	3.50
15	Unilever Nepal	36.99	37.04	34.94	45.20	59.65	61.99	40.37	65.37	64.66	63.32	61.49	53.34	52.03	12.21
16	Agriculture Input	54.83	63.69	76.70	65.83	71.53	75.37	51.86	72.07	65.55	58.70	56.77	65.40	64.86	8.11
17	Butwal Spinning Mills Limited	89.58	92.24	94.14	96.05	95.05	76.43	64.80	89.90	72.05	80.28	76.17	74.60	83.44	10.59
18	Dairy Development Corporation	74.03	68.76	53.06	61.49	49.16	58.30	51.24	62.60	56.81	56.88	58.76	57.48	59.05	7.04
19	Gorakhkali Rubber Udhyog Limited	83.75	85.78	86.95	86.22	89.18	89.01	88.75	84.09	83.56	69.35	72.28	75.90	82.90	6.70
20	Hetauda Cement	81.96	80.09	80.54	74.10	69.41	62.40	66.30	64.35	59.33	54.70	50.44	46.50	65.84	11.88
21	Jatibuti	83.94	90.35	74.10	81.07	77.81	77.59	78.79	77.41	68.99	85.10	77.16	76.30	79.05	5.52
22	Nepal Aushadi	62.10	65.91	67.59	65.30	48.84	58.62	65.74	50.33	67.34	49.00	67.02	68.70	61.37	7.72
23	Nepal Foundry Company Ltd.	72.10	73.20	83.10	89.14	84.65	88.42	87.12	91.43	88.13	88.78	88.87	89.30	85.35	6.33
24	Nepal Orind Magnesite	81.56	77.98	80.45	80.42	44.77	80.08	79.90	80.11	80.60	80.91	81.09	77.83	77.14	10.26
25	Udayapur Cement	92.00	92.55	91.40	89.99	87.72	87.43	91.60	91.15	91.25	90.31	89.51	90.35	90.44	1.59
	Mean	68.92	71.02	71.05	70.31	68.11	69.71	67.96	71.87	69.59	69.32	66.63	66.22	69.23	8.06
	Standard Deviation	21.34	20.69	20.44	19.67	18.14	16.62	17.61	15.96	16.21	17.56	16.94	18.79	16.35	4.05

Source: Annexure 11

The average tangibility of 69.23 percent has been observed for the selected enterprises. The average tangibility ranges from 33.35 percent to 90.54 percent. There are twelve firms having the value of tangibility less than average of 69.23 percent of tangibility and remaining thirteen firms have tangibility above the average. The value of standard deviation of distribution of tangibility among the firm ranges from 1.59 percent of Udayapur Cement to 18 percent of Fleur Himalayan Limited. The average tangibility is highest for Shree Ram Sugar Mills (90.54 percent), followed by Udayapur Cement (90.44 percent), Nepal Bitumin and Barrel Udyog Limited (88.28 percent), Bhrikuti Pulp and Paper Nepal Limited (87.40 percent), Nepal Foundry Company Ltd. (85.35 percent), and so on. The average tangibility is lowest for Nepal Lube Oil Limited (33.35 percent), followed by Bottlers Nepal Terai Limited (47.15 percent), Nepal Vanaspati Ghee (49.38 percent), Unilever Nepal (52.03 percent), and so on.

Since the tangibility makes debt less risky, its influence on firm's capital structure is not unambiguous. Galai and Masilis (1976) and Jensen and Meckling (1976) argue that stockholders of levered firms are prone to overinvest which can lead to the conflict between stockholders and bondholders. However, if debt can be secured against existing assets, creditors have an improved guarantee of repayment, and the recovery rate will be higher. Therefore, due to lower expected costs of distress and fewer debt-related agency problems, the theory predicts a positive relationship between tangibility of assets and debt ratios.

Table 4.9 presents the structure and patterns of the liquidity position of the selected firms. The liquidity has been measured as the current ratio in consistent with the studies carried out by Bhole and Mahakud (2004), Krenusz (2004), and Antoniou et al. (2002).

Table 4.9
Structure and patterns of the liquidity, measured as current ratio, of the selected enterprises for the period of 12 years from 2000 to 2011.

S.N	Variables	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Mean	St. Dev
1	Arun Vanaspati Udyog Limited	0.780	0.831	0.809	0.793	0.860	0.976	0.891	0.528	0.726	0.748	0.645	0.706	0.775	0.117
2	Bhrikuti Pulp and Paper Nepal Limited	0.625	0.485	0.321	0.333	0.267	0.388	0.365	0.375	0.328	0.628	0.302	0.538	0.413	0.125
3	Bottlers Nepal Balaju Limited	1.922	1.382	1.489	1.635	2.573	2.416	1.583	0.633	0.936	0.839	0.866	0.810	1.424	0.641
4	Bottlers Nepal Terai Limited	1.912	1.802	1.837	1.857	2.248	2.027	1.443	1.119	1.336	1.070	1.076	1.161	1.574	0.419
5	Fleur Himalayan Limited	0.785	0.568	0.254	0.317	0.342	0.309	0.302	0.286	0.325	0.324	0.674	0.583	0.422	0.179
6	Birat Shoe Limited	0.477	0.380	0.428	0.428	0.286	0.380	0.302	0.465	0.429	0.424	0.533	0.638	0.431	0.095
7	Himalayan Distillery Limited	1.267	0.949	0.888	0.873	0.742	0.709	0.650	0.514	0.510	0.558	1.161	1.007	0.819	0.249
8	Jyoti spinning Mills Limited	0.386	0.385	0.707	0.912	1.171	1.893	3.743	2.907	2.818	1.942	1.869	1.649	1.698	1.059
9	Nepal Bitumin and Barrel Udyog Limited	0.477	0.327	0.340	0.333	0.354	0.388	0.365	0.375	0.502	0.628	0.502	0.637	0.436	0.112
10	Nepal Khadya Udhyog Limited	1.605	1.433	0.991	0.871	0.845	0.899	0.858	0.893	0.867	0.900	0.695	0.660	0.960	0.278
11	Nepal Lube Oil Limited	2.162	2.224	1.503	1.360	1.513	1.455	1.376	1.417	1.421	1.247	1.362	1.431	1.539	0.314
12	Nepal Vanaspati Ghee	1.075	0.311	0.286	0.221	0.129	0.120	0.107	0.105	0.105	0.099	0.098	0.099	0.229	0.277
13	Raghupati Jute Mills	2.260	1.576	1.387	1.708	1.356	1.493	0.529	0.503	0.501	0.470	0.658	0.646	1.091	0.609
14	Shree Ram sugar mills	0.681	0.352	0.408	0.479	0.337	0.260	0.283	0.360	0.277	0.172	0.270	0.326	0.350	0.130
15	Unilever Nepal	1.383	1.332	1.011	0.999	0.834	0.933	1.557	1.375	1.286	1.110	0.972	0.985	1.148	0.228
16	Agriculture Input	0.689	0.559	0.559	0.450	0.469	0.422	0.647	0.881	1.007	0.827	0.758	0.784	0.671	0.186
17	Butwal Spinning Mills Limited	2.607	1.611	0.926	0.240	0.504	1.020	1.187	0.030	0.122	0.070	0.096	0.163	0.715	0.794
18	Dairy Development Corporation	1.015	0.945	1.162	1.343	1.384	1.368	1.122	1.146	1.111	1.126	1.128	1.121	1.164	0.135
19	Gorakhkali Rubber Udhyog Limited	2.488	0.783	0.741	0.587	0.486	0.435	0.389	0.397	0.348	0.477	0.715	0.863	0.726	0.581
20	Hetauda Cement	0.557	0.48	0.443	0.495	0.509	0.553	0.577	0.565	0.566	0.567	0.568	0.570	0.538	0.044
21	Jatibuti	0.831	0.568	0.663	0.688	0.690	0.717	0.598	0.485	0.541	0.498	0.508	0.618	0.617	0.105
22	Nepal Aushadi	1.893	2.232	0.874	0.855	1.419	0.989	0.967	0.970	0.190	0.271	0.150	0.327	0.928	0.663
23	Nepal Foundry Company Ltd.	0.763	0.864	0.629	0.582	0.739	1.157	1.067	1.633	2.356	1.553	1.652	1.798	1.233	0.559
24	Nepal Orind Magnesite	0.064	0.067	0.053	0.053	0.082	0.051	0.05	0.05	0.051	0.047	0.044	0.052	0.055	0.011
25	Udayapur Cement	1.358	1.248	1.303	1.149	1.071	1.106	0.921	0.912	0.897	1.090	1.111	1.033	1.100	0.150
	Mean	1.208	0.988	0.827	0.859	0.875	0.876	0.855	0.741	0.770	0.778	0.790	0.811	0.865	0.333
	Standard Deviation	0.690	0.622	0.449	0.605	0.610	0.588	0.710	0.592	0.639	0.559	0.515	0.456	0.435	0.283

Source: Annexure 9

The average liquidity of all the firms for the period of twelve years of 0.865 has been observed. Theoretically, as a rule of thumb, the ratio of 2 for the current ratio is considered as good. If the current ratio of any individual firm is not significantly different from industry average, it is considered as good. The liquidity ranges from 0.055 to 1.698. The average liquidity is highest for Jyoti spinning Mills Limited (1.698), followed by Bottlers Nepal Terai Limited (1.574), Nepal Lube Oil Limited (1.539), Bottlers Nepal Balaju Limited (1.424), and so on. The average liquidity is the lowest for Nepal Orind Magnesite (0.055), followed by Nepal Vanaspati Ghee (0.229), Shree Ram sugar mills (0.350), Bhrikuti Pulp and Paper Nepal Limited (0.413), and so on. Based on the distribution of the figures, there are ten firms having the current ratio more than average and the values of the same for the remaining fifteen firms are less than average. Similarly, the standard deviation ranges from 0.011 of Nepal Orind Magnesite to 1.059 of Jyoti Spinning Mills Limited. The high value of standard deviation indicates the inconsistency in maintaining the ratio within the firm.

Liquidity position of the firms measures the short term debt paying capacity of the firms. Firms with higher liquidity ratios might support a relatively higher debt ratio due to greater ability to meet short term obligation when they fall due. This implies a positive relationship between liquidity and debt ratios. In the literature, liquidity of the firms has a mix impact on capital structure decisions of the firms. Since the liquidity of the firms depends on current assets, it clearly affects the source of funds to finance it.

Table 4.10 shows the structure and pattern of the volatility. In this study, the percentage change in operating profit has been used to measure the volatility. The mean values of volatility among the firm range from – 19.63 percent to 25.79 percent. The average

Table 4.10

Structure and pattern of the volatility, measured as the percentage change in earnings before depreciation, interest, and tax, of the selected enterprises for the period of 12 years from 2000 to 2011.

S.N	Variables	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Mean	St. Dev
1	Arun Vanaspati Udyog Limited	-50.03	2.63	5.61	-0.99	30.45	-17.98	-13.91	10.20	-68.68	6.32	-20.79	-27.72	-12.07	27.47
2	Bhrikuti Pulp and Paper Nepal Limited	9.79	11.38	2.02	2.30	-3.12	1.09	4.45	-5.44	-5.56	7.69	-7.62	-6.70	0.86	6.60
3	Bottlers Nepal Balaju Limited	-11.70	4.70	6.23	5.54	-5.19	5.21	-5.18	0.40	-3.68	6.22	7.78	2.97	1.11	6.15
4	Bottlers Nepal Terai Limited	18.87	10.68	4.62	-5.94	-3.24	4.22	9.15	-6.97	-7.86	-4.14	6.58	-1.81	2.01	8.33
5	Fleur Himalayan Limited	-95.20	-7.39	0.08	3.47	6.87	-4.92	5.91	-0.63	11.57	2.14	21.48	-10.17	-5.57	29.49
6	Birat Shoe Limited	7.73	5.23	6.48	6.48	4.32	5.63	4.74	7.06	6.68	6.26	8.03	7.84	6.37	1.21
7	Himalayan Distillery Limited	3.48	4.12	-1.37	0.12	0.60	4.91	0.90	1.67	-0.82	0.58	4.36	2.61	1.76	2.10
8	Jyoti spinning Mills Limited	24.07	-1.27	-6.14	0.93	1.75	4.35	-2.52	2.47	0.91	0.05	3.57	5.63	2.82	7.41
9	Nepal Bitumin and Barrel Udyog Limited	7.73	2.16	0.80	2.30	-1.57	1.09	4.45	-5.44	1.13	7.69	1.13	5.73	2.27	3.77
10	Nepal Khadya Udhyog Limited	-18.75	-1.15	-3.66	-6.27	8.06	6.21	-9.17	6.35	-3.34	0.00	1.81	-0.81	-1.73	7.46
11	Nepal Lube Oil Limited	-29.97	5.55	-8.03	7.59	1.36	3.00	0.85	5.93	-8.72	-0.59	-1.13	-3.76	-2.33	10.11
12	Nepal Vanaspati Ghee	17.36	32.29	-7.88	-25.07	-43.48	-1.68	-1.65	-0.70	-0.46	3.75	-0.89	1.43	-2.25	18.80
13	Raghupati Jute Mills	17.82	2.90	-2.70	8.66	0.69	1.65	4.98	-0.50	2.22	1.79	-11.08	-12.30	1.18	7.99
14	Shree Ram sugar mills	13.47	-31.19	7.95	45.86	-34.58	-46.94	75.97	27.21	-33.93	-24.76	-10.50	-13.50	-2.08	37.22
15	Unilever Nepal	-43.92	5.78	4.02	3.47	8.28	8.82	-18.12	21.70	-0.36	4.23	6.26	4.86	0.42	16.55
16	Agriculture Input	81.34	-40.05	30.93	-75.73	15.86	-18.12	38.06	82.37	17.37	27.71	54.53	46.74	21.75	46.98
17	Butwal Spinning Mills Limited	-81.25	7.88	-19.79	-16.81	55.68	19.32	3.30	-47.74	-3.18	-75.93	-39.55	-37.50	-19.63	39.57
18	Dairy Development Corporation	-76.72	-20.40	-28.48	40.05	-28.60	44.96	-17.35	76.75	2.39	20.60	33.25	18.75	5.43	41.87
19	Gorakhkali Rubber Udhyog Limited	18.25	-2.35	1.60	-9.63	0.56	-0.66	-0.96	-0.36	-2.22	-1.19	12.12	14.00	2.43	8.06
20	Hetauda Cement	-68.11	-12.36	-4.60	-1.47	-6.83	-5.21	14.36	4.57	4.69	4.80	4.92	5.04	-5.02	21.13
21	Jatibuti	-98.00	-20.37	-4.98	30.40	6.55	5.31	-1.55	-4.15	5.54	27.77	9.72	17.64	-2.18	33.32
22	Nepal Aushadi	-6.43	-7.86	-5.21	9.69	-17.82	-25.61	8.83	13.16	-21.82	-7.21	-2.34	-25.73	-7.36	13.46
23	Nepal Foundry Company Ltd.	-32.60	-25.78	-36.89	-57.32	-23.06	40.33	12.22	21.58	-22.26	27.97	24.88	13.04	-4.82	31.53
24	Nepal Orind Magnesite	45.94	-11.19	-6.90	1.86	-2.83	2.30	1.15	3.27	7.74	-1.96	-2.02	2.73	3.34	14.31
25	Udayapur Cement	18.53	3.89	5.10	-6.20	-1.74	11.43	37.78	24.21	-1.31	12.73	2.03	4.48	9.24	12.55
	Mean	-11.03	-1.916	-1.358	0.642	0.673	3.038	7.213	9.171	-3.581	3.005	4.395	1.107	0.95	17.787
	Standard Deviation	44.41	15.66	12.90	25.45	20.56	18.03	19.26	26.89	17.70	19.51	17.68	17.06	8.80	13.30

Source: Annexure 6

Volatility is the highest for Agriculture Input (21.75 percent), followed by Butwal Spinning Mills Limited (19.63 percent), Arun Vanaspati Udyog Limited (12.07 percent),Udayapur Cement (9.24 percent), Nepal Aushadi (7.36 percent), and so on. The volatility is the lowest for Unilever Nepal (0.42 percent), followed by Bhrikuti Pulp and Paper Nepal Limited (0.86 percent), Bottlers Nepal Balaju Limited (1.11 percent), Raghupati Jute Mills (1.18 percent), and so on. The figures in negative indicate the decrease in operating profits in the year compared to previous year. The standard deviation of distribution measures the extent of deviation from the mean value. In the distribution, the lowest value of standard deviation is 1.21 percent of Birat Shoe Limited and highest value is 46.98 of Agriculture Input indicating the high volatility in the profit. The industry average of volatility of 0.95 percent has been observed.

Managers have identified the need for financial flexibility as the main driver of their financing decisions. This finding is confirmed across countries and legal systems as well as in both earlier and more recent surveys such as Pinegar and Wilbricht (1989) and Graham and Harvey (2001).

Table 4.11 reveals the structure and patterns of financial flexibility of selected enterprises. The mean of financial flexibility ranges from 0.68 percent to 5.81 percent.The average financial flexibility is highest for Jadibuti (5.81 percent), followed by Nepal Khadya Udyog Ltd. (3.85 percent), Unilever Nepal (3.58 percent), Nepal Aushadi (3.37 percent), Hetauda cement (3.31 percent), and so on. The average financial flexibility is the lowest for Butwal Spinning Mills Ltd. (0.68 percent), followed by Himalayan Distillery Limited (1.15 percent), Birat Shoe Ltd. (1.24 percent), Agriculture Input (1.47 percent), Raghupati Jute Mills (1.59 percent), and so on.

Table 4.11

Structure and patterns of the financial flexibility, measured as the percentage of cash balance to total assets, of the selected enterprises for the period of 12 years from 2000 to 2011.

S.N	Variables	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Mean	St. Dev
1	Arun Vanaspati Udyog Limited	2.00	1.96	1.95	1.79	4.36	2.93	2.29	4.11	1.50	2.03	1.11	1.55	2.30	1.01
2	Bhrikuti Pulp and Paper Nepal Limited	0.96	1.06	1.30	1.57	1.42	1.60	2.17	2.07	1.74	2.47	2.20	2.30	1.74	0.50
3	Bottlers Nepal Balaju Limited	1.66	1.92	2.01	2.45	2.39	2.85	2.33	1.71	1.52	1.86	2.30	2.01	2.08	0.39
4	Bottlers Nepal Terai Limited	1.78	2.46	2.58	2.05	2.00	2.44	2.59	1.92	1.71	1.17	1.00	1.29	1.92	0.55
5	Fleur Himalayan Limited	2.01	1.39	1.46	1.64	2.25	1.91	2.47	2.43	3.23	3.38	3.21	1.26	2.22	0.75
6	Birat Shoe Limited	1.11	1.31	1.21	1.21	0.80	1.13	0.77	1.30	1.12	1.27	1.51	2.20	1.24	0.36
7	Himalayan Distillery Limited	0.58	1.00	0.89	0.81	0.88	1.28	1.38	1.62	1.19	1.40	1.42	1.37	1.15	0.31
8	Jyoti spinning Mills Limited	2.20	2.20	1.75	1.85	2.05	2.49	2.32	2.82	2.41	2.07	2.30	2.70	2.26	0.32
9	Nepal Bitumin and Barrel Udyog Limited	1.11	1.43	1.73	1.57	1.82	1.60	2.17	2.07	2.27	2.47	2.27	2.10	1.88	0.41
10	Nepal Khadya Udhyog Limited	2.81	2.99	2.69	2.44	2.69	3.53	3.43	4.30	4.00	5.31	5.62	6.45	3.85	1.32
11	Nepal Lube Oil Limited	1.89	2.54	1.53	1.90	2.36	2.52	2.38	3.06	2.05	1.91	2.34	2.40	2.24	0.40
12	Nepal Vanaspati Ghee	3.66	6.12	5.75	3.98	1.68	1.65	1.69	1.70	1.69	1.73	1.81	1.77	2.77	1.68
13	Raghupati Jute Mills	3.83	1.32	1.54	1.80	1.78	1.80	1.76	1.47	1.54	1.72	0.20	0.30	1.59	0.90
14	Shree Ram sugar mills	1.76	3.60	1.31	1.88	1.21	0.67	1.31	2.43	1.35	0.90	1.56	2.00	1.66	0.78
15	Unilever Nepal	1.71	2.15	2.26	2.89	4.08	4.66	2.71	4.86	4.81	4.74	4.41	3.65	3.58	1.17
16	Agriculture Input	1.07	0.59	2.01	0.08	0.79	0.60	0.72	2.02	3.89	2.30	1.69	1.90	1.47	1.05
17	Butwal Spinning Mills Limited	0.63	0.84	0.49	0.20	1.16	1.39	1.35	0.38	0.36	0.41	0.38	0.60	0.68	0.41
18	Dairy Development Corporation	3.07	2.54	1.42	2.19	1.36	2.33	1.77	3.29	3.03	2.70	3.01	2.91	2.47	0.66
19	Gorakhkali Rubber Udhyog Limited	2.17	2.23	2.54	2.06	2.36	2.51	2.60	2.71	2.73	2.24	3.25	2.70	2.51	0.33
20	Hetauda Cement	3.51	3.32	3.44	3.34	3.17	2.91	3.46	3.18	3.24	3.31	3.38	3.44	3.31	0.17
21	Jatibuti	6.03	6.01	4.82	5.81	5.75	5.88	6.02	5.94	5.39	6.08	5.80	6.20	5.81	0.37
22	Nepal Aushadi	2.70	3.88	3.95	4.03	2.82	2.99	3.58	2.95	3.67	2.64	3.65	3.60	3.37	0.51
23	Nepal Foundry Company Ltd.	1.60	1.40	0.90	1.30	1.00	1.42	2.20	2.44	1.89	1.98	2.13	2.11	1.70	0.50
24	Nepal Orind Magnesite	1.93	1.69	1.65	1.70	0.94	1.71	1.73	1.78	1.90	1.88	1.86	1.83	1.72	0.26
25	Udayapur Cement	1.54	1.71	1.90	1.85	2.03	2.39	1.07	1.45	1.42	1.75	1.86	1.68	1.72	0.34
	Mean	2.12	2.27	2.19	2.16	2.22	2.37	2.34	2.63	2.42	2.45	2.44	2.41	2.33	0.62
	Standard Deviation	1.16	1.36	1.21	1.21	1.25	1.22	1.16	1.25	1.21	1.34	1.38	1.39	1.06	0.38

Source: Annexure 10

Since the standard deviation measures the consistency of the distribution, the low values of standard deviation shows the firms seem to maintain the cash balance more or less consistently. Looking at the industry average of financial flexibility, Nepalese firms are having consistent cash balance as the rage of industry average of cash balance is 2.12 percent of total assets to 2.63 percent. Irrespective of changes in total debt ratio, Nepalese firms seem to have more or less consistent cash balance.

From the above discussion on the patterns and distribution of debt ratios and firm specific factors affecting the capital structure of selected Nepalese enterprises, it is clear that the average debt ratios are excessively high for most of the selected enterprises. The year wise averages for all the variables have been calculated which shows tentative industry averages for each year with the standard deviation of the distribution. With this, the deviation of the figures from industry average can be observed for each variable considered in this study. In addition, it is also clear that the selected enterprises have been using more short term debt in their capital structure compared to long term debt throughout the period of study of twelve years. There are three firms, namely, Bottlers Nepal Terai Ltd., Unilever Nepal, and Agriculture Input, had never used the long term debt capital during the period of study of twelve years. The reason behind using more short term debt may be the availability of required funds easily from the financial institution at cheaper cost compared to cost of long term debt.

4.3 Descriptive statistics

In any studies, descriptive statistics of the variables of the study plays an important role. Before conducting correlation and regression analysis, it is necessary to explain the

descriptive statistics first. Table 4.12 presents the descriptive statistics of thirteen variables from the pooled data of selected Nepalese manufacturing firms for the study period of twelve years. This table shows some of the most frequently used statistics namely, minimum value, maximum value, average value, standard deviation, skewness, and kurtosis of distribution of the variables. Based on the minimum and maximum values of distribution of short term debt ratio, which ranges from 5.86 percent to 781.5 percent of total assets with average ratio of 110.9 percent, the firms have been using short term debt more than its total assets. Based on the value of standard deviation and average, most of the firms have been using short term debt more that total assets. The positive skewness also supports the fact. Similarly, the range of minimum and maximum values with respect to long term debt ratio has been observed as zero percent to 427.81 percent of total assets. The figures indicate that there are firms which never have been used the long term debt during the study period. However, there are firms using long term debt more than its total assets. The average ratio of 62.1 percent with positive skewness indicates that there are more firms having long term debt ratio more than 62.1 percent compared to firms having long term debt less than 62.1 percent.

Since the total debt is the sum of short term and long term debt, obviously the same fact is observed with respect to total debt ratio. This clearly shows that there is lack of proper debt capital management in the selected Nepalese manufacturing firms. In addition to descriptive statistics of the variables, Table 4.13 presents the correlation coefficients among the variables selected for the study. The independent variables should not be highly correlated with each other to have the realistic results from the regression analysis.

Table 4.12
Descriptive statistics of variables

This table presents the descriptive statistics of the variables used in this study. The data are collected from Office of the Auditor General, Nepal, NEPSE and SEBON. The sample contains 25 Nepalese manufacturing firms for the period of 12 years from the year 2000 to 2011. DR_1 is the ratio of short-term debt to total assets. DR_2 is the ratio of long-term debt to total assets. DR_3 is the ratio of total debt to total assets.$\ln S_{it}$ is the natural logarithm of sales representing the size if the firm. ΔTA_{it} is the percentage change in total assets representing the growth of the firm. $DEPTA_{it}$ is the ratio of annual depreciation to total assets representing the non-debt-tax-shield. $EBITDTA_{it}$ is the ratio of earnings before interest, tax and depreciation to total assets representing the profitability of the firm. CR_{it} is the ratio of current assets to current liabilities representing the liquidity of the firm. $INVFATA_{it}$ is the ratio of sum of inventory and fixed assets to total assets representing the tangibility of assets, CTA_{it} is the ratio of cash to total assets representing financial flexibility of firms, $\Delta EBITDTA_{it}$ is the percentage change in the earnings before interest, tax and depreciation to total assets representing the volatility of the firm, GDP_{it} is the following year's GDP representing expected GDP and $INFLATION_{it}$is the inflation rate of the following year representing the expected inflation.

S.N	Variables	N	Minimum	Maximum	Average	Std. Deviation	Skewness	Kurtosis
1	Short-term debt ratio (DR1)	300	5.86	781.50	110.90	41.27	3.39	11.37
2	Long-term debt ratio(DR2)	300	0.00	427.81	62.10	27.78	3.01	12.17
3	Total debt ratio (DR3)	300	17.60	854.04	173.00	54.41	2.81	8.17
4	Firm size (ln S)	300	5.85	11.33	8.45	0.32	-2.68	8.32
5	Growth (ΔTA)	300	-43.91	43.82	1.87	11.43	9.50	1 01.05
6	Profitability (EBITDTA)	300	-29.80	66.15	29.01	7.37	0.03	0.84
7	Non-debt tax shield (DEPTA)	300	0.08	14.71	3.69	1.17	0.92	0.94
8	Tangibility (INVFATA)	300	16.62	90.35	69.23	8.06	-0.26	-1.14
9	Liquidity (CR)	300	0.03	3.74	0.86	0.33	3.03	14.50
10	Volatility (Δ EBITDTA)	300	-95.20	82.37	32.60	17.79	-8.87	89.81
11	Financial Flexibility (CTA)	300	0.20	6.45	2.33	0.62	1.50	2.81
12	Expected GDP (GDP)	12	0.12	6.20	4.04	1.56	-1.11	1.50
13	Expected Inflation (INFLATION)	12	3.07	16.02	7.19	3.68	1.11	0.40

Table 4.13

Pearson correlation coefficients among the variables

This table presents the Pearson correlation coefficients among the variables used in this study. The data are collected from Office of the Auditor General, Nepal, NEPSE and SEBON. The sample contains 25 Nepalese manufacturing companies from public and private sector for the period of 12 years from the year 2000 to 2011. DR_1 is the ratio of short-term debt to total assets. DR_2 is the ratio of long-term debt to total assets. DR_3 is the ratio of total debt to total assets. lnS_{it} is the natural logarithm of sales representing the size if the firm. ΔTA_{it} is the percentage change in total assets representing the growth of the firm. $DEPTA_{it}$ is the ratio of annual depreciation to total assets representing the non-debt-tax-shield. $EBITDTA_{it}$ is the ratio of earnings before interest, tax and depreciation to total assets representing the profitability of the firm. CR_{it} is the ratio of current assets to current liabilities representing the liquidity of the firm. $INVFATA_{it}$ is the ratio of sum of inventory and fixed assets to total assets representing the tangibility of assets, CTA_{it} is the ratio of cash to total assets representing financial flexibility of firms, $\Delta EBITDTA_{it}$ is the percentage change in the earnings before interest, tax and depreciation to total assets representing the volatility of the firm, GDP_{it} is the following year's GDP representing expected GDP and INF_{it} is the inflation rate of the following year representing the expected inflation.

Variables	DR1	DR2	DR3	lnS	ΔTA	EBITDTA	DEPTA	INVFATA	CR	ΔEBITDTA	CTA	GDP	INF
DR1	1												
DR2	0.450**	1											
DR3	0.872**	0.829**	1										
ln S	- 0.434**	- 0.437**	- 0.511**	1									
ΔTA	- 0.021	- 0.078	- 0.056	0.103	1								
EBITDTA	- 0.090	- 0.190*	- 0.161	0.197*	- 0.174	1							
DEPTA	- 0.222*	0.161	- 0.051	0.020	- 0.165	0.065	1						
INVFATA	- 0.023	0.174	0.081	- 0.465**	- 0.112	- 0.039	0.355**	1					
CR	- 0.628**	- 0.244**	- 0.526**	0.462**	0.049	0.053	- 0.111	- 0.318**	1				
ΔEBITDTA	- 0.093	- 0.153	- 0.142	0.124	0.605**	- 0.056	- 0.055	0.014	0.310	1			
CTA	0.001	- 0.243**	- 0.133	0.179	- 0.100	0.922**	- 0.327**	- 0.175	0.093	- 0.031	1		
GDP	0.065	0.080	0.084	- 0.003	- 0.011	0.001	0.043	- 0.008	0.060	- 0.005	- 0.016	1	
INF	0.236*	0.185*	- 0.091	0.071	- 0.017	- 0.074	- 0.003	0.063	0.028	0.013	0.176	0.257	1

(*) Significant at 5 percent level of significance
(**) Significant at 1 percent level of significance

4.4 Regression results

According to the early work by Harris and Raviv (1991), the consensus is that debt ratio increases with fixed assets, non-debt tax shields, investment opportunities, and firm size, and it decreases with volatility, advertising expenditure, the probability of bankruptcy, profitability, and uniqueness of the product. Frank and Goyal (2009) identify six major factors that are the driving forces behind the capital structure decision. They are:

1. Firms with high growth opportunities tend to have low levels of leverage.
2. Firms with considerable tangible assets tend to have high level of debt.
3. Large firms tend to have high level of debt capital.
4. Profitable firms to have less debt capital in their capital structure.
5. When expected inflation is high, firms tend to have high debt capital.
6. Firms that belong to industries in which the median debt ratio is high tend to have high debt capital.

As stated earlier in the methodology, the analysis of data is based on the linear regression equation model. The stepwise regression method has been followed to examine the most explanatory variables explaining the debt ratio. In this process, 10 different models with different sets of independent variables have been regressed on each of the three debt ratios namely, short term debt, long term debt, and total debt ratio. The regression of ten different independent variables on short term debt ratio, long term debt ratio and total debt ratio produced the results as indicated in Table 4.14, 4.15, and 4.16 respectively. These results are based on the data from full sample consisting of twenty seven firms from both private and public sector.

Table 4.14

Regression of independent variables on short term debt ratio, DR_1 (measured as short-term debt to total asset) from full sample

The results are based on the following Regression Models;

$$DR_1 = \alpha_t + \beta_{1t}(\ln S_{it}) + \beta_{2t}(\Delta TA_{it}) + \beta_{3t}(DEPTA_{it}) + \beta_{4t}(EBITDTA_{it}) + \beta_{5t}(CR_{it}) + \beta_{6t}(INVFATA_{it}) + \beta_{7t}(CTA_{it}) + \beta_{8t}(\Delta EBITDTA_{it}) + \beta_{9t}(GDP_{it} + \beta_{10t}(INFLATION_{it}) + \varepsilon_{it}$$

This table is concerned with the regression results of regression equations DR_1 on various explanatory variables considered in this study. In addition, p-values of each of regression coefficients are also provided to give the information regarding the significance of the coefficients of the explanatory variables selected in this study. DR_1 is the ratio of short-term debt to total assets. $\ln S_{it}$ is the natural logarithm of sales representing the size if the firm. ΔTA_{it} is the percentage change in total assets representing the growth of the firm. $DEPTA_{it}$ is the ratio of annual depreciation to total assets representing the non-debt-tax-shield. $EBITDTA_{it}$ is the ratio of earnings before interest, tax and depreciation to total assets representing the profitability of the firm. CR_{it} is the ratio of current assets to current liabilities representing the liquidity of the firm. $INVFATA_{it}$ is the ratio of sum of inventory and fixed assets to total assets representing the tangibility of assets, CTAit is the ratio of cash to total assets representing financial flexibility of firms, ΔEBITDTAit is the percentage change in the earnings before interest, tax and depreciation to total assets representing the volatility of the firm, GDP_{it} is the expected GDP and $INF_{it}$is the inflation.

Model	Intercept	Regression Coefficients of										R^2	F-test
		In S	CR	INVFATA	CTA	EBITDTA	DEPTA	GDP	ΔEBITDTA	INF	Δ TA		
1	8.817 (0.000)	- 0.592 (0.000)										0.347	129.845 (0.000)
2	2.041 (0.000)		- 0.490 (0.000)									0.237	76.587 (0.000)
3	2.035 (0.000)			- 0.161 (0.012)								0.220	6.435 (0.012)
4	8.021 (0.000)	- 0.486 (0.000)	- 0.342 (0.000)									0.452	100.615 (0.000)
5	9.776 (0.000)	- 0.499 (0.000)	- 0.406 (0.000)	- 0.291 (0.000)								0.530	92.073 (0.000)
6	9.651 (0.000)	- 0.518 (0.000)	- 0.404 (0.000)	- 0.277 (0.000)	0.116 (0.010)							0.541	72.398 (0.000)
7	9.572 (0.000)	- 0.510 (0.000)	- 0.407 (0.000)	- 0.275 (0.000)	0.022 (0.165)	0.109 (0.133)	- 0.071 (0.254)					0.542	48.746 (0.000)
8	9.425 (0.000)	- 0.509 (0.000)	- 0.408 (0.000)	- 0.276 (0.000)	0.020 (0.786)	0.110 (0.129)	- 0.072 (0.249)	0.039 (0.369)				0.542	41.864 (0.000)
9	9.456 (0.000)	- 0.513 (0.000)	- 0.407 (0.000)	- 0.279 (0.000)	0.021 (0.783)	0.110 (0.132)	- 0.069 (0.272)	0.037 (0.407)	0.030 (0.497)	0.015 (0.732)		0.539	32.434 (0.000)
10	9.442 (0.000)	- 0.512 (0.000)	- 0.407 (0.000)	- 0.278 (0.000)	0.017 (0.819)	0.110 (0.133)	- 0.073 (0.255)	0.037 (0.349)	0.040 (0.456)	0.017 (0.712)	- 0.018 (0.745)	0.537	29.089 (0.000)

Note: The values in parenthesis are p – values showing the level of significance of the values of beta coefficients.

Table 4.15

Regression of independent variables on long term debt ratio, DR_2(measured as long-term debt to total asset) from full sample

The results are based on the following Regression Models;

$$DR_2 = \alpha_t + \beta_{1t}(\ln S_{it}) + \beta_{2t}(\Delta TA_{it}) + \beta_{3t}(DEPTA_{it}) + \beta_{4t}(EBITDTA_{it}) + \beta_{5t}(CR_{it}) + \beta_{6t}(INVFATA_{it}) + \beta_{7t}(CTA_{it}) + \beta_{8t}(\Delta EBITDTA_{it}) + \beta_{9t}(GDP_{it} + \beta_{10t}(INFLATION_{it}) + \varepsilon_{it}$$

This table is concerned with the regression results of regression equations DR_2 on various explanatory variables considered in this study. In addition, p-values of each of regression coefficients are also provided to give the information regarding the significance of the coefficients of the explanatory variables selected in this study. DR_2 is the ratio of long-term debt to total assets. $\ln S_{it}$ is the natural logarithm of sales representing the size if the firm. ΔTA_{it} is the percentage change in total assets representing the growth of the firm. $DEPTA_{it}$ is the ratio of annual depreciation to total assets representing the non-debt-tax-shield. $EBITDTA_{it}$ is the ratio of earnings before interest, tax and depreciation to total assets representing the profitability of the firm. CR_{it} is the ratio of current assets to current liabilities representing the liquidity of the firm. $INVFATA_{it}$ is the ratio of sum of inventory and fixed assets to total assets representing the tangibility of assets, CTAit is the ratio of cash to total assets representing financial flexibility of firms, ΔEBITDTAit is the percentage change in the earnings before interest, tax and depreciation to total assets representing the volatility of the firm, GDP_{it} is the expected GDP and $INF_{it}$is the inflation.

Model	Intercept	Regression Coefficients of										R^2	F-test
		INVFATA	ln S	INF	DEPTA	CTA	ΔEBITDTA	EBITDTA	CR	GDP	Δ TA		
1	0.389 (0.008)	0.294 (0.000)										0.088	22.724 (0.000)
2	3.154 (0.000)		- 0.297 (0.000)									0.078	20.336 (0.000)
3	0.324 (0.016)			0.171 (0.007)								0.029	7.275 (0.000)
4	0.451 (0.000)				0.171 (0.007)							0.029	7.319 (0.000)
5	1.949 (0.001)	0.266 (0.000)	- 0.249 (0.000)									0.148	20.770 (0.000)
6	1.618 (0.008)	0.266 (0.000)	- 0.251 (0.000)	0.181 (0.002)								0.181	17.556 (0,000)
7	1.911 (0.002)	0.206 (0.002)	- 0.280 (0.000)	0.190 (0.001)	0.027 (0.027)							0.184	14.630 (0.000)
8	1.831 (0.003)	0.212 (0.001)	- 0.255 (0.000)	0.196 (0.001)	0.114 (0.099)	- 0.078 (0.221)	- 0.051 (0.385)					0.205	10.122 (0.000)
9	1.787 (0.004)	0.200 (0.003)	- 0.242 (0.000)	0.199 (0.001)	0.072 (0.391)	- 0.152 (0.133)	- 0.053 (0.368)	0.092 (0.343)	- 0.038 (0.548)			0.209	7.717 (0.000)
10	1.718 (0.008)	0.199 (0.003)	- 0.243 (0.000)	0.192 (0.002)	0.074 (0.389)	- 0.150 (0.142)	- 0.059 (0.406)	0.092 (0.342)	- 0.039 (0.584)	0.033 (0.584)	0.012 (0.870)	0.210	6.163 (0.000)

Note: The values in parenthesis are p – values showing the level of significance of the values of beta coefficients.

Table 4.16

Regression of independent variables on total debt ratio, DR_3(measured as total debt to total asset) from full sample consisting of all twenty seven firms from both private and public sectors

The results are based on the following Regression Models;

$$DR_3 = \alpha_t + \beta_{1t}(\ln S_{it}) + \beta_{2t}(\Delta TA_{it}) + \beta_{3t}(DEPTA_{it}) + \beta_{4t}(EBITDTA_{it}) + \beta_{5t}(CR_{it}) + \beta_{6t}(INVFATA_{it}) + \beta_{7t}(CTA_{it}) + \beta_{8t}(\Delta EBITDTA_{it}) + \beta_{9t}(GDP_{it} + \beta_{10t}(INFLATION_{it}) + \varepsilon_{it}$$

This table is concerned with the regression results of regression equations DR_3 on various explanatory variables considered in this study. In addition, p-values of each of regression coefficients are also provided to give the information regarding the significance of the coefficients of the explanatory variables selected in this study. DR_3 is the ratio of total debt to total assets. $\ln S_{it}$ is the natural logarithm of sales representing the size if the firm. ΔTA_{it} is the percentage change in total assets representing the growth of the firm. $DEPTA_{it}$ is the ratio of annual depreciation to total assets representing the non-debt-tax-shield. $EBITDTA_{it}$ is the ratio of earnings before interest, tax and depreciation to total assets representing the profitability of the firm. CR_{it} is the ratio of current assets to current liabilities representing the liquidity of the firm. $INVFATA_{it}$ is the ratio of sum of inventory and fixed assets to total assets representing the tangibility of assets, CTAit is the ratio of cash to total assets representing financial flexibility of firms, ΔEBITDTAit is the percentage change in the earnings before interest, tax and depreciation to total assets representing the volatility of the firm, GDP_{it} is the expected GDP and $INF_{it}$is the inflation.

Model	Intercept	Regression Coefficients of									R^2	F-test
		In S	CR	INF	INVFATA	EBITDTA	GDP	CTA	Δ TA	DEPTA	ΔEBITDTA	
1	11.970 (0.000)	- 0.578 (0.000)									0.331	120.997 (0.000)
2	2.868 (0.000)		- 0.448 (0.000)								0.197	60.719 (0.000)
3	1.317 (0.000)			0.070 (0.000)							0.015	4.576 (0.033)
4	11.045 (0.000)	- 0.487 (0.000)	- 0.293 (0.000)								0.407	84.065 (0.000)
5	10.636 (0.000)	- 0.488 (0.000)	- 0.293 (0.000)	0.115 (0.020)							0.418	58.925 (0.000)
6	11.339 (0.000)	- 0.508 (0.000)	- 0.316 (0.000)	0.114 (0.020)	- 0.095 (0.064)	0.085 (0.093)					0.426	36.958 (0.000)
7	11.143 (0.000)	- 0.507 (0.000)	- 0.317 (0.000)	0.106 (0.033)	- 0.095 (0.062)	0.084 (0.095)	0.042 (0.381)				0.426	30.897 (0.000)
8	11.210 (0.000)	- 0.504 (0.000)	- 0.320 (0.000)	0.110 (0.029)	- 0.107 (0.046)	0.118 (0.083)	0.044 (0.378)	- 0.052 (0.439)	- 0.005 (0.917)		0.422	23.113 (0.000)
9	11.162 (0.000)	- 0.501 (0.0000	- 0.320 (0.000)	0.110 (0.029)	- 0.103 (0.067)	0.128 (0.117)	0.044 (0.376)	- 0.064 (0.455)	-0.008 (0.883)	- 0.016 (0.821)	0.420	20.467 (0.0000
10	11.160 (0.000)	- 0.501 (0.000)	- 0.320 (0.000)	0.110 (0.029)	- 0.103 (0.068)	0.128 (0.128)	o.044 (0.378)	- 0.064 (0.457)	- 0.007 (0.909)	- 0.016 (0.823)	0.000 (1.000)	0.417 18.341 (0.000)

Note: The values in parenthesis are p – values showing the level of significance of the values of beta coefficients.

Size of the firms

The effect of size on leverage is ambiguous. Titman and Wessels (1988) argue that large firms tend to be more diversified and fail less often. Accordingly, the trade-off theory predicts a positive relationship between size and leverage. On the other hand, size can be regarded as a proxy for information asymmetry between firm insiders and capital markets. Large firms are more closely observed by analysts, and hence they should be more capable of issuing information sensitive equity. Accordingly, the pecking order theory predicts a negative relationship between size and leverage with larger firms exhibiting increasing preference for equity relative to debt. The size of the firm, which is measured as the natural logarithm of sales in this study, is negatively related with all three debt ratios and found statistically significant at 1 percent level of significance. The results show that the bigger firms in terms of the sales tend to use less amount of debt capital. The result of this study with respect to size is found to be inconsistent with the most of the studies undertaken in developed and underdeveloped countries including Rajan and Zingales (1995) and Bevan and Danbolt (2002, 2004) where they find positive relationship between debt level and size of the firm. They argue that large firms are more diversified and less vulnerable to bankruptcy costs which enabled them to borrow at lower interest rate along with higher level of leverage. The result of this study in respect of size is consistent with Titman and Wessels (1988) as they find a negative relationship between the firm size and debt level.

The result of this study supports the pecking order theory showing the negative relationship between debt ratio and firm size. Since the results are statistically significant at 1 percent level of significance with all the debt ratios, the null hypothesis as there is no

relationship between size and debt ratio is rejected and size of the firm can be considered as one of the significant variable in explaining the debt ratios of Nepalese manufacturing firms. The variable firm size alone described 34.7 percent, 7.8 percent, and 33.1 percent variations in short term, long term, and total debt ratios respectively. In addition, the significant values of F-test indicate the significance of the model used. With this it can be concluded that the firm size is one of the major determinant of all three types of debt ratios in Nepalese manufacturing firms.

Liquidity

The liquidity of the firm measures short term debt paying capacity when they become due. This variable is more concerned with short term debt than long term debt of the firms. In the recent studies, the variable liquidity has been considered as a significant variable affecting the debt ratios of the firms. The current ratio, measured as the ratio of total current assets to total current liabilities, is taken to measure the liquidity of the firms in this study. The findings of significant negative relationship of liquidity with respect to all three debt ratios are consistent with Krenusz (2004). The results are found to be statistically significant at 1 percent level of significance in the case of short term debt and total debt ratios but not with long-term debt ratio. The results show the firms having high debt ratios have low liquidity. Based on the findings, the null hypothesis of no relationship between liquidity and debt ratios is rejected. This indicates the liquidity is one of the variables affecting the short term debt ratios of Nepalese firms. The variable liquidity alone explains the variation in the short term debt ratio to the extent of 23.7 percent. The f-statistic shows the significance of the model used.

Tangibility of assets

The previous studies have evidenced the importance of the type of assets owned by a firm as it affects the firm's capital structure choice. If a firm has more tangible assets in its composition of total assets, it has higher capacity to raise debt on the collateral argument. Based on these arguments it is expected the positive relationship between tangibility of assets and debt ratio of the firm. But inconsistent with the expectation, the relationship between tangibility with short-term debt ratio and total debt ratio found to be negatively related whereas the relationship with long-term debt is positive. The results with short term debt and long term debt are statistically significant at 1 percent level of significance whereas the results with total debt are significant at 10 percent level of significance. Since the tangibility makes debt less risky, its influence on firm's capital structure is not unambiguous. Galai and Masulis (1976) and Jensen and Meckling (1976) argue that stockholders of levered firms are prone to overinvest, which can lead to the shareholders-bondholders conflict. However, if debt can be secured against existing assets, creditors have an improved guarantee of repayment, and the recovery rate will be higher. Therefore, in the trade-off theory, the lower expected cost of financial distress and fewer debt-related agency problems predict a positive relationship between tangibility and debt ratio. The results with long-term debt, indicating the positive relationship, support the predictions of trade-off theory.

In contrast, Grossman and Hart (1982) argue that agency costs of managers consuming more than the optimal level of perquisites are higher for firms with lower levels of assets that can be used as collateral. Managers of highly levered firms will be less able to consume excessive perquisites because bondholders will more closely monitor such

firms. Moreover, the low information asymmetry associated with tangible assets makes equity issuances less costly (Harris and Raviv, 1991). The monitoring costs are generally higher for firms with less assets that can be used for collateral and hence they might voluntarily choose higher debt levels to limit consumptions of perquisites. This notion implies a negative relationship between tangibility of assets and leverage under the pecking order theory. The result with short-term debt and total debt, indicating the negative relationship, are consistent with the predictions of pecking order theory. The result observed with long-term debt, indicating the positive relationship, is consistent with previous studies including Pandey (2002); Drobetz and Fix (2003) and Fan et al. (2003). However the negative relationship observed with short-term debt and total debt are consistent with the findings of Ferri and Jones (1979) and Nivirozhkin (2005). The findings reject the null hypothesis of no relationship between debt ratio and assets tangibility. Based on the results, it can be concluded that asset tangibility plays a significant role in determining the debt ratios of Nepalese firms.

Growth of the firms

According to trade-off theory, the firms with more growth opportunities have less leverage because they have stronger incentives to avoid underinvestment that can raise stockholder-bondholder agency conflicts. This notion is further supported by Jensen's (1986) free cash flow theory, which predicts that firms with more investment opportunities have less need for the disciplining effect of debt payments to prevent managerial squandering.

Following the Titman and Wessels (1988), the growth opportunities of the firms have been measured as the ratio of change in fixed assets to total assets in this study. The positive relationships of growth opportunities with long-term debt ratio and negative relationship with both the total debt ratios and short-term debt ratio have been observed in this study. But the results are not statistically significant. Though the results with short term debt and total debt are not statistically significant, these results are consistent with the findings of Kayham and Titman (2007). According to them, growth firms can issue equity at lower cost of information asymmetries, saving their borrowing capacity for the future financing requirements. However, based on the p-values indicating the insignificant results, it supports to accept the null hypothesis as there is no significant relationship between growth of the firms and debt ratios in Nepalese firms. So, the growth opportunities do not seem to be an important factor determining the debt ratio of selected manufacturing firms.

Profitability

Profitability measures the economic performance of the firms. The high profitability of the firms reduces the use of debt capital (Rajan and Zingales 1995; Baker Wurgler 2002; Welch 2004). The finding has its economic rationale in pecking order hypothesis where firms prefer retained earnings to debt. The pecking order model predicts that higher earnings should result in less leverage. Firms prefer raising capital initially from retained earnings, then from debt, and finally from issuing new equity. This hierarchy of financing choices is due to the adverse selection costs associated with new equity issues in the presence of information asymmetries. In this case, debt grows when investment exceeds retained earnings and falls when investment is less than retained earnings. Accordingly, a

negative relationship between leverage and profitability would be a strong support for the pecking order theory.

Following the Titman and Wessels (1988) the profitability has been measured as the ratio of operating profit plus depreciation to total assets in this study. Inconsistent with what have been reported in the majority of the previous studies, in this study the profitability have been found to be positively related to all three types of ratios, namely short-term debt ratio, long-term debt ratio and total debt ratio. But all the results found are statistically insignificant. This results support the prediction of trade-off theory over that of pecking order theory. These findings suggest that profitable firms are less likely to experience bankruptcy costs, consequently enabling them to raise more debt at an attractive rate. An alternative explanation for these results is that Nepalese firms may have the desire to be at their target leverage ratio. Due to their conservative credit policies, Nepalese banks usually offer debt to less risky firms at lower rate of risk premium. Since high profitable Nepalese firms may be less likely to experience bankruptcy costs, this will increase their ability to reduce the costs of moving toward their target debt ratio.

Non-debt tax shields

The theory suggests that the existence of non-debt tax shields, such as depreciation and amortizations, reduces the tax advantages of debt and consequently reduce the need to raise debt for tax consideration. Consistent with the prediction of the trade-off theory, non-debt tax shields are found to be negatively related with short-term debt and total debt but positively with long-term debt. The results with short term debt and total debt, though

they are consistent with the theory, are not statistically significant. The result with long term debt is not consistent with the theory but the positive coefficients are statistically significant at 5 percent level of significance. The non-debt tax shields have been measured as the ratio of depreciation expenses to total assets in this study following the Titman and Wessels (1988). Many of the previous studies including Ozkan (2001); Banerjee, et al., (2000) and Flannery and Rangan (2006) find the negative relationship between non-debt tax shields and debt ratio as suggested by the theory. Though the findings with respect to short term debt and total debt ratio support the theory and are consistent with previous studies, the results are not statistically significant and the null hypothesis is to be accepted stating there is no relationship between non-debt tax shields and short term debt ratios and total debt ratio. The relationship observed with the long term debt, though it is inconsistent with the theory, is significant. However this factor explains only 3 percent in the variation in the long term debt.

Volatility

Firms with volatile cash flows experience higher expected cost of financial distress, and the debt-related agency costs are also more pronounced with increasing volatility. Additionally, more volatile cash flows reduce the probability that the tax shield will be fully utilized. Therefore, the trade-off theory implies a negative relationship between leverage and the volatility of cash flows. The pecking order theory allows for the same prediction. According to DeAngelo and Masulis (1980), investors have little ability to accurately forecast future earnings based on publicly available information for the firms with high earnings volatility. Moreover, in order to reduce the necessity of issuing new equity or else being unable to realize profitable investment when cash flows are low,

firms with more volatile cash flows maintain low leverage. Accordingly, the pecking order theory also predicts a negative relationship between leverage and cash flows volatility.

The results of this study show a positive relationship between volatility and short-term debt ratio but the results are not significant. However, the relationship with long-term debt found to be negative and again they are not statistically significant. The volatility is measured as the ratio of change in operating profit plus depreciation to total assets. The results found with long-term debt are in line with the prediction of both trade-off theory and pecking order theory and the findings of Banerjee et al. (2000) and Miguil and Pindado (2001). The finding of this study indicates that the volatility of the earnings of Nepalese firms exerts a negative impact on their ability to use long-term debt. This supports the view that firms with high earnings volatility carry the risk of bankruptcy or financial distress reducing their desire to raise long-term debt.

Financial flexibility

In this study the financial flexibility is measured as the ratio of cash and marketable securities to total assets. Consistent with the prediction of pecking order theory by Myers (1984), the result reveals the negative relationship between financial flexibility and long-term debt ratio and total debt ratio. But the relationship with short-term debt found to be positive. The results with all three debt ratios are statistically insignificant. Most of the past studies including Gulati (1997); Singh and Hodder (2000) and Upneja and Dalbor (2001) find the negative relationship between debt ratio and financial flexibility. The results of this study, except with short-term debt, are consistent with the results of above

mentioned studies. This indicates that the firms having high financial flexibility tend to use more short-term debt as compared to long-term debt in Nepalese firms.

Expected GDP

Financial leverage makes firms riskier in the sense that it makes them more vulnerable to industry-specific shocks. Yet, an argument can be made that the most relevant risk for the providers of capital (both shareholders and debt holders) is related to economy-wide shocks. Specifically, business cycle fluctuations are beyond the control of any individual firm, are largely unpredictable, and can have a large impact on firm performance. Campello (2003) provides extensive evidence on the sensitivity of highly levered firms to changes in economic activities. Following negative shocks to economic activity, highly levered firms lose market share in industries in which rivals are relatively unlevered. In terms of economic significance, the industry-adjusted sales growth of the more levered firms is nearly 1.3 percent lower than that of their unlevered rivals following a 1 percent decline in GDP. These results show that financial leverage increases operating risk and are broadly consistent with the predictions of Bolton and Scharfstein (1990) and Chevalier (1995). Once again, no support exists for the alternative prediction that financial leverage helps firms gain market share during times of economic distress. Gross Domestic Product (GDP) is one of the major macroeconomic variables that have been tested in recent studies as a determinant of capital structure. In the study of Balla and Mateus (2004), GDP is examined to see the effect on debt ratio of the firms in Hungary and Portugal. The study indicates a significant effect on capital structure of the firms in both the countries. In this study expected GDP is tested and found positive relationship with all three debt ratios as suggested by the theories, but the results are not statistically

significant. However, it indicates the relationship of leverage and GDP though it is insignificant statistically.

Expected Inflation

Another important macroeconomic variable considered in this study is the Inflation. Taggart (1985) argues that high expected inflation increases the real value of the tax deductions. Therefore, higher expected inflation should lead to higher leverage in the trade-off theory. The positive relationship between expected inflation and leverage can also be the result of debt market timing. Managers attempt to issue debt when expected inflation is high relative to current interest rates.

In this study, the inflation rate of the following year is taken as a measure of expected inflation. The results show the positive relationship with all three types of ratios. The relationship with long-term debt ratio and total debt ratio are statistically significant at 5 percent level of significance. However, the result with short-term debt is statistically insignificant. The result is consistent with the study carried out by Sener (1989) and trade-off theory. The results indicate that Nepalese firms tend to use more long debt when the inflation is expected to increase in future. The results do not support the null hypothesis of no relationship between debt ratio and expected inflation. So, rejecting the null hypothesis it can be concluded that the expected inflation is one of the major determinant of capital structure of Nepalese firms.

Based on the stepwise regression results presented in Tables 4.14, 4.15, and 4.16, different sets of factors explaining the capital structure of Nepalese firms have been identified. Table 4.14 presents the results from 10 different models with respect to short

term debt ratio. Regression model 8, consisting of 7 different factors namely, size of the firm, liquidity, tangibility of assets, financial flexibility, profitability, non-debt tax shield, and GDP, found to be highly explanatory model explaining the variation in short term debt to the extent of 54.2 percent with significant F-value indicating the significance of the model at 1 percent level of significance. However, among the 7 factors, only 3 factors size of the firms, liquidity, and tangibility are statistically significant at 1 percent level of significance. Thus, these three factors can be considered as significant factors explaining the short term debt ratio of Nepalese manufacturing firms.

Table 4.15 presents the results of 10 different regression equations with respect to long term debt ratio. Based on the results revealed by different models, model 9, consisting of 8 different factors namely, tangibility, size of the firm, inflation, non-debt tax shields, financial flexibility, volatility, profitability, and liquidity has explained the variation in the long term debt ratio to the extent of 20.9 percent which is the highest. The corresponding F-value of this model is statistically significant at 1 percent level of significance indication the significance of the model explaining the variation in long term debt. However, out of the 8 factors, only three factors tangibility, size of the firm, and inflation are found to be the significant factors to explain the variation in long term dent at 1 percent level of significance. Therefore, based on the results, it can be concluded that tangibility of the assets, size of the firms, and inflation are the key determinants of long term debt ratio of Nepalese manufacturing firms.

The result with respect to total debt has been presented in Table 4.16. Among the 10 different models, model 7, having 6 different factors, has explained the variation in total debt to the extent of 42.6 percent as highest. The results reveal that out of the 6 factors,

size of the firm and liquidity are significant at 1 percent level of significance. The factor inflation found to be significant at 5 percent level of significant and two factors tangibility and profitability are significant at 10 percent level of significance. The factor GDP though having the explanatory variable of the equation is not statistically significant. Based on the corresponding F-value of this equation, the model is found to be significance in explaining the variation in the total debt. With this it can be concluded that tangibility of assets, liquidity, inflation, size of the firm, and profitability are the major factors determining the level of total debt ratio of Nepalese firms.

4.4.1 Regression results for private and public sector firms

Having established the most influential factors that are likely to explain capital structure decisions and the variation in three different debt ratios with full sample, taking the data from both the private and public firms together, attention now focuses on examination of the factors influencing the capital structure in private firms and public firms separately. The objective of this separate examination is to examine whether the results from full sample are equally applicable in both private and public firms separately or there exist different results in respect of factors influencing the debt ratios. This sub-section is concerned with the examination of factors affecting the debt ratios in private firms based on the data from fifteen private firms and twelve public firms considered in this study.

Table 4.17 and 4.18 present the stepwise regression results on short term debt ratio from private and public sector firms respectively. From the results, among ten explanatory variables, six variables namely, firm size, liquidity, tangibility, financial flexibility,

Table 4.17

Regression of independent variables on short term debt ratio, DR_1 (measured as short-term debt to total asset) from private sector firms

The results are based on the following Regression Models;

$$DR_1 = \alpha_t + \beta_{1t}(\ln S_{it}) + \beta_{2t}(\Delta TA_{it}) + \beta_{3t}(DEPTA_{it}) + \beta_{4t}(EBITDTA_{it}) + \beta_{5t}(CR_{it}) + \beta_{6t}(INVFATA_{it}) + \beta_{7t}(CTA_{it}) + \beta_{8t}(\Delta EBITDTA_{it}) + \beta_{9t}(GDP_{it}) + \beta_{10t}(INF_{it}) + \varepsilon_{it}$$

This table presents the results of regression equations DR_1 on various explanatory variables considered in this study. In addition, p-values of each of regression coefficients are also provided to give the information regarding the significance of the coefficients of the explanatory variables selected in this study. DR_1 is the ratio of short-term debt to total assets. $\ln S_{it}$ is the natural logarithm of sales representing the size if the firm. ΔTA_{it} is the percentage change in total assets representing the growth of the firm. $DEPTA_{it}$ is the ratio of annual depreciation to total assets representing the non-debt-tax-shield. $EBITDTA_{it}$ is the ratio of earnings before interest, tax and depreciation to total assets representing the profitability of the firm. CR_{it} is the ratio of current assets to current liabilities representing the liquidity of the firm. $INVFATA_{it}$ is the ratio of sum of inventory and fixed assets to total assets representing the tangibility of assets, CTAit is the ratio of cash to total assets representing financial flexibility of firms, ΔEBITDTAit is the percentage change in the earnings before interest, tax and depreciation to total assets representing the volatility of the firm, GDP_{it} is the expected GDP and $INF_{it}$is the expected inflation.

Model	Intercept	Regression Coefficients of regression equation on Short term debt										R^2	F-test
		In S	CR	INVFATA	CTA	ΔEBITDTA	DEPTA	Δ TA	EBITDTA	GDP	INF		
1	12.317 (0.000)	- 0.775 (0.000)										0.598	201.495 (0.000)
2	1.781 (0.000)		- 0.412 (0.000)									0.163	27.764 (0.000)
3	2.411 (0.000)			- 0.279 (0.001)								0.071	11.468 (0.001)
4	11.913 (0.000)	- 0.720 (0.000)	- 0.252 (0.000)									0.656	129.701 (0.000)
5	11.843 (0.000)	- 0.759 (0.000)	- 0.258 (0.000)	- 0.227 (0.000)								0.704	108.180 (0.000)
6	12.143 (0.000)	- 0.776 (0.000)	- 0.259 (0.000)	- 0.124 (0.000)	0.217 (0.000)							0.717	86.703 (0.000)
7	12.240 (0.000)	- 0.742 (0.000)	- 0.283 (0.000)	- 0.113 (0.019)	0.200 (0.000)	0.123 (0.000)						0.727	72.936 (0.000)
8	12.560 (0.000)	- 0.770 (0.000)	- 0.299 (0.000)	- 0.166 (0.002)	0.240 (0.000)	0.108 (0.018)	0.130 (0.021)					0.736	63.760 (0.000)
9	12.470 (0.000)	- 0.766 (0.000)	- 0.304 (0.000)	- 171 (0.002)	0.215 (0.000)	0.105 (0.000)	0.098 (0.152)	0.015 (0.750)	0.061 (0.290)			0.734	47.684 (0.000)
10	12.550 (0.000)	- 0.768 (0.000)	- 0.303 (0.000)	- 0.170 (0.002)	0.215 (0.000)	0.104 (0.028)	0.098 (0.157)	0.016 (0.742)	0.062 (0.289)	- 0.025 (0.591)	0.010 (0.832)	0.731	37.670 (0.000)

Note: The values in parenthesis are p – values showing the level of significance of the values of beta coefficients.

Table 4.18

Regression of independent variables on short term debt ratio, DR_1 (measured as short-term debt to total asset) from public sector firms

The results are based on the following Regression Models;

$$DR_1 = \alpha_t + \beta_{1t}(\ln S_{it}) + \beta_{2t}(\Delta TA_{it}) + \beta_{3t}(DEPTA_{it}) + \beta_{4t}(EBITDTA_{it}) + \beta_{5t}(CR_{it}) + \beta_{6t}(INVFATA_{it}) + \beta_{7t}(CTA_{it}) + \beta_{8t}(\Delta EBITDTA_{it}) + \beta_{9t}(GDP_{it}) + \beta_{10t}(INF_{it}) + \varepsilon_{it}$$

This table presents the results of regression equations DR_1 on various explanatory variables considered in this study. In addition, p-values of each of regression coefficients are also provided to give the information regarding the significance of the coefficients of the explanatory variables selected in this study. DR_1 is the ratio of short-term debt to total assets. $\ln S_{it}$ is the natural logarithm of sales representing the size if the firm. ΔTA_{it} is the percentage change in total assets representing the growth of the firm. $DEPTA_{it}$ is the ratio of annual depreciation to total assets representing the non-debt-tax-shield. $EBITDTA_{it}$ is the ratio of earnings before interest, tax and depreciation to total assets representing the profitability of the firm. CR_{it} is the ratio of current assets to current liabilities representing the liquidity of the firm. $INVFATA_{it}$ is the ratio of sum of inventory and fixed assets to total assets representing the tangibility of assets, CTAit is the ratio of cash to total assets representing financial flexibility of firms, ΔEBITDTAit is the percentage change in the earnings before interest, tax and depreciation to total assets representing the volatility of the firm, GDP_{it} is the expected GDP and $INF_{it}$is the expected inflation.

Model	Intercept	Regression Coefficients of regression equation on Short term debt									R^2	F-test
		CR	DEPTA	INVFATA	ln S	GDP	INF	ΔEBITDTA	Δ TA	EBITDTA	CTA	
1	2.471 (0.000)	- 0.628 (0.000)										0.389	74.776 (0.000)
2	1.614 (0.000)		- 0.222 (0.016)									0.041	5.955 (0.016)
3	1.416 (0.015)			- 0.023 (0.809)								0.008	0.059 (0.809)
4	6.287 (0.000)				- 0.596 (0.000)							0.182	26.727 (0.000)
5	2.471 (0.000)	- 0.660 (0,000)	- 0.695 (0.000)									0.471	52.634 (0.000)
6	0.940 (0.000)	- 0.706 (0.000)	- 0.243 (0.000)	- 0.161 (0.000)								0.487	37.758 (0.000)
7	7.612 (0.000)	- 0.608 (0.000)	- 0.184 (0.010)	- 0.281 (0.001)	- 0.286 (0.001)							0.534	34.285 (0.000)
8	6.881 (0.000)	- 0.625 (0.000)	- 0.186 (0.008)	- 0.277 (0.001)	- 0.264 (0.001)	0.094 (0.144)	0.073 (0.263)					0.543	23.981 (0.000)
9	6.695 (0.000)	- 0.627 (0.000)	- 0.190 (0.008)	- 0.266 (0.001)	- 0.252 (0.002)	0.094 (0.146)	0.074 (0.261)	- 0.074 (0.502)	0.030 (0.789)			0.538	17.855 (0.000)
10	6.696 (0.000)	- 0.627 (0.000)	- 0.189 (0.009)	- 0.266 (0.001)	- 0.251 (0.003)	0.094 (0.148)	0.074 (0.263)	- 0.073 (0.512)	0.028 (0.804)	- 0.004 (0.956)	0.001 (0.984)	0.517	15.645 (0.000)

Note: The values in parenthesis are p – values showing the level of significance of the values of beta coefficients.

non-debt tax shields, and volatility have been observed to be significant variable in explaining the variation of short term debt ratios of private firms. Among these six significant variables, firm size, liquidity, and tangibility are negatively related to short term debt ratio and the variables financial flexibility, non-debt tax shields, and volatility are positively related to short term debt ratios of private firms. However, only four variables namely, liquidity, non-debt tax shields, tangibility, and firm size have been observed as significant variables explaining the variation of short term debt ratio of public firms and all are found to be negatively related to short term debt ratio. The results show that firm size, liquidity, non-debt tax shields, and tangibility are significant variables in explaining the variation of short term debt ratio of both private and public sector firms. The variables financial flexibility and volatility have been observed as significant only in private sector firms. The rest variables are insignificant in both private and public firms.

The negative relationship of size of the firms with short term debt ratios in both private and public firms shows that the bigger firms intend to use less amount of short term debt. Since the size can be regarded as a proxy for information asymmetry between firm insiders and capital markets, large firms are more closely observed by analysts, and hence they should be more capable of issuing equity. Accordingly, the pecking order theory predicts a negative relationship between leverage and size, with larger firms exhibiting increasing preference for equity relative to debt. The observed result is consistent with pecking order theory. Similarly, the significant negative relationships observed with liquidity in both private and public firms indicate that the firms having high short term debt ratios have low liquidity and the results are consistent with Krenusz (2004).

Another significant variable is asst tangibility. The negative relationships between tangibility and short term debt ratios in both private and public firms indicate that firms having more tangible assets intend to use less amount of short term debt. The result of this study indicating the negative relationship between short term debt and assets tangibility is consistent with the findings of Ferri and Jones (1979).

Compared to the results from private firms with full sample with respect to short term debt ratio, two more variables namely, non debt tax shield and volatility, found to be significant variables explaining the variation in short term debt ratios of private firms. Based on the value of R-bar squared, 73.6 percent of variation in the short term debt of private firms has been explained by above mentioned six significant variables. Except with non-debt tax shield, the relationships observed with the rest of the variables are same as in full sample. The relationship between non-debt tax shield and short term debt ratio of private firms is found to be positive, whereas the same is found to be negative with the data from full sample. This indicates the private firms having more non-debt tax shields seem to use more short term debt. This result is not consistent with the theory and most of the previous studies.

Thus, the results from private firms with respect to short term debt ratio are not significantly different with results observed from full sample. In comparison of results from public firms with the results from full sample of short term debt ratio, non-debt tax shield has been observed as significant variable in public sector firms which is not in results from full sample. The variables firm size, liquidity, and tangibility are significant in both full sample and public firm.

Table 4.19 and 4.20 are the stepwise regression results on long term debt of various factors affecting the capital structure in private and public sector firms respectively. The results show that only four variables namely, size of the firms, tangibility of the assets, non-debt tax shields, and inflation as significant variables in explaining the variation in long term debt of private firms. The results from public firms show that non-debt tax shields, inflation, size of the firms, and profitability as significant variables explaining the long term debt ratio. The difference observed between private and public firms is only in respect of profitability and tangibility. Tangibility has been observed as significant variable in private firms but it is not in public firms. The profitability has been observed as significant variable in public firms but it is not in private firms.

The observed negative relationship of long term debt with size of the firms indicates that the firms bigger in size tend to use less amount of long term debt. Though this negative relationship is not consistent with trade-off theory, the result is consistent with the pecking order theory. The result of the study conducted by Titman and Wessels (1988) shows a negative relationship between the firm size and debt ratio and the result observed in this study with respect to relationship between long term debt and size of the firms in both private and public firms is consistent with it.

The next significant variable observed from the result explaining the variation in long term debt of private firms is the tangibility of assets. The result observed with long-term debt indicating the positive relationship is consistent with theories and the previous studies including Pandey (2002); Drobetz and Fix (2003) and Fan et al., (2003). Since the debt can be secured against existing assets, creditors have an improved guarantee of repayment, and the recovery rate will be higher. Therefore, according to the trade-off

Table 4.19

Regression of independent variables on long term debt ratio, DR_2(measured as long-term debt to total asset) from private sector firms

The results are based on the following Regression Models;

$$DR_2 = \alpha_t + \beta_{1t}(\ln S_{it}) + \beta_{2t}(\Delta TA_{it}) + \beta_{3t}(DEPTA_{it}) + \beta_{4t}(EBITDTA_{it}) + \beta_{5t}(CR_{it}) + \beta_{6t}(INVFATA_{it}) + \beta_{7t}(CTA_{it}) + \beta_{8t}(\Delta EBITDTA_{it}) + \beta_{9t}(GDP_{it}) + \beta_{10t}(INF_{it}) + \varepsilon_{it}$$

This table presents the results of regression equation DR_2 on various explanatory variables considered in this study. In addition, p-values of each of regression coefficients are also provided to give the information regarding the significance of the coefficients of the explanatory variables selected in this study. DR_2 is the ratio of long-term debt to total assets. $\ln S_{it}$ is the natural logarithm of sales representing the size if the firm. ΔTA_{it} is the percentage change in total assets representing the growth of the firm. $DEPTA_{it}$ is the ratio of annual depreciation to total assets representing the non-debt-tax-shield. $EBITDTA_{it}$ is the ratio of earnings before interest, tax and depreciation to total assets representing the profitability of the firm. CR_{it} is the ratio of current assets to current liabilities representing the liquidity of the firm. $INVFATA_{it}$ is the ratio of sum of inventory and fixed assets to total assets representing the tangibility of assets, CTAit is the ratio of cash to total assets representing financial flexibility of firms, ΔEBITDTAit is the percentage change in the earnings before interest, tax and depreciation to total assets representing the volatility of the firm, GDP_{it} is the expected GDP and $INF_{it}$is the expected inflation.

Model	Intercept	Regression Coefficients of										R^2	F-test
		INVFATA	DEPTA	INF	ln S	Δ TA	EBITDTA	CR	ΔEBITDTA	CTA	GDP		
1	0.455	0.423										0.173	29.192
	(0.005)	(0.000)											(0.000)
2	0.087		0.364									0.126	20.777
	(0.248)		(0.000)										(0.000)
3	0.207			0.134								0.011	2.484
	(0.057)			(0.117)									(0.117)
4	0.331				-0.005							0.007	0.003
	(0.546)				(0.956)								(0.956)
5	0.420	0.323	0.017									0.202	18.066
	(0.008)	(0.000)	(0.017)										(0.000)
6	0.599	0.321	0.218	0.157								0.221	13.758
	(0.001)	(0.000)	(0.013)	(0.041)									(0.000)
7	0.366	0.339	0.258	0.177	- 0.166							0.240	11.679
	(0.459)	(0.000)	(0.004)	(0.021)	(0.038)								(0.000)
8	0.344	0.338	0.257	0.173	- 0.161	- 0.015	- 0.004					0.226	7.631
	(0.492)	(0.000)	(0.009)	(0.025)	(0.047)	(0.851)	(0.966)						(0.000)
9	0.313	0.352	0.263	0.179	- 0.127	- 0.001	- 0.009	0.073	- 0.097			0.231	6.078
	(0.537)	(0.000)	(0.008)	(0.021)	(0.043)	(0.987)	(0.916)	(0.369)	(0.219)				(0.078)
10	0.195	0.352	0.228	0.176	- 0.153	- 0.014	- 0.016	0.071	- 0.089	- 0.058	0.054	0.224	4.896
	(0.711)	(0.000)	(0.053)	(0.027)	(0.082)	(0.866)	(0.871)	(0.382)	(0.268)	(0.557)	(0.485)		(0.000)

Note: The values in parenthesis are p – values showing the level of significance of the values of beta coefficients.

Table 4.20

Regression of independent variables on long term debt ratio, DR_2(measured as long-term debt to total asset) from public sector firms

The results are based on the following Regression Models;

$$DR_2 = \alpha_t + \beta_{1t}(\ln S_{it}) + \beta_{2t}(\Delta TA_{it}) + \beta_{3t}(DEPTA_{it}) + \beta_{4t}(EBITDTA_{it}) + \beta_{5t}(CR_{it}) + \beta_{6t}(INVFATA_{it}) + \beta_{7t}(CTA_{it}) + \beta_{8t}(\Delta EBITDTA_{it}) + \beta_{9t}(GDP_{it}) + \beta_{10t}(INF_{it}) + \varepsilon_{it}$$

This table presents the results of regression equations DR_2 on various explanatory variables considered in this study. In addition, p-values of each of regression coefficients are also provided to give the information regarding the significance of the coefficients of the explanatory variables selected in this study. DR_2 is the ratio of long-term debt to total assets. $\ln S_{it}$ is the natural logarithm of sales representing the size if the firm. ΔTA_{it} is the percentage change in total assets representing the growth of the firm. $DEPTA_{it}$ is the ratio of annual depreciation to total assets representing the non-debt-tax-shield. $EBITDTA_{it}$ is the ratio of earnings before interest, tax and depreciation to total assets representing the profitability of the firm. CR_{it} is the ratio of current assets to current liabilities representing the liquidity of the firm. $INVFATA_{it}$ is the ratio of sum of inventory and fixed assets to total assets representing the tangibility of assets, CTAit is the ratio of cash to total assets representing financial flexibility of firms, ΔEBITDTAit is the percentage change in the earnings before interest, tax and depreciation to total assets representing the volatility of the firm, GDP_{it} is the expected GDP and $INF_{it}$is the expected inflation.

Model	Intercept	Regression Coefficients of										R^2	F-test
		ln S	INF	DEPTA	EBITDTA	ΔEBITDTA	INVFATA	CR	GDP	Δ TA	CTA		
1	5.445 (0.000)	- 0.437 (0.000)										0.184	27.105 (0.000)
2	0.478 (0.050)		0.236 (0.010)									0.048	6.793 (0.000)
3	0.825 (0.000)			0.161 (0.084)								0.017	3.044 (0.084)
4	1.547 (0.000)				- 0.190 (0.040)							0.028	4.320 (0.040)
5	4.795 (0.000)	- 0.419 (0.000)	0.198 (0.018)									0.216	16.999 (0.000)
6	4.546 (0.000)	- 0.421 (0.000)	0.212 (0.010)	0.185 (0.024)								0.264	13.489 (0.000)
7	4.620 (0.000)	- 0.398 (0.000)	0.212 (0.010)	0.143 (0.098)	- 0.121 (0.145)							0.252	10.760 (0.000)
8	5.598 (0.000)	- 0.483 (0.000)	0.214 (0.009)	0.228 (0.011)	- 0.125 (0.131)							0.259	7.754 (0.000)
9	5.417 (0.000)	- 0.405 (0.000)	0.221 (0.008)	0.222 (0.014)	- 0.127 (0.125)	- 0.100 (0.226)	- 0.119 (0.238)	- 0.074 (0.421)				0.257	6.719 (0.000)
10	5.182 (0.000)	- 0.402 (0.000)	0.210 (0.013)	0.227 (0.013)	- 0.114 (0.182)	- 0.185 (0.192)	- 0.106 (0.302)	- 0.076 (0.416)	0.036 (0.660)	0.108 (0.456)	0.043 (0.869)	0.248	5.247 (0.000)

Note: The values in parenthesis are p – values showing the level of significance of the values of beta coefficients.

theory, the lower expected cost of financial distress and fewer debt-related agency problems it predicts a positive relationship between tangibility and debt ratio. The results with long-term debt, indicating the positive relationship, support the predictions of trade-off theory. However, the relationship observed with tangibility in public firms is not significant to explain the variation of long term debt. Another significant variable in explaining the variation in long term debt observed in both private and public firms is non-debt tax shield with positive relationship. But, the result is not consistent with the prediction of theory. According to the theory, the main intensive to use debt capital is to take advantage of tax deductible of interest. The presence of non-debt tax shields like depreciation, amortization, and investment tax credits reduce the intensives of using debt capital. A firm with larger non-debt tax shields is supposed to use less debt capital and the relationship between debt capital and non-debt tax shields is expected to be negative. But, as opposed to the theory, the relationship observed in this study is positive which is not supported by the theory of capital structure. The argument for positive relationship may be that the non debt tax shields increase with increase in tangibility of the assets and the tangibility of assets induce the use of long term debt. Bradley et al. (1984) evidences positive relationship between non-debt tax shield and debt capital used by the firms.

Another significant variable explaining the variation in long term debt in both private and public firms is inflation. This variable has been observed statistically significant at 5 percent level of significance. According to trade-off theory, higher expected inflation should lead to higher leverage and a positive relationship between inflation and debt ratio is expected. The positive relationship between expected inflation and debt ratio can also be the result of debt market timing. Managers attempt to issue debt when expected

inflation is high relative to current interest rates. According to the theory, positive relationship has been observed between long term debt and inflation in both private and public firms. Henderson et al. (2006) evidenced that firms issue more long term debt when interest rates are lower, and they time their long term debt issues prior to future increases in interest rates. The profitability has been observed as significant variable in public firms with negative relationship but it is not a significant in case of private firms. This indicates that the public firms are using the profits as a source of financing of first choice supporting the pecking order theory of capital structure.

In comparison with the results from full sample, the results observed in private firms are same with respect to long term debt ratio. However, the results observed in public firms are found to be different with respect to the tangibility. The tangibility has been found as a significant variable in explaining the variation of long term debt in full sample but it is not in case of public firms. The relationship with liquidity and volatility with long term debt found to be negative in both full sample and public firms indicating that public firms with high volatility in income use less long term debt in their capital structure. Among the insignificant variables, the relationship observed with three variables namely, GDP, financial flexibility, and volatility from private firms are same with the results from full sample. But the relationship observed with the rest three insignificant variables of private firms are different from the results from full sample.

Table 4.21 and 4.22 present the regression results of selected variables on total debt of private and public firms respectively. Five variables, namely, size of the firms, liquidity, financial flexibility, non-debt tax shields, and inflation have been found as significant variables in explaining the variation of the total debt ratio in the private firms. Among

Table 4.21

Regression of independent variables on total debt ratio, DR_3 (measured as total debt to total asset) from private sector firms

The results are based on the following Regression Models;

$$DR_3 = \alpha_t + \beta_{1t}(\ln S_{it}) + \beta_{2t}(\Delta TA_{it}) + \beta_{3t}(DEPTA_{it}) + \beta_{4t}(EBITDTA_{it}) + \beta_{5t}(CR_{it}) + \beta_{6t}(INVFATA_{it}) + \beta_{7t}(CTA_{it}) + \beta_{8t}(\Delta EBITDTA_{it}) + \beta_{9t}(GDP_{it} + \beta_{10t}(INF_{it}) + \varepsilon_{it}$$

This table presents the results of regression equations DR_3 on various explanatory variables considered in this study. In addition, p-values of each of regression coefficients are also provided to give the information regarding the significance of the coefficients of the explanatory variables selected in this study. DR_3 is the ratio of total debt to total assets. $\ln S_{it}$ is the natural logarithm of sales representing the size if the firm. ΔTA_{it} is the percentage change in total assets representing the growth of the firm. $DEPTA_{it}$ is the ratio of annual depreciation to total assets representing the non-debt-tax-shield. $EBITDTA_{it}$ is the ratio of earnings before interest, tax and depreciation to total assets representing the profitability of the firm. CR_{it} is the ratio of current assets to current liabilities representing the liquidity of the firm. $INVFATA_{it}$ is the ratio of sum of inventory and fixed assets to total assets representing the tangibility of assets, CTAit is the ratio of cash to total assets representing financial flexibility of firms, ΔEBITDTAit is the percentage change in the earnings before interest, tax and depreciation to total assets representing the volatility of the firm, GDP_{it} is the expected GDP and $INF_{it}$is the expected inflation.

Model	Intercept	Regression Coefficients of										R^2	F-test
		In S	CR	DEPTA	CTA	EBITDTA	Δ TA	INVFATA	ΔEBITDTA	INF	GDP		
1	12.647 (0.000)	- 0.759 (0.000)										0.573	181.879 (0.000)
2	2.139 (0.000)		- 0. 408 (0.000)									0.161	27.234 (0.000)
3	1.614 (0.000)			0.097 (0.256)								0.002	1.304 (0.256)
4	12.239 (0.000)	- 0.736 (0.000)	- 0.250 (0.000)									0.630	115.828 (0.000)
5	12.129 (0.000)	- 0.728 (0.000)	- 0.256 (0.000)	0.160 (0.003)								0.646	83.794 (0.000)
6	12.756 (0.000)	- 0.811 (0.000)	- 0.264 (0.000)	0.232 (0.000)	0.235 (0.000)							0.690	76.213 (0.000)
7	12.636 (0.000)	- 0.805 (0.000)	- 0.268 (0.000)	0.192 (0.005)	0.204 (0.001)	0.065 (0.299)						0.690	61.228 (0.000)
8	12.695 (0.000)	- 0.804 (0.000)	- 0.278 (0.000)	0.214 (0.004)	0.218 (0.001)	0.070 (0.265)	0.036 (0.478)	- 0.035 (0.546)				0.685	43.309 (0.000)
9	12.830 (0.000)	- 0.811 (0.000)	- 0.273 (0.000)	0.198 (0.008)	0.201 (0.002)	0.065 (0.301)	0.021 (0.687)	- 0.021 (0.719)	0.059 (0.242)			0.688	38.208 (0.000)
10	12.745 (0.000)	- 0.819 (0.000)	- 0.267 (0.000)	0.193 (0.010)	0.187 (0.003)	0.068 (0.280)	0.010 (0.852)	- 0.017 (0.770)	0.064 (0.203)	0.085 (0.091)	0.005 (0.984)	0.690	31.094 (0.000)

Note: The values in parenthesis are p – values showing the level of significance of the values of beta coefficients.

Table 4.22

Regression of independent variables on total debt ratio, DR_3(measured as total debt to total asset) from public sector firms

The results are based on the following Regression Models;

$$DR_3 = \alpha_t + \beta_{1t}(\ln S_{it}) + \beta_{2t}(\Delta TA_{it}) + \beta_{3t}(DEPTA_{it}) + \beta_{4t}(EBITDTA_{it}) + \beta_{5t}(CR_{it}) + \beta_{6t}(INVFATA_{it}) + \beta_{7t}(CTA_{it}) + \beta_{8t}(\Delta EBITDTA_{it}) + \beta_{9t}(GDP_{it} + \beta_{10t}(INFLATION_{it}) + \varepsilon_{it}$$

This table presents the results of regression equations DR_3 on various explanatory variables considered in this study. In addition, p-values of each of regression coefficients are also provided to give the information regarding the significance of the coefficients of the explanatory variables selected in this study. DR_3 is the ratio of total debt to total assets. $\ln S_{it}$ is the natural logarithm of sales representing the size if the firm. ΔTA_{it} is the percentage change in total assets representing the growth of the firm. $DEPTA_{it}$ is the ratio of annual depreciation to total assets representing the non-debt-tax-shield. $EBITDTA_{it}$ is the ratio of earnings before interest, tax and depreciation to total assets representing the profitability of the firm. CR_{it} is the ratio of current assets to current liabilities representing the liquidity of the firm. $INVFATA_{it}$ is the ratio of sum of inventory and fixed assets to total assets representing the tangibility of assets, CTAit is the ratio of cash to total assets representing financial flexibility of firms, ΔEBITDTAit is the percentage change in the earnings before interest, tax and depreciation to total assets representing the volatility of the firm, GDP_{it} is the expected GDP and $INF_{it}$is the expected inflation.

Model	Intercept	Regression Coefficients of									R^2	F-test
		CR	ln S	INF	INVFATA	DEPTA	Δ TA	ΔEBITDTA	GDP	EBITDTA	CTA	
1	3.912 (0.000)	- 0.526 (0.000)										0.271	44.082 (0.000)
2	11.731 (0.000)		- 0.511 (0.000)									0.255	40.625 (0.000)
3	1.520 (0.001)			0.125 (0.046)								0.026	4.046 (0.046)
4	1.541 (0.093)				- 0.081 (0.382)							0.002	0.769 (0.382)
5	9.707 (0.000)	- 0.369 (0.000)	- 0.340 (0.000)									0.357	33.221 (0.000)
6	8.492 (0.000)	- 0.393 (0.000)	- 0.313 (0.000)	0.181 (0.015)								0.384	25.142 (0.000)
7	12.801 (0.000)	- 0.424 (0.000)	- 0.413 (0.000)	0.173 (0.016)	- 0.245 (0.003)							0.427	22.588 (0.000)
8	12.808 (0.000)	- 0.424 (0.000)	- 0.412 (0.000)	0.176 (0.016)	- 0.251 (0.005)	0.007 (0.926)	0.032 (0.658)					0.417	14.857 (0.000)
9	11.846 (0.000)	- 0.431 (0.000)	- 0.392 (0.000)	0.160 (0.031)	- 0.225 (0.013)	0.005 (0.945)	0.100 (0.419)	- 0.161 (0.193)	0.079 (0.274)			0.422	11.592 (0.000)
10	11.879 (0.000)	- 0.434 (0.000)	- 0.377 (0.000)	0.161 (0.029)	- 0.225 (0.014)	0.006 (0.942)	0.077 (0.545)	- 0.147 (0.237)	0.079 (0.276)	- 0.065 (0.386)	0.245 (0.764)	0.421	10.364 (0.000)

Note: The values in parenthesis are p – values showing the level of significance of the values of beta coefficients.

these significant variables, size of the firm and liquidity are negatively related to total debt ratio. Non-debt tax shields, financial flexibility, and expected inflation are positively related to total debt ratio of private firms.

Similarly, size of the firm, liquidity, expected inflation, and tangibility have been observed as significant variables explaining the total debt ratio in public firms. The size of the firm and liquidity are negatively related to total debt ratio which is identical as in private firms. As in private firms, expected inflation is positively related to the total debt ratio in public firms. The only differences that have been observed between private and public firms are the significance of tangibility in public firms which is not in private firms and the significance of non-debt tax shield and financial flexibility in private firms which are not in public firms.

Compared to the results from full sample, the results of private and public firms are not much different. The significant variables observed in full sample are firm size, liquidity, inflation, tangibility, and profitability. All these variables are significant at 5 percent level of significance except profitability which is observed significant only at 10 percent. The results with firm size, liquidity, and inflation are same in both private and public firms as in full sample. The result with tangibility observed as significant from full sample and this result is consistent only with the result from public firms. The result from full sample shows that the profitability as a significant variable at 10 percent level of significance, whereas the same is not in both the private and public firms and it is not a significant variable in explaining a variation in total debt of both private and firms.

4.5 Speed of adjustment toward target debt ratio

In the dynamic version of the classic trade-off theory, target leverage can be time-varying. If there are, for any reason, deviation from the optimal capital structure, the theory states that there will be adjustment toward the target debt ratio. Depending on the cost of adjustment, target leverage will be adjusted periodically. The main objective of capital structure research using dynamic partial adjustment models is to examine whether there exits practice of capital structure adjustment periodically if the actual capital structure deviates from target capital structures and then to estimate the speed of adjustment.

The speed of adjustment method involves moving beyond finding determinants of the target debt ratio showing whether the target debt ratio has any relevance for capital structure adjustment. Auerbach (1985) uses partial adjustment model and shows rapid speed of adjustment, particularly for short term debt. In addition, the study finds a negative sigh of lagged debt ratio indicating the adjustment toward target debt ratio. The negative relationship between debt ratio of current year and debt ratio of previous year indicate the existence of practice of capital structure adjustment. The estimates of speed of adjustment show some variation, from 7 percent in Fama and French (2002) and 8 percent in Kayhan and Titman (2007) to 36 percent in Flannery and Rangan (2006) and 32 percent in Antoniou et al. (2008). These findings are based on the regression model.

Table 4.23 is the result of equation 3.10, developed in chapter 3, which measures the sensitivities of the explanatory variables to explain the change in short term debt ratio from previous year to current year. Similarly, Table 4.24 is the results of the equation

Table 4.23

Regression of independent variables on change in short term debt ($\Delta DR1_{it}$) measured as change in short-term debt to total asset

The results are based on the following Regression model;

$$\Delta DR1_{it} = \alpha_t\beta_{1t}InS_{it} + \alpha_t\beta_{2t}\Delta TA_{it} + \alpha_t\beta_{3t}EBITDTA_{it} + \alpha_t\beta_{4t}DEPTA_{it} + \alpha_t\beta_{5t}INVFATA_{it} + \alpha_t\beta_{6t}CR_{it} + \alpha_t\beta_{7t}\Delta EBITDTA_{it} + \alpha_t\beta_{7t}CTA_{it} + \alpha_t\beta_{9t}GDP_t + \alpha_t\beta_{10it}INFLATION - \alpha_tDR1_{it-1} + \varepsilon_{it}$$

This table is concerned with the regression results of regression equations of $\Delta DR1_{it}$ on various explanatory variables considered in this study. The data are from NEPSE, SEBON and The Office of the Auditor General of Nepal. The sample contains 15 Nepalese manufacturing firms from private sector and 10 manufacturing firms from public sector for the period of 12 years from the year 2000 to 2011. $\Delta DR1_{it}$ is the change in the ratio of short-term debt to total assets. lnS_{it} is the natural logarithm of sales representing the size if the firm. ΔTA_{it} is the percentage change in total assets representing the growth of the firm. $DEPTA_{it}$ is the ratio of annual depreciation to total assets representing the non-debt-tax-shield. $EBITDTA_{it}$ is the ratio of earnings before interest, tax and depreciation to total assets representing the profitability of the firm. CR_{it} is the ratio of current assets to current liabilities representing the liquidity of the firm. $INVFATA_{it}$ is the ratio of sum of inventory and fixed assets to total assets representing the tangibility of assets, CTAit is the ratio of cash to total assets representing financial flexibility of firms, GDP_{it} is the change in GDP representing expected GDP and $INF_{it}$is the expected inflation and $DR1_{it-1}$ is the short term debt ratio of previous year.

Model	Intercept	Regression Coefficients of										R^2	F-test
		CR_{it}	$DR1_{t-1}$	GDP_{it}	$EBITDTA_{it}$	ln S_{it}	ΔTA_{it}	$DEPTA_{it}$	$INVFATA_{it}$	CTA_{it}	INF_{it}		
1	0.523	- 0.329										0.033	8.715
	(0.000)	(0.003)											(0.000)
2	0.369		- 0.127									0.018	4.564
	(0.001)		(0.034)										(0.034)
3	- 0.322			0.134								0.023	5.884
	(0.179)			(0.016)									(0.016)
4	- 0.264				1.676							0.027	6.994
	(0.191)				(0.009)								(0.382)
5	0.945	- 0.497	- 0.229									0.082	11.301
	(0.000)	(0.000)	(0.000)										(0.000)
6	0.394	- 0.504	- 0.228	0.137								0.106	9.944
	(0.150)	(0.000)	(0.000)	(0.010)									(0.000)
7	- 0.074	- 0.511	- 0.210	0.136	1.581							0.130	9.317
	(0.819)	(0.000)	(0.001)	(0.010)	(0.010)								(0.000)
8	1.766	- 0.481	- 0.280	0.133	1.747	- 0.216						0.144	8.379
	(0.067)	(0.000)	(0.000)	(0.011)	(0.005)	(0.043)							(0.000)
9	1.795	- 0.483	- 0.283	0.132	1.765	- 2.219	0.006	0.212	- 0.683			0.144	5.939
	(0.076)	(0.000)	(0.000)	(0.012)	(0.006)	(0.050)	(0.938)	(0.944)	(0.174)				(0.000)
10	2.796	- 0.522	- 0.304	0.145	0.659	- 0.284	0.076	5.450	- 0.665	17.482	- 0.390	0.170	4.529
	(0.015)	(0.000)	(0.000)	(0.006)	(0.013)	(0.014)	(0.417)	(0.188)	(0.183)	(0.107)	(0.075)		(0.000)

Note: The values in parenthesis are p – values showing the level of significance of the values of beta coefficients.

Table 4.24

Regression of independent variables on short term debt ratio (DR1it) measured as short-term debt to total asset

The results are based on the following Regression model;

$$DR1_{it} = \alpha_t\beta_{1t}InS_{it} + \alpha_t\beta_{2t}\Delta TA_{it} + \alpha_t\beta_{3t}EBITDTA_{it} + \alpha_t\beta_{4t}DEPTA_{it} + \alpha_t\beta_{5t}INVFATA_{it} + \alpha_t\beta_{6t}CR_{it} + \alpha_t\beta_{7t}\Delta EBITDTA_{it} + \alpha_t\beta_{7t}CTA_{it} + \alpha_t\beta_{9t}GDP_t + \alpha_t\beta_{10it}INFLATION - (1 - \alpha_t)DR1_{it-1} + \varepsilon_{it}$$

This table is concerned with the regression results of regression equations of $DR1_{it}$ on various explanatory variables considered in this study. The data are from NEPSE, SEBON and The Office of the Auditor General of Nepal. The sample contains 15 Nepalese manufacturing firms from private sector and 10 manufacturing firms from public sector for the period of 12 years from the year 2000 to 2011. $DR1_{it}$ is the short-term debt to total assets. lnS_{it} is the natural logarithm of sales representing the size if the firm. ΔTA_{it} is the percentage change in total assets representing the growth of the firm. $DEPTA_{it}$ is the ratio of annual depreciation to total assets representing the non-debt-tax-shield. $EBITDTA_{it}$ is the ratio of earnings before interest, tax and depreciation to total assets representing the profitability of the firm. CR_{it} is the ratio of current assets to current liabilities representing the liquidity of the firm. $INVFATA_{it}$ is the ratio of sum of inventory and fixed assets to total assets representing the tangibility of assets, CTAit is the ratio of cash to total assets representing financial flexibility of firms, ΔEBITDTAit is the percentage change in the earnings before interest, tax and depreciation to total assets representing the volatility of the firm, GDP_{it} is the change in GDP representing expected GDP and $INFLATION_{it}$is the expected inflation and $DR1_{it-1}$ is the short term debt ratio of previous year.

Model	Intercept	Regression Coefficients of										R^2	F-test
		$DR1_{t-1}$	ΔTA_{it}	CR_{it}	$\Delta EBITDTA_i$	ln S_{it}	$INVFATA_{it}$	$EBITDTA_{it}$	GDP_{it}	CTA_{it}	$DEPTA_{it}$		
1	0.190	0.837										0.701	592.721
	(0.003)	(0.000)											(0.000)
2	0.172	0.903	- 0.322									0.768	416.599
	(0.002)	(0.000)	(0.000)										(0.034)
3	0.525	0.836	- 0.310	- 0.303								0.789	313.773
	(0.000)	(0.000)	(0.000)	(0.000)									(0.000)
4	0.485	0.859	- 0.412	- 0.287	0.220							0.802	253-917
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)								(0.000)
5	2.135	0.789	- 0.378	- 0.266	0.219	- 0.189						0.812	214.966
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)							(0.000)
6	3.235	0.741	- 0.360	- 0.335	0.219	- 0.232	- 0.912					0.824	193.897
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)						(0.000)
7	3.326	0.732	- 0.339	- 0.345	0.207	- 0.257	- 0.998	0.651				0.828	169.362
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.031)					(0.000)
8	3.076	0.736	- 0.344	- 0.347	0.211	- 0.216	- 0.997	0.637	0.051			0.831	150.791
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.043)	(0.000)	(0.033)	(0.037)				(0.000)
9	3.060	0.733	- 0.343	- 0.345	0.210	- 0.256	- 0.944	0.397	- 0.051	3.715		0.831	134.274
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.314)	(0.039)	(0.352)			(0.000)
10	3.072	0.734	- 0.341	- 0.345	0.210	- 0.258	- 0.960	0.329	- 0.051	4.525	0.499	0.831	120.202
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.488)	(0.040)	(0.375)	(0.798)		(0.000)

Note: The values in parenthesis are p – values showing the level of significance of the values of beta coefficients.

3.11 which measures the speed of adjustment to achieve the target debt ratio that the firms have targeted as per trade-off theory. Table 4.23 shows the sensitivity of ten explanatory variables namely, liquidity, previous short term debt ratio, GDP, profitability, size of the firms, volatility, non-debt tax shields, tangibility, financial flexibility, and inflation explaining the change in short term debt ratio. Out of ten explanatory variables, six variables, liquidity, previous short term debt ratio, GDP, profitability, size of the firm, and inflation have been observed as significant variables explaining the change in short term debt ratio.

The significant negative relationship between the change in short term debt ratio and liquidity indicates that the changes in short term debt ratios are low for the firms having high liquidity. The significant negative relationship between current and previous short term debt ratio clearly indicates that the firms adjust their short term debt ratio as predicted by trade-off theory. The negative relationship of previous debt ratio shows that the firms adjust the short term debt ratio to achieve the target ratio. According to the trade-off theory, if the actual debt ratio happens to be above the target ratio the firms adjust the same by reducing the debt and if the actual debt ratio happens to be below the target debt ratio the firms adjust the debt ratio by increasing the debt. The negative relationship of previous debt ratio with change in debt ratio supports the theory and the financing behavior of the Nepalese firms is explained by the trade-off theory.

The positive relationship with GDP shows that the changes in short term debt is high if the GDP is expected to increase. Similarly, the positive relationship with profitability indicates that the profitable firms change their short term debt more heavily. The relationship with expected inflation have been observed as negative which indicates that

if the firms expect the inflation to increase the firms tend to change their short term debt at lower rate and vice versa. The relationships observed with the rest of the variables namely, volatility, non-debt tax shields, tangibility, and financial flexibility have been observed as statistically insignificant.

Besides, the value of R-bar square of 0.17 indicates that only 17 percent of the changes in short term debt in Nepalese firms are explained by the ten variables considered in this study. Though there are six significance variables, the significance value of F-statistic shows that the addition of the rest variables improves the regression model. Further, the values of the variance inflation factor (VIF) for all the explanatory variables are less than 10, the results show no evidence of the existence of multicollinearity.

Table 4.24 reveals the regression of ten different variables on short term debt ratio. The regression coefficient of the previous actual debt ratio from the results of equation 3.11, which is presented in Table 4.24 is equal to 1 minus the adjustment rate of debt ratio (1 - α_t) and which is found to be positive. With respect to the coefficient of previous debt ratio, it is found to be statistically significant at 1 percent level of significance suggesting that Nepalese firms have a target debt ratio and move gradually toward target if any deviation exists in respect of short term debt ratio. However, the results indicate that Nepalese firms adjust their actual short term debt ratio much more slowly.

Based on the regression coefficient of the previous actual debt ratio for the determination of debt ratio adjustment rate and actual debt ratio in Table 4.24, the adjustment rate of debt ratio is 0.266 (or 1-0.734). This shows that firms rebalance their short term debt ratio to the target debt ratio at a slower speed of 26.6 percent. This result is based on the Model

10 from the Table 4.24. This implies that, by trading off the benefits of reducing the bankruptcy risk against the costs of the deviation away from the target debt ratio, firms tend to rebalance their short term debt ratio. It suggests that 26.6 percent of the deviation from the target level in respect of the short term debt ratio eliminated within a year.

In addition, the value of R-bar square of 83 percent indicates the model used explains that 83 percent of the change in short term debt ratios of Nepalese firms by the 11 different explanatory variables considered in this study. F-statistics is significant at 1 percent level of significance which indicates linear relationship of dependent variables with independent variables which is necessary requirements for the validity of regression model.

Table 4.25 presents the results of equation 3.10 with ten explanatory variables to measures the change in long term debt ratio. Three variables namely, tangibility, liquidity, and long term debt ratio of previous year found to be significant in explaining the change in long term debt ratio. A significant negative relationship between change in long term debt ratio and the long term debt ratio of previous year indicates that the firms adjust their long term debt according to trade-off theory. If the debt ratio of any particular year happens to more or less than target ratio, the same will be adjusted in the following year which is indicated by the negative relationship them. The significant positive relationship between change in long term debt ratio and liquidity shows that the change in long term debt ratio is high for those firms having high liquidity. Another significant variable observed is the tangibility. The significant positive relationship between tangibility and change in long term debt ratio indicates that the firms having more tangible assets change their long term debt ratio highly.

Table 4.25

Regression results of change in long term debt ($\Delta DR2_{it}$) measured as change in long term debt scaled by total asset and explanatory variables

The results are based on the following Regression model;

$$\Delta DR2_{it} = \alpha_t\beta_{1t} InS_{it} + \alpha_t\beta_{2t}\,\Delta TA_{it} + \alpha_t\beta_{3t}\,EBITDTA_{it} + \alpha_t\beta_{4t}\,DEPTA_{it} + \alpha_t\beta_{5t}\,INVFATA_{it} + \alpha_t\beta_{6t}\,CR_{it} + \alpha_t\beta_{7t}\Delta EBITDTA_{it} + \alpha_t\beta_{9t}GDP_t + \alpha_t\beta_{10it}INFLATION - \alpha_t DR2_{it-1} + \varepsilon_{it}$$

This table is concerned with the regression results of regression equations of $\Delta DR2_{it}$ on various explanatory variables considered in this study. The data are from NEPSE, SEBON and The Office of the Auditor General of Nepal. The sample contains 15 Nepalese manufacturing firms from private sector and 10 manufacturing firms from public sector for the period of 12 years from the year 2000 to 2011. $\Delta DR2_{it}$ is the change in the ratio of long-term debt to total assets. $\ln S_{it}$ is the natural logarithm of sales representing the size if the firm. ΔTA_{it} is the percentage change in total assets representing the growth of the firm. $DEPTA_{it}$ is the ratio of annual depreciation to total assets representing the non-debt-tax-shield. $EBITDTA_{it}$ is the ratio of earnings before interest, tax and depreciation to total assets representing the profitability of the firm. CR_{it} is the ratio of current assets to current liabilities representing the liquidity of the firm. $INVFATA_{it}$ is the ratio of sum of inventory and fixed assets to total assets representing the tangibility of assets, $\Delta EBITDTA_{it}$ is the percentage change in the earnings before interest, tax and depreciation to total assets representing the volatility of the firm, GDP_{it} is the change in GDP representing expected GDP and $INF_{it}$is the expected inflation and $DR2_{it-1}$ is the long term debt ratio of previous year.

Model	Intercept	Regression Coefficients of										R^2	F-test
		$DR2_{t-1}$	CR_{it}	$EBITDTA_{it}$	GDP_{it}	ln S_{it}	$DEPTA_{it}$	ΔTA_{it}	$INVFATA_i$	$\Delta EBITDTA_{it}$	INF_{it}		
1	4.751	- 0.398										0.032	14.256
	(0.223)	(0.000)											(0.000)
2	- 5.614		9.639									0.020	5.207
	(0.265)		(0.023)										(0.023)
3	- 4.856	- 0.838	9.425									0.020	2.626
	(0.407)	(0.009)	(0.030)										(0.074)
4	2.254	- 1.046	9.706	- 24.981								0.025	2.109
	(0.803)	(0.012)	(0.026)	(0.301)									(0.100)
5	0.649	- 1.078	9.675	- 25.026	0.411							0.025	1.585
	(0.968)	(0.018)	(0.026)	(0.301)	(0.844)								(0.179)
6	37.024	- 2.041	11.122	- 20.319	0.369	- 4.548						0.030	1.553
	(0.262)	(0.020)	(0.014)	(0.407)	(0.860)	(0.236)							(0.174)
7	39.088	- 2.375	11.199	- 27.215	0.381	- 5.113	42.928					0.036	1.544
	(0.236)	(0.022)	(0.013)	(0.279)	(0.855)	(0.185)	(0.225)						(0.164)
8	14.436	- 3.699	12.732	- 33.206	0.417	- 4.468	44.215	- 1.905	35.072			0.049	1.588
	(0.684)	(0.021)	(0.006)	(0.192)	(0.842)	(0.252)	(0.732)	(0.509)	(0.080)				(0.129)
9	12.630	- 3.541	12.687	- 31.859	0.377	- 4.295	47.061	- 0.890	35.000	- 2.313		0.050	1.440
	(0.724)	(0.024)	(0.006)	(0.213)	(0.857)	(0.273)	(0.716)	(0.796)	(0.081)	(0.589)			(0.172)
10	9.519	- 3.823	12.677	- 32,364	0.154	- 4.287	50.005	- 1.048	35.361(0.0	- 2.223	0.545	0.052	1.331
	(0.792)	(0.021)	(0.006)	(0.207)	(0.942)	(0.274)	(0.699)	(0.762)	78)	(0.605)	(0.536)		(0.214)

Note: The values in parenthesis are p – values showing the level of significance of the values of beta coefficients.

Having established the fact that Nepalese firms adjust their long term debt based on whether it is more or less in previous year compared to target ratio, to measure the speed of adjustment towards target ratio equation 3.11 has been used and the results have been presented in Table 4.26. From the results it can be observed that out of the ten variables, four variables namely, volatility, non-debt tax shield, inflation, and long term debt of previous year found to be significant variables at 5 percent level of significance. All the significant variables, except the volatility, are found to be positively related to the debt ratio. The positive relationship with inflation shows that the firms tend to increase their debt ratio if the inflation is expected to increase. The positive relationship observed with the non-debt tax shield is not consistent with the theories. Similarly, the negative relationship with volatility indicates that the firms having more volatile in their operating profits tend to use less debt and vice versa.

The trade-off theory or target adjustment theory predicts that firms adjust their debt ratio towards a predetermined target debt ratio. When the observed debt ratio is below the target, the firms will increase their debt ratio to achieve the target and if the observed debt ratio is above the target ratio the firms will reduce their debt ratio to achieve the target ratio. Based on this, the relationship between previous debt ratio and observed debt ratio is expected to be negative.

The regression coefficient of the previous actual debt ratio in equation 3.11 is equal to 1 minus the adjustment rate of debt ratio ($1 - \alpha_t$). With reference to model 10 from Table 4.26, the coefficient of previous debt ratio is 0.726 and the speed of adjustment becomes 0.274 (or 1 – 0.726) which is 27.4 percent. The results indicate that Nepalese firms adjust their long term debt with a speed of 27.4 percent to achieve their target debt ratio.

Table 4.26

Regression results of long term debt ratio (DR2it) measured as long-term debt scaled by total asset and explanatory variables

The results are based on the following Regression model;

$$DR2_{it} = \alpha_t\beta_{1t} InS_{it} + \alpha_t\beta_{2t}\,\Delta TA_{it} + \alpha_t\beta_{3t}\,EBITDTA_{it} + \alpha_t\beta_{4t}\,DEPTA_{it} + \alpha_t\beta_{5t}\,INVFATA_{it} + \alpha_t\beta_{6t}\,CR_{it} + \alpha_t\beta_{7t}\Delta EBITDTA_{it} + \alpha_t\beta_{7t}\,CTA_{it} + \alpha_t\beta_{9t}GDP_t + \alpha_t\beta_{10it}INFLATION - (1 - \alpha_t)DR2_{it-1} + \varepsilon_{it}$$

This table is concerned with the regression results of regression equations of $DR2_{it}$ on various explanatory variables considered in this study. The data are from NEPSE, SEBON and The Office of the Auditor General of Nepal. The sample contains 15 Nepalese manufacturing firms from private sector and 10 manufacturing firms from public sector for the period of 12 years from the year 2000 to 2011. $DR2_{it}$ is the long-term debt to total assets. lnS_{it} is the natural logarithm of sales representing the size if the firm. ΔTA_{it} is the percentage change in total assets representing the growth of the firm. $DEPTA_{it}$ is the ratio of annual depreciation to total assets representing the non-debt-tax-shield. $EBITDTA_{it}$ is the ratio of earnings before interest, tax and depreciation to total assets representing the profitability of the firm. CR_{it} is the ratio of current assets to current liabilities representing the liquidity of the firm. $INVFATA_{it}$ is the ratio of sum of inventory and fixed assets to total assets representing the tangibility of assets, CTAit is the ratio of cash to total assets representing financial flexibility of firms, ΔEBITDTAit is the percentage change in the earnings before interest, tax and depreciation to total assets representing the volatility of the firm, GDP_{it} is the change in GDP representing expected GDP and $INFLATION_{it}$is the expected inflation and $DR2_{it-1}$ is the long term debt ratio of previous year.

Model	Intercept	Regression Coefficients of									R^2	F-test
		$DR2_{t-1}$	$DEPTA_{it}$	INF_{it}	$\Delta EBITDTA_i$	ln S_{it}	ΔTA_{it}	$EBITDTA_{it}$	CA_{it}	$INVFATA_{it}$	GDP	
1	0.165 (0.001)	0.753 (0.001)									0.566	329.5 (0.000)
2	0.460 (0.000)		6.239 (0.004)								0.032	8.322 (0.023)
3	0.309 (0.021)			0.049 (0.003)							0.035	9.165 (0.074)
4	- 0.150 (0.821)	0.748 (0.000)	5.455 (0.000)								0.590	181.305 (0.100)
5	- 0.200 (0.050)	0.735 (0.000)	5.655 (0.000)	0.026 (0.017)							0.599	125.074 (0.179)
6	- 0.197 (0.048)	0.750 (0.000)	5.574 (0.000)	0.026 (0.013)	- 0.167 (0.000)						0.622	103.011 (0.174)
7	0.381 (0.328)	0.730 (0.000)	5.888 (0.000)	0.026 (0.013)	- 0.153 (0.013)	- 0.069 (0.127)	- 0.005 (0.893)				0.626	69.183 (0.164)
8	0.374 (0.338)	0.730 (0.000)	5.802 (0.000)	0.026 (0.019)	- 0.154 (0.003)	- 0.017 (0.121)	- 0.003 (0.935)	0.093 (0.763)			0.626	59.096 (0.129)
9	0.302 (0.480)	0.725 (0.000)	5.510 (0.001)	0.026 (0.013)	- 0.154 (0.003)	- 0.070 (0.140)	- 0.005 (0.911)	0.078 (0.800)	0.007 (0.895)	-0.115 (0.636)	0.626	45.658 (0.172)
10	0.298 (0.486)	0.724 (0.000)	5.124 (0.011)	0.026 (0.013)	- 0.154 (0.003)	- 0.068 (0.161)	- 0.006 (0.881)	0.195 (0.691)	0.007 (0.905)	0.116 (0.634)	- 1.632 (0.769)	0.627	40.950 (0.214)

Note: The values in parenthesis are p – values showing the level of significance of the values of beta coefficients.

Table 4.27 presents the results of equation 3.10 which is designed to test whether the total debt ratio of previous year is significant to explain the change in total debt ratio. A significant negative coefficient of debt ratio of previous year indicates that Nepalese firms adjust their debt capital according to the prediction of trade-off theory to achieve the target debt ratio and the result from this study is consistent with the prediction of the theory.

As indicated in Table 4.27, besides the total debt ratio of previous year, four other variables namely, growth, liquidity, profitability, and volatility have been observed as significant variables in explaining the variation of change in total debt ratio. With the negative relationship with growth, firms having high growth do not change the debt ratio significantly. Higher the growth rate of the firms, lesser would be the change in debt ratio. The positive relationship with profitability indicates that the changes in debt ratios of profitable firms are high. The negative relationship of volatility shows that the change in total debt ratio is low for those firms having volatile profits. Similarly, the negative relationship of liquidity shows that higher the liquidity less would be the change in debt ratio of the firms.

In order to measure the speed of adjustment, the equation 3.11 has been designed and the results are presented in the Table 4.28. Since the debt is adjusted by comparing debt ratio of previous year with the target debt ratio, the coefficient of the debt ratio of previous year shows the speed of adjustment. From the results presented in Table 4.28 considering the model 10 having highest value of R-square, the coefficient of the debt ratio of previous year is 0.785 which is statistically significant at 5 percent level of significance and this is equal to$(1- \alpha_t)$. This shows the speed of adjustment is 0.215 (1 – 0.785) or 21.5 percent. The result indicates that Nepalese firms adjust their total debt ratio much more slowly

Table 4.27

Regression results of change in total debt ($\Delta DR3_{it}$) measured as change in total debt to total asset and explanatory variables

The results are based on the following Regression model;

$$\Delta DR3_{it} = \alpha_t\beta_{1t}\,\Delta TA_{it} + \alpha_t\beta_{2t}\,EBITDTA_{it} + \alpha_t\beta_{3t}\,DEPTA_{it} + \alpha_t\beta_{4t}\,INVFATA_{it} + \alpha_t\beta_{5t}\,CR_{it} + \alpha_t\beta_{6t}\Delta EBITDTA_{it} + \alpha_t\beta_{7t}\,CTA_{it} + \alpha_t\beta_{8t}GDP_t + \alpha_t\beta_{9it}INFLATION - \alpha_t DR3_{it-1} + \varepsilon_{it}$$

This table is concerned with the regression results of regression equations of $\Delta DR3_{it}$ on various explanatory variables considered in this study. The data are from NEPSE, SEBON and The Office of the Auditor General of Nepal. The sample contains 15 Nepalese manufacturing firms from private sector and 10 manufacturing firms from public sector for the period of 12 years from the year 2000 to 2011. $\Delta DR3_{it}$ is the change in the total debt to total assets. ΔTA_{it} is the percentage change in total assets representing the growth of the firm. $DEPTA_{it}$ is the ratio of annual depreciation to total assets representing the non-debt-tax-shield. $EBITDTA_{it}$ is the ratio of earnings before interest, tax and depreciation to total assets representing the profitability of the firm. CR_{it} is the ratio of current assets to current liabilities representing the liquidity of the firm. $INVFATA_{it}$ is the ratio of sum of inventory and fixed assets to total assets representing the tangibility of assets, CTAit is the ratio of cash to total assets representing financial flexibility of firms, ΔEBITDTAit is the percentage change in the earnings before interest, tax and depreciation to total assets representing the volatility of the firm, GDP_{it} is the change in GDP representing expected GDP and $INF_{it}$is the expected inflation and $DR3_{it-1}$ is the total debt ratio of previous year.

Model	Intercept	Regression Coefficients of										R^2	F-test
		ΔTA_{it}	$EBITDTA_i$	$DR3_{t-1}$	$DEPTA_{it}$	$\Delta EBITDTA_{it}$	CRit	$INVFATA_i$	CTA_{it}	GDP	INF_{it}		
1	0.108 (0.000)	- 0.124 (0.000)										0.088	24.365 (0.000)
2	- 0.090 (0.207)		0.607 (0.007)									0.028	7.406 (0.007)
3	0.167 (0.000)			- 0.044 (0.005)								0.031	7.980 (0.005)
4	- 0.009 (0.847)				2.825 (0.008)							0.028	7.241 (0.008)
5	0.093 (0.002)					- 0.093 (0.005)						0.031	7.984 (0.005)
6	- 0.026 (0.709)	- 0.116 (0.000)	0.458 (0.036)									0.104	14.588 (0.000)
7	0.029 (0.706)	- 0.107 (0.000)	0.420 (0.055)	- 0.025 (0.107)								0.113	10.645 (0.000)
8	0.090 (0.343)	- 0.084 (0.007)	0.391 (0.080)	- 0.037 (0.030)	1.449 (0.169)	- 0.030 (0.032)	- 0.087 (0.030)					0.138	6.602 (0.000)
9	0.117 (0.437)	- 0.082 (0.009)	0.271 (0.051)	- 0.036 (0.041)	2.083 (0.155)	- 0.030 (0.027)	- 0.091 (0.032)	- 0.081 (0.637)	1.747 (0.648)			0.139	4.976 (0.000)
10	0.020 (0.907)	- 0.083 (0.008)	0.262 (0.065)	- 0.034 (0.056)	2.089 (0.152)	- 0.028 (0.052)	- 0.092 (0.030)	- 0.084 (0.621)	1.863 (0.627)	0.037 (0.049)	- 0.007 (0.346)	0.154	4.447 (0.000)

Note: The values in parenthesis are p – values showing the level of significance of the values of beta coefficients.

Table 4.28

Regression results of long term debt ratio (DR3it) measured as total debt scaled by total asset and explanatory variables

The results are based on the following Regression model;

$$DR3_{it} = \alpha_t\beta_{1t} InS_{it} + \alpha_t\beta_{2t}\,\Delta TA_{it} + \alpha_t\beta_{3t}\,EBITDTA_{it} + \alpha_t\beta_{4t}\,DEPTA_{it} + \alpha_t\beta_{5t}\,INVFATA_{it} + \alpha_t\beta_{6t}\,CR_{it} + \alpha_t\beta_{7t}\Delta EBITDTA_{it} + \alpha_t\beta_{7t}\,CTA_{it} + \alpha_t\beta_{9t}GDP_t + \alpha_t\beta_{10it}INFLATION - (1-\alpha_t)DR3_{it-1} + \varepsilon_{it}$$

This table is concerned with the regression results of regression equations of $DR3_{it}$ on various explanatory variables considered in this study. The data are from NEPSE, SEBON and The Office of the Auditor General of Nepal. The sample contains 15 Nepalese manufacturing firms from private sector and 10 manufacturing firms from public sector for the period of 12 years from the year 2000 to 2011. $DR3_{it}$ is the total debt to total assets. lnS_{it} is the natural logarithm of sales representing the size if the firm. ΔTA_{it} is the percentage change in total assets representing the growth of the firm. $DEPTA_{it}$ is the ratio of annual depreciation to total assets representing the non-debt-tax-shield. $EBITDTA_{it}$ is the ratio of earnings before interest, tax and depreciation to total assets representing the profitability of the firm. CR_{it} is the ratio of current assets to current liabilities representing the liquidity of the firm. $INVFATA_{it}$ is the ratio of sum of inventory and fixed assets to total assets representing the tangibility of assets, CTAit is the ratio of cash to total assets representing financial flexibility of firms, ΔEBITDTAit is the percentage change in the earnings before interest, tax and depreciation to total assets representing the volatility of the firm, GDP_{it} is the change in GDP representing expected GDP and $INF_{it}$is the expected inflation and $DR3_{it-1}$ is the total debt ratio of previous year.

Model	Intercept	Regression Coefficients of										R^2	F-test
		$DR3_{t-1}$	CRit	ln S_{it}	ΔTA_{it}	GDP_{it}	$\Delta EBITDTA_{it}$	$DEPTA_i$	$EBITDTA_i$	CTA_i	INF_{it}		
1	0.308 (0.001)	0.832 (0.000)										0.691	566.402 (0.000)
2	2.874 (0.000)		- 1.127 (0.000)									0.200	63.116 (0.000)
3	12.307 (0.000)			- 1.245 (0.000)								0.363	143.876 (0.000)
4	0.742 (0.000)	0.776 (0.000)	- 0.360 (0.000)									0.708	306.192 (0.000)
5	3.894 (0.000)	0.684 (0.000)	- 0.312 (0.001)	- 0.360 (0.000)								0.729	224.70 (0.000)
6	2.543 (0.000)	0.783 (0.000)	- 0.264 (0.002)	- 0.218 (0.006)	- 0.374 (0.000)							0.773	212.991 (0.000)
7	2.221 (0.002)	0.785 (0.000)	- 0.267 (0.002)	- 0.218 (0.006)	- 0.411 (0.000)	0.078 (0.037)	0.075 (0.321)					0.778	144.737 (0.000)
8	2.164 (0.003)	0.789 (0.007)	- 0.265 (0.002)	- 0.244 (0.002)	- 0.382 (0.000)	0.077 (0.040)	0.057 (0.452)	2.749 (0.194)	0.627 (0.166)			0.782	110.226 (0.000)
9	2.162 (0.003)	0.791 (0.000)	- 0.262 (0.002)	- 0.251 (0.002)	- 0.378 (0.000)	- 0.076 (0.042)	0.056 (0.466)	3.981 (0.159)	0.260 (0.716)	5.103 (0.509)		0.782	97.803 (0.000)
10	2.221 (0.004)	0.785 (0.000)	- 0.265 (0.002)	- 0.254 (0.002)	- 0.380 (0.000)	- 0.069 (0.067)	0.057(0.455)	3.873 (0.171)	0.301 (0.675)	4.422 (0.569)	0.016 (0.321)	0.783	88.118 (0.000)

Note: The values in parenthesis are p – values showing the level of significance of the values of beta coefficients.

compared to those reported in other countries. Shyam Sunder and Myers (1999) and Flannery and Rangan (2006) have reported 59 percent and 32 percent in USA. Ozkan (2001) reported 57 percent in UK. Similarly, Miguel and Pindado (2001) reported 79 percent with Spanish data. Thus, the results support the validity of trade-off theory in explaining the financing behavior of Nepalese firms.

4.6 Test of pecking order theory of capital structure

Pecking order theory predicts that due to the information asymmetry between a firm and outside investors regarding the real value of both current operations and future prospects, external capital (debt and equity) will always be relatively costly compared to internal capital (retained earnings). Myers and Majluf (1984) argue that information asymmetry will lead to a mispricing of a firm's equity in the marketplace, causing a loss of wealth for existing shareholders. This is because of the adverse selection problem that arises because managers are more knowledgeable than outsiders (investors). Myers and Majluf (1984) claim that if the firm finances its new project by issuing new securities, these securities will be under-priced. This is because managers cannot credibly convey the quality of their existing assets and available investment opportunities to potential investors. As a result, outsiders may not be able to discriminate between good and bad projects, consequently interpreting the firm's decision to issue new securities as a sign of possible bad news and then pricing new securities accordingly. They will demand a premium to invest, or firm can only issue equity at a discount.

Aware of the resulting dilution of current shareholders' wealth, firms may not issue new equity even for projects with positive net present values, causing what is known as underinvestment problem. Therefore, Myers and Majluf (1984) argue that borrowing through debt instruments, especially the less risky ones, helps firms mitigate the inefficiencies in their investment decisions that are caused by the information asymmetry. Compared to equity, debt is likely subject to lower degree of miss-evaluation or adverse selection problem, simply because debt contracts are safer in that they limit the possible ways by which holders could lose. Since the Nepalese capital market is a small and thin market, information is not readily available to outside investors, which poses too much risk for outsiders. Therefore, it is expected that they will demand a premium on, or under price, new equity or debt issues because they are unable to monitor all aspects of investment projects and managerial behavior. This will raise the costs of external finance and then induce Nepalese firms to rely on internally generated funds from retained earning rather than external funds, and raising debt when external funds are needed. Hence, we could expect that the pecking order theory may be more applicable to Nepalese firms.

The test of pecking order theory can be tested in different ways. The pecking order theory claims that if firms are required to finance new projects by issuing equity, under pricing may be so severe that new investors captures more than the net present value of the new project resulting in a net loss to existing shareholders. In such a case, management will reject the project even if its net present value is positive. This underinvestment can be avoided if the firm can finance the new project using security that is not so badly undervalued by the market. To avoid such distortion, managers follow what Myers called

the pecking order. Accordingly, managers finance projects first with retained earnings, which involves no asymmetric information, followed by low-risk debt for which the problem is negligible and then with risky debt. The firm uses equity only as a last resort when investment so far exceeds earnings that financing with debt would produce excessive leverage. Based on this fact, the profitable firms are supposed to use less amount of debt capital and the relationship between debt ratio and profitability should be negative. However, the relationship observed in this study between debt ratio and profitability is positive indicating the pecking order theory does not explain the financing behavior of Nepalese manufacturing firms.

According to pecking order theory, firms use external funds if the required funds to invest in new project are more than the investable funds generated internally by the firms which Sham-Sunder and Myers (1999) called fund deficiency. The fund deficiency depends on four other variables namely, dividend paid out, investment that the firm is going to accept, the change in working capital that takes place, and cash flows generated internally. Out of the cash flows generated internally, the remaining funds after paying dividends and using for working capital can be used for the investment in new project. If that remaining funds happen to be less than fund required for investment, the difference is fund deficiency and the same is to be finance through external financing by using debt and then by new equity.

The pecking order theory presumes that the financing deficit is fully covered by debt, which implies that in equation 3.13 the intercept term should be zero and the value of the slope should be equal to one. Based on this, the result of the regression of fund deficiency on change in total debt has been presented in Table 4.29.

Table 4.29

Regression results of ΔDTA_{it} (measured as change in total debt to total asset) on fund deficiency

The results are based on the following Regression equation

$$\Delta DTA_{it} = \alpha + \beta\, DEFTA_{it} + \varepsilon_{it}$$

This table is concerned with the regression results of regression equations of ΔDTA_{it} on $DEFTA_{it}$ where ΔDTA_{it} stands for change in debt capital and $DEFTA_{it}$ stands for deficiency of funds. In addition, p-value of regression coefficient is also provided to give the information regarding the significance of the coefficient of the explanatory variable selected in this study. The data are from NEPSE, SEBON, and Office of the Auditor General of Nepal and the sample contains 25 Nepalese manufacturing firms, 15 firms from private sector and 10 firms from public sector for the period of 12 years from the year 2000 to 2011.

Explanatory variables	Beta coefficient	P-values	VIF
Constant	0.435	0.384	
Deficiency	0.652	0.000	1.000

Adjusted R-square = 54.4 percent
F – Statistics = 14.636 significant at 1 percent level of significance

Table 4.29 is the results of the equation 3.13 which has been design to examine whether the financing behavior of the Nepalese manufacturing firms is explained by the pecking order theory of capital structure developed by Myers (1984) and Myers and Mujluf (1984). According to the theory, if the pecking order theory holds, the financing deficit is fully covered by debt, which implies $\alpha = 0$ for the intercept term and the value of $\beta = 1$ for the coefficient of the independent variable. In other words, following Shyam-Sunder and Myers (1999), Nuri and Archer (2001), Adedeji (2002), and Frank and Goyal (2003), this study has tested the hypothesis that the slope coefficient of independent variable, fund deficit ($DEFTA_{it}$) is equal to one and the intercept (α) is equal to zero. But the results observed in this study, which is presented in Table 4.29, are different from the expectation of the theory.

Though the results observed are different from expected, the coefficient of independent variable, fund deficiency, is found to be 0.652 only but statistically significant at 1 percent level of significance. The results indicate that one unit of change in deficiency results in 0.625 units of change in debt which is inconsistent with the theory in the strong form of pecking order. The value of R-square 0.544 indicates the change in debt is explained to the extent of 54.4 percent by the independent variable fund deficiency. This indicates the change in debt is not fully explained by the deficiency as assumed by the theory. The value of F-test indicates the fit of the model. Based on the statistics of the data observed from the output of equation 3.13, it can be concluded that the financial behavior of the Nepalese manufacturing firms has been explained by the pecking order theory in its weak form though it is not in strong form.

Another way of testing the pecking order theory has been designed in equation 3.18. Where the previous year's fund deficiency along with various firm specific variables of previous year have been taken as explanatory variales to explain the change in debt ratio of current year. The result of equation 3.14 has been presented in Table 4.30. The result shows that the positive relationship between the fund deficiency of prevous year and debt ratio of current debt ratio indicates higher the funds deficiency higher would be the current debt ratio. However, the result is not statistically significant.

The value of R-square is found to be 0.296 which indicates the change in debt capital has been explained by the eleven different independent variables only to the extent of 29.6 percent. Similarly, the value of F-test shows the fit of model to explain the model used. The findings of this study are consistent with the studies carried out by Frank and Goyal (2003) for the USA and Adedeji (2002) for the UK. Although the results of this study do

Table 4.30

Regression results of DR_{it} (measured as total debt scaled by total asset) and various explanatory variables

The results are based on the following Regression Model

$$DR_{it} = \alpha + \beta_1 (\ln S_{it-1}) + \beta_2 (\Delta TA_{it-1}) + \beta_3 (DEPTA_{it-1}) + \beta_4 (EBITDTA_{it-1}) + \beta_5 (CR_{it-1}) + \beta_6 (INVFATA_{it-1}) + \beta_7 (CTA_{it-1}) + \beta_8 (GDP_{it-1} + \beta_9 (INF_{it-1}) + \beta_{10} (DEFTA_{it-1}) + \varepsilon_{it}$$

This table is concerned with the regression results of regression equations of DR_{it} on various explanatory variables considered in this study. In addition, t-values of each of regression coefficients are also provided to give the information regarding the significance of the coefficients of the explanatory variables selected in this study. The data are from NEPSE and SEBON and the sample contains 25 Nepalese manufacturing firms for the period of 12 years from the year 2000 to 2011. DR_{it} is the ratio of total debt to total assets. $\ln S_{it-1}$ is the natural logarithm of sales representing the size if the firm of previous year. ΔTA_{it-1} is the percentage change in total assets representing the growth of the firm. $DEPTA_{it-1}$ is the ratio of annual depreciation to total assets representing the non-debt-tax-shield. $EBITDTA_{it-1}$ is the ratio of earnings before interest, tax and depreciation to total assets representing the profitability of the firm. CR_{it-1} is the ratio of current assets to current liabilities representing the liquidity of the firm. $INVFATA_{it-1}$ is the ratio of sum of inventory and fixed assets to total assets representing the tangibility of assets, *CTAit-1* is the ratio of cash to total assets representing financial flexibility of firms, GDP_{it} is the change in GDP representing expected GDP and $INF_{it-1}$is the change in inflation representing the expected inflation and $DEFTA_{it-1}$ is the funds deficits of previous year.

Model	Intercept	Regression Coefficients of										R^2	F-test
		$\ln S_{it-1}$	CR_{it-1}	$EBITDTA_{it-1}$	$INVFATA_{it-1}$	ΔTA_{it-1}	$DEFTA_{it-1}$	$DEPTA_{it-1}$	CTA_{it-1}	GDP_{it-1}	INF_{it-1}		
1	10.543 (0.000)	- 1.035 (0.000)										0.250	84.544 (0.000)
2	2.690 (0.000)		- 0.928 (0.000)									0.135	39.591 (0.023)
3	9.803 (0.000)	- 0.883 (0.000)	- 0.588 (0.000)									0.299	53.833 (0.000)
4	9.692 (0.000)	- 0.926 (0.000)	- 0.594 (0.000)	1.652 (0.000)								0.312	37.977 (0.000)
5	10.461 (0.000)	- 0.937 (0.000)	- 0.647 (0.000)	1.874 (0.015)	- 1.011 (0.067)							0.321	29.599 (0.000)
6	10.516 (0.000)	- 0.947 (0.000)	- 0.647 (0.000)	1.797 (0.012)	- 1.027 (0.063)	0.068 (0.438)						0.323	23.762 (0.000)
7	10.420 (0.000)	- 0.946 (0.000)	- 0.608 (0.000)	1.569 (0.041)	- 0.782 (0.175)	0.069 (0.409)	0.030 (0.291)					0.363	20.219 (0.000)
8	9.627 (0.000)	- 0.883 (0.000)	- 0.555 (0.000)	1.881 (0.013)	- 0.048 (0.938)	0.024 (0.772)	0.026 (0.358)	- 13.417 (0.002)				0.392	19.488 (0.000)
9	9.589 (0.000)	- 0.866 (0.000)	- 0.554 (0.000)	2.527 (0.030)	- 0.066 (0.915)	0.015 (0.858)	0.026 (0.356)	- 15.731 (0.003)	- 9.261 (0.462)			0.392	16.567 (0.000)
10	9.630 (0.000)	- 0.867 (0.000)	- 0.556 (0.000)	2.510 (0.032)	- 0.063 (0.920)	0.018 (0.832)	0.027 (0.348)	- 15.691 (0.003)	- 8.861 (0.486)	- 0.010 (0.879)	0.011 (0.702)	0.394	13.562 (0.000)

Note: The values in parenthesis are p – values showing the level of significance of the values of beta coefficients.

not support the pecking order theory in strong form, the results support that the funds deficiency is also one of the determinants of capital structure in Nepalese manufacturing firms and pecking order theory supports the financing behavior of the Nepalese manufacturing firms in its weak form.

4.7 Concluding remarks

The main focus of this chapter is to examine the various aspects of capital structure management in Nepalese manufacturing enterprises. The variables considered in this study are: short term debt ratio, long term debt ratio, and total debt ratio as dependent variables. The size of the firm, growth, profitability, non-debt tax shield, liquidity, volatility, financial flexibility, tangibility, GDP, and inflation have been considered as independent variables of capital structure of Nepalese manufacturing firms. This study finds four firm specific variables namely, size of the firm, liquidity, assets tangibility, and financial flexibility as significant variables determining the short term debt ratio. Similarly, four firm specific variables, assets tangibility, size, inflation, and non-debt tax shield have been observed as significant variable to change in the long term debt ratio. On examining the variables determining the total debt, five variables namely, size of the firm, liquidity, inflation, assets tangibility, and profitability have been found as significant determining the total debt ratio of Nepalese manufacturing firms.

In order to examine the prevalence of trade-off theory, the relationship between lagged debt ratio and change in current debt ratio has been estimated and the same is observed as negative. This negative relationship indicates that an increase in one year has a negative

effect on the change next year and supports for trade-off theory. In addition, examining the speed of adjustment, this study finds the speed of adjustment as 23.5 percent, 27.5 percent, and 14.8 percent for short term, long term, and total debt ratio respectively. Another issue that has been dealt in this study is whether the pecking order theory explains the financial behavior of Nepalese manufacturing firms. As suggested by the theory, the relationship observed between funds deficiency and debt capital is positive which supports the theory. With this it can be claimed that the pecking order theory of capital structure explains the financial structure of Nepalese firms. Thus, it can be concluded that with respect to determinants of capital structure of Nepalese manufacturing firms, size of the firms, liquidity, assets tangibility, financial flexibility, inflation, non-debt tax shield, and profitability are the significant determinants of capital structure. In addition, both of trade-off and pecking order theory of capital structure explain the financing structure of Nepalese manufacturing firms.

CHAPTER FIVE

PRACTICE OF CAPITAL STRUCTURE IN NEPALESE ENTERPRISES OPINION SURVEY ON NEPALESE PRACTITIONERS

5.1 Introduction

The theory of capital structure is one of the debated fields within the corporate finance and financial literature. This chapter considers the evidence on capital structure theories that is based on recent surveys of corporate managers involving somehow in decision making process relating to capital structure of the firms. This survey examines the extent managers use the assumptions and/or inputs of capital structure models developed by academics in making financial decisions. Though there are number of theories explaining the capital structure of the firms, no one theory fully explains the financing behavior of the firms both in developed and developing countries.

Until recently, the capital structure debate was mainly a theoretical one, with the relevance or irrelevance of financing decisions turning on the modelers' willingness to accept the existence of significant market imperfections. Modigliani and Miller (1958) showed that capital structure decision do not affect the value of the firm when capital markets are perfect, corporate and personal taxes do not exist, and the firm's financing and investment decisions are independent. But when one or more of these assumptions are relaxed, many academics demonstrate how firm value may vary with changes in capital structure of the firms. Most frequently, the optimal capital structure maximizes firm value by simultaneously minimizing external claims to the cash flow stream flowing from the firm's assets. Such claims include taxes paid to the government, returns paid to the debt holders by the firm, bankruptcy costs paid to accountants, lawyers, and the

firm's vendors, and/or agency costs incurred to align managerial interests with the interest of capital suppliers.

The common approach adopted in most of the studies on capital structure management of the firms seeks to explain the observed capital structure in terms of factors perceived to be important, based on the theories, usually using large-scale cross-sectional time series regression methods. These methods cannot explain the diversity in behavior of the decision makers that can arise while making financial decisions. Because of this fact, the researchers are arguing that it has become necessary to extend the methods by the use of different empirical approaches that offer greater insight into the behavioral aspects of the decision making process such as the survey methods. Using survey method, managers of the business firms can be directly questioned on their attitudes and behavior regarding corporate financing, including the actual factors that they consider important in setting financing policies for their firms. This allows both the process and diversity of practice to be investigated, offering a richer understanding on the capital structure issues.

Considering the facts discussed above, this study tries to get the evidence on capital structure management practices in Nepalese firms employing the survey method through questionnaire survey among the managers, who are somehow responsible in decision making process relating to raising the funds and developing the financing policies of their firms. Empirical studies based on the large quantitative data often have weaknesses related to variables specification and its measurements. These studies have inability to ask the qualitative questions relating to the subject concerned. Field studies are less common but offer excellent detail of corporate behavior. There are several theories which attempt to explain the financing behavior of the firms. However, none of them are fully

capable in explaining the capital structure or financing behavior of the firms. The contradictive empirical evidences which have been found by the previous studies raise the questions on the validity of the finding and theories as well and which have led researchers to focus on factors determining the capital structure in practice and also try to understand the factors playing a significant roles in financial decision making process the firms follow.

As compared to developed and other developing countries, a few studies have been carried out in the field of finance especially relating to capital structure management in Nepalese firms based on the numerical data. But the results found were not consistent. Though there are few researches conducted based on the questionnaire survey relating to capital structure management in Nepalese firms, the findings are not conclusive. Those studies were found to be lack of depth in terms of investigation and no inferences could be drawn from those studies. So, this section of study is carried out to examine the factors determining the capital structure management in Nepalese firms and to test which of the theories, trade-off theory or pecking order theory, explain the financing behavior of Nepalese firms through the questionnaire survey.

Therefore the significance of the study is obvious. The objective of this chapter is to examine the opinion of the practitioners on factors determining the capital structure in Nepalese firms, to test which of the theories explain the capital structure management practices in Nepalese firms, and to investigate the incentives of the practitioners behind capital structure management in practice.

5.2 Review of literatures

Perhaps the best-known field study in the area of finance is John Lintner's (1956) path breaking analysis of dividend policy. The results of that study are still quoted even today and have deeply affected the way that the research is conducted. Since then there is a considerable amount of researches conducted based on the survey in developed countries like US and UK. The aim of this section is to review the previous studies based on the field-surveys associated with financing behavior of the firms. The review of literature helps understand the development in the subject matter so far been developed and in generating the framework for the further study by identifying the important issues in the areas and theories relating to the subject matter. In addition, the review of literature helps researchers design the appropriate methodology to carry out the research. Looking at the findings of the studies carried out in US and UK, the results are found to be inconsistent. Some studies support trade-off theory and other support pecking order theory of capital structure. The lack of consistencies from the previous studies, of course, motivated to carry out this study.

Since the influential work of Modigliani and Miller (1958) on the irrelevance of capital structure in investment decision, a rich theoretical literature has emerged that models firms' capital structure choice under different assumptions. For example, the static trade-off rely on traditional factors such as tax advantage and potential bankruptcy cost of debt (Scott, 1976; Modigliani and Miller 1963) while others use the asymmetric information, in which debt or equity is used as a signaling mechanism or strategy tool (Donaldson 1961; Myers and Majluf, 1984; Myers 1984; Titman and Wessels 1988; Chung 1993; Wiwattanakatang 1999; Tong and Green 2004; and Chen 2004).

Many of these theories have also been empirically tested. Yet there is little consensus on how firms choose their capital structure and much remains to understand the link between theory and practice of capital structure. Surveys try to find the hidden motivation behind financing choices and have the advantage that one can question difficult-to-measure and complex factors such as the degree of asymmetric information and financial flexibility. In this section, some major studies conducted based on survey have been reviewed and presented. Table 5.1 presents the summary of the key findings of those studies which have been reviewed in this study.

Pradhan (1994) finds that bank loan and retained earnings are the two most widely used financing source in Nepalese enterprises. On an average, Nepalese enterprises financed 38 percent of total assets by debt. The most preferred source of financing at current level of debt is retained earnings. The author finds that 87 percent of the respondents believe that there is a limit on what they can borrow. The majority of the respondents feel that they are not at or near the limit perhaps due to less debt used by the enterprises. The average debt employed in their capital structure is only about 38 percent of total assets. Of the total enterprises surveyed, 36 percent have debt ratio ranging from 20 to 40 percent. More than half a dozen of the enterprises have employed any debt as they prefer not to use the debt in their capital structure. On the whole, the author feels that there is less incentive for the enterprises to use debt capital in their capital structure.

Kamath (1997) surveys a sample of New York Stock Exchange (NYSE) firms to learn more about the managerial opinions and practices with debt financing. The results confirm the pecking order theory because the respondents report relying on a hierarchy of financing options. The firms following financial hierarchies find past profits, average

debt ratio in the industry, and past growth to be important determinants of their capital structure. Financial managers report greater flexibility with capital structure than with dividend decisions. Firms attempting to adopt a target debt ratio find that industry

Table 5.1

Summary of key findings of the major studies

Study	Key findings
Pradhan(1994)	The author finds that bank loan and retained earnings are the two most widely used financing source in Nepalese enterprises. On an average, Nepalese enterprises financed 38 percent of total assets by debt. The most preferred source of financing at current level of debt is retained earnings. The author finds that 87 percent of the respondents believe that there is a limit on what they can borrow.
Kamath (1997)	The results confirm the pecking order theory because the respondents report relying on a hierarchy of financing options. The firms following financial hierarchies find past profits, average debt ratio in the industry, and past growth to be important determinants of their capital structure. Financial managers report greater flexibility with capital structure than with dividend decisions.
Graham and Harvey (2001)	They examine about the views and actions of managers. For capital structure, 44 percent of the responding firms report having a somewhat tight and strict target debt ratio. According to the respondents, among the most important factors affecting debt policy, 59.4 percent report financial flexibility, 57.1 percent report credit rating, 48.1 percent report cash flow volatility, 46.8 percent report insufficient cash flow, and 46.4 percent report tax deduction.
Bancel and Mittoo (2004)	The authors find that 87.9 percent of the responding managers in their survey consider financial flexibility important. Managers achieve this financial flexibility by timing the issue to the stock exchange market value for the firm. The managers find that having access to financing at any time is important, regardless of the economic activity and prospects for the future.
Beattie et al. (2006)	observe evidence for both the pecking order hypothesis and trade-off theory in their study consisting of sample of 192 firms. They suggest that practitioners hold inconsistent views about the determinants of capital structure. They also point out that, as far as respondents are concerned, the pecking order hypothesis and the trade-off theory are not necessarily exclusive even the academics tend to view them in that way.
Rajopadhyay (2007)	The author finds, with reference to the question relating to choice of the sources of capital requirements, that the retained earnings has been found to be the first choice of the respondents. The respondents have also been asked to express their opinion on the most important determinant of the capital structure of the firms.
Archbold and Laziridis (2010)	find that both the trade-off theory and the pecking order hypothesis are used by firms to guide their decisions over capital structure issues. Based on their findings, the results contradict the standard or orthodox academic view that they are mutually exclusive perspective or model.

average is a useful benchmark for their own debt ratio. When presented with a hypothetical good investment opportunity, the responding managers indicate that they would invest and deviate from their target capital structure but that they are reluctant to cut dividends. Therefore, capital structure appears to be a more flexible issue compared to investment and dividend decisions.

Graham and Harvey (2001) examine about the views and actions of managers. For capital structure, 44 percent of the responding firms report having a somewhat tight and strict target debt ratio. According to the respondents, among the most important factors affecting debt policy, 59.4 percent report financial flexibility, 57.1 percent report credit rating, 48.1 percent report cash flow volatility, 46.8 percent report insufficient cash flow, and 46.4 percent report tax deduction. Factors not considered important are the firm's future prospects, personal tax cost, takeover deterrent, threat of competitors, incentive for management, and accumulation of past profits.

Bancel and Mittoo (2004) find that 87.9 percent of the responding managers in their survey consider financial flexibility as important factor determining the capital structure of the firms. Managers achieve this financial flexibility by timing the issue to the stock exchange market value for the firm. The managers find that having access to financing at any time is important, regardless of the economic activity and prospects for the future. This evidence is consistent with the Leland and Pyle (1977) hypothesis that management times the firm's security issues. Respondents rank credit ranking as important factor for capital structure choice. More than 72 percent of the managers consider credit ranking as important factor. Among the respondents, 59.6 percent report interest tax saving and 50.9 percent report volatility of earnings as important factors behind debt policy. They observe

20 percent of the chief executive officers and 40 percent of the financial officers are concerned with excess debt, transaction costs, expected bankruptcy costs, and industry debt level as of moderate importance in determining the capital structure.

Beattie et al. (2006) observe evidence for both the pecking order hypothesis and trade-off theory in their study consisting of sample of 192 firms. They suggest that practitioners hold inconsistent views about the determinants of capital structure. They also point out that, as far as respondents are concerned, the pecking order hypothesis and the trade-off theory are not necessarily exclusive even the academics tend to view them in that way.

In the study of Rajopadhyay (2007) respondents have been asked for their opinions on various issues relating to capital structure. With reference to the question relating to choice of the sources of capital requirements, the retained earnings has been found to be the first choice of the respondents. The respondents have also been asked to express their opinion on the most important determinant of the capital structure of the firms. In this regard, among other factors, volatility of the profit has been found to be the most significant factors affecting the capital structure. Similarly, relating to the question whether the capital structure of the affects the value of the firm, most of the respondents is of opinion that the capital structure will affect the value of the firm.

Archbold and Laziridis (2010) find that both the trade-off theory and the pecking order hypothesis are used by firms to guide their decisions over capital structure issues. Based on their findings, the results contradict the standard or orthodox academic view that they are mutually exclusive perspective or model. They conclude that the more sophisticated the theoretical perspectives on capital structure, less it is likely to have on reality or

practice. Agency perspectives, signaling and strategic motivations are all roundly rejected by the respondents in their study. In their study, the evidence in respect of market timing issues is rather mixed.

Based on the review of the above mentioned studies, it can be concluded that the major sources to finance the required funds in the Nepalese firms are retained earnings and the bank finance. The results of the above studies confirm the pecking order theory because the respondents report relying on a hierarchy of financing options as indicated by the pecking order theory. The responding managers have been found to consider financial flexibility as important factor determining the capital structure of the firms. Managers achieve this financial flexibility by timing the issue to the stock exchange market value for the firm. The managers find that having access to financing at any time is important, regardless of the economic activity and prospects for the future.

5.3 Research methodology

The sample in this thesis consists of 186 respondents having decision making capacity in their firms. The respondents have been chosen among the managing directors, managers, finance officers, chief accountants and chief executive officers from different industries to look at the market in general instead of concentrating in one particular industry.

The required data for this study has been collected through a questionnaire survey. It is important to keep in mind that it is difficult to design a good questionnaire that provides the information required to investigate the issue. The design of questions, layout of the

questionnaire, the pilot testing and administration are all important issues that determine a good response rate, reliability and validity (Saunders et al., 2003). This study adapts Graham and Harvey's (2001) questionnaire that is also employed by other previous studies and researchers including Bancel and Mittoo 2004; Brounen et al 2006; Beattie et al 2006; and Chazi et al 2009. Adapting such well-established and widely applied questionnaire from past studies, it is believed it does not require a pilot test to be conducted including to ensure the readability of the questionnaire, the right selection and understandability of the wordings and terminologies, scaling, the arrangement of questions, the relevancy of the questions, length of time taken to complete the questionnaire, etc.

Validity and Reliability

The validity of conclusion drawn from the study is subject to the method of collecting data and whether the questionnaire measures what the researcher intent to measure. The type of questionnaire used in this study is similar to those of other researchers and the questions in the questionnaire also similar to those questions of other researchers like Graham and Harvey (2001),Bancel and Mittoo 2004, Brounen et al 2006, Beattie et al 2006, and Chazi et al 2009. These other studies have shown valid results and within the area of capital structure. In this study the questions are more or less similar to those of previous valid researches and thus it is believed the questionnaire to be valid.

Since all the respondents have been chosen among the managers, finance officers, chief accountants, qualified chartered accountants and chief executive officers, it is believed that the questionnaire gives relevant answers. In addition to this, Cronbach's Alpha has

been tested for each question separately for which the respondents are asked to rank the given fact. And this is one of the most influential and widely used techniques to measure the reliability of the collected data. Based on this test if the value of Cronbach's Alpha is in between of 0.6 to 0.9, it proves the reliability of the data statistically.

5.4 Presentation and Analysis of primary data

This section is concerned with the analysis of responses collected through questionnaire survey and presentation of the findings, based on the opinion expressed by the respondents, on capital structure management practices in Nepalese firms. The study is based on opinion survey which mainly deals with qualitative aspects of capital structure management and incentive behind decision making on capital structure in Nepalese firms. In order to accomplish the study, 300 structured questionnaires have been sent to the managers working in various organizations having decision making capacity to express their opinion on capital structure.

The various questions concerning with the capital structure issues cover the measurement of debt ratios, preferences to various sources of funds, determinants of capital structure, debt policies of the firms, debt capital, equity capital, and types of debt capital. Listing the major facts relating to the capital structure issues, the respondents are asked to rank them in the questionnaire. While ranking the given facts, the respondents are asked to give “zero” if the fact is irrelevant and “five” if the fact is very important to them. Then, based on the mean values of ranks, the conclusions have been drawn.

5.4.1 Respondents' profile

In any study using primary data needs discussion on profile of respondents first. This section, therefore, describes the profile of the respondents in terms of their designations, academic qualification of respondents, and line of business of their involvement.

The respondents involved in this survey have been working in their organizations at various capacities. Table 5.2 presents the information relating to the capacity of the respondents from whom the information has been collected in this study. Out of 186 respondents, 25 percent are in the capacity of managing director, 12 percent are general managers, 23 percent are chief finance officers, 24 percent are managers and the rest 16 percent of respondents are certified chartered accountants practicing in Nepalese firms.

Table 5.2

Respondents' position in their firms

Position	Number of respondents	Percentage
Director/Managing Director	47	25
General Managers	21	12
Chief Finance Officer	43	23
Managers	45	24
Certified Chartered Accountants	30	16
Total	**186**	**100**

Table 5.3 presents the information relating to the industries and profession from where the respondents have been selected. The respondents are almost from all the sectors of the economy. The majority of the respondents are from manufacturing industry.

Table 5.3

Line of businesses of the respondents

Line of business	Number of respondents	Percentage
Manufacturing	64	34
Finance	57	31
Service	41	22
Trading	24	13
Total	**186**	**100**

The table shows that 34 percent respondents are from manufacturing industry, 31 percent are from finance sectors, 22 percent from service sector, and the rest 13 percent from trading industry.

The numbers of years the respondents have been in the firm varied from newly employed to over 20 years, with the mean of approximately 7 years. Further, all the respondents seem to be qualified academically. Table 5.4 presents the academic qualification of the respondents.

Table 5.4

Academic and professional qualification of respondents

Degrees	Number of respondents	Percentage
Bachelor Degree	33	18
Masters Degree	77	41
MBA	46	25
Professional degree (Chartered Accountants)	30	16
Total	**186**	**100**

According to the table, out of the respondents, 18 percent of the respondents hold bachelor degrees, 41 percent of the respondents have masters' degree, 25 percent of them are MBA graduates and rest 16 percent respondents have professional degrees. All the respondents having professional degrees are qualified chartered accountants. Since all the respondents are qualified academically, it is believed that all they have sufficient knowledge for answering the questions of this study.

In response to the question relating to the measurement of debt ratios in their firms, the majority of the respondents found to include both long and short term debt. They do not consider the accounts payable and other operating payables in measuring the debt ratios of their firms. The one reason of not including these liabilities in measuring the debt ratio may be that of non interest bearing liabilities. Normally, the firms do not have to pay the interest on accounts payable and other operating current liabilities.

5.4.2 Factors affecting capital Structure

The respondents have been asked to answer the question relating to financing hierarchy as proposed by pecking order theory developed by Myers (1984) and Myers and Mujluf (1984). According to the theory, in order to avoid the underinvestment and adverse selection problem, firms prefer to use internal funds because it avoids informational problems entirely as it is of low risk, less sensitive to mispricing and valuation errors. When internal funds are insufficient to meet the financing needs, firms turn first to risk-free debt, then risky debt, and finally equity as a last resort.

Thus, the pecking order hypothesis implies the existence of a financing hierarchy: internal funds first, debt second, and equity last. In this study, the respondents are given to rank for six sources of long term financing, namely, Retained Earnings, External common Equity, Straight Debt, Convertible Debt, Preferred Stock, and Convertible Preferred Stock. The ranking given by respondents has been presented in Table 5.5. As predicted by the theory, the ranking given by the respondents for Retained Earnings, Straight Debt and Convertible Debt found to be consistent with the theory. However, the remaining three sources of long term funds namely, External Common Equity, Straight Preferred Stock, and Convertible Preferred Stock are found to be inconsistent with the prediction of theory.

As per theory, the external common equity should come at last in preference. But, in this study, the respondents have ranked the external equity at their fourth rank. With this, it can be concluded that the pecking order theory explains the financing behavior of Nepalese firms and the opinions of the practitioners as well in its weak form.

Table 5.5

Responses to the question relating to ranking of the sources of long term funds in order of preference for financing new investments. (Rank first being the first choice and the rank sixth the last choice)

Sources of long term funds	Ranks in percentage						Total	Mean Rank
	1st	2nd	3rd	4th	5th	6th		
Retained Earnings	186	0	0	0	0	0	186	1.00
Straight Debt	0	186	0	0	0	0	186	2.00
Convertible Debt	0	0	132	54	0	0	186	3.29
External Common Equity	0	0	34	52	26	54	186	4.43
Straight Preferred Stock	0	0	0	80	106	0	186	4.57
Convertible Preferred Stock	0	0	0	0	54	132	186	5.71
Total	186	186	186	186	186	186		

In addition to ten determinants of capital structure that have been considered in this study, there are many other qualitative factors affecting the capital structure decisions. In order to examine the significance of those qualitative factors, respondents have been asked the question relating to debt capital. In this regards, 12 different qualitative factors, as suggested by various theories and previous studies have been identified and respondents are asked to express their opinion in terms of numerical scale. The likert scale has been designed as "zero" for irrelevant facts to "five" for very important facts and the respondents are asked to measure the given facts accordingly. The result of the responses has been presented in Table 5.6.

In Table 5.6, the weighted means of the ranks given by the respondents for each factor have been presented. Based on the highest weighted mean, the first three important factors determining the amount of debt for the firms are the volatility of earnings and cash flows, the tax advantages of interest deductibility, and ability to manage earnings per share having the mean response 4.6613, 4.3972, and 4.0699 respectively on a scale from 0 to 5 (0 stands for irrelevant and 5 stands for very important). In contrast, it has been found that the willingness of employees to work with highly indebted firms, high debt signals to the market as high quality firms, and financial flexibility are the least preferred factors in determining the amount of debt capital having the means 0.4839, 1.7204, and 1.9892 respectively. The remaining 6 factors are in between of these two extremes. Based on the result, it can be concluded that volatility of the earning, tax advantages of interest, and ability to manage earnings per share are the important factors in determining the debt capital in the capital structure of Nepalese firms.

Table 5.6

Survey responses on factors affecting the appropriate amount of debt

S.N	Factors	Rank assigned						Total responses	Weighted value	Mean weight	Overall rank
		0	1	2	3	4	5				
1	The volatility of our earnings and cash flows	0	0	0	0	63	123	186	867	4.6613	1
2	The tax advantage of interest deductibility	0	0	0	32	48	106	186	818	4.3978	2
3	Ability to manage Earning per share	0	0	7	27	98	54	186	757	4.0699	3
4	The debt levels of other firms in our industry	0	0	12	39	70	65	186	746	4.0108	4
5	To ensure that upper management works hard and efficiently, we use sufficient debt to make sure that large portion of our cash flows are committed to interest payments	0	0	12	74	55	45	186	691	3.7151	5
6	Debt is used to signal to our competitors that we will compete aggressively	0	5	14	79	49	39	186	641	3.4462	6
8	We limit debt so our customers/suppliers are not worried about our firm going out of business	0	10	27	84	37	28	186	604	3.2473	7
7	Transaction costs and fees associated with debt issues	0	2	52	102	23	7	186	539	2.8978	
9	The potential cost of bankruptcy or financial distress	0	17	14	132	23	0	186	533	2.8656	9
10	Financial flexibility (we restrict debt so we have enough internal funds available to pursue new investment when they come along	0	56	76	54	0	0	186	370	1.9892	10
11	High debt signals to the market that we are a high quality firm	17	18	151	0	0	0	186	320	1.7204	11
12	The willingness of our employees to work for a highly indebted firm	113	56	17	0	0	0	186	90	0.4839	12

In chapter 4, various capital structure determinants in Nepalese firms have been tested based on the data provided by the firms in the financial statements. Here, in Table 5.7, the opinions of the managers on those 10 variables as determinants of the capital structure have been examined and presented. The respondents are asked to scale each determinant on the scale of 0 to 5 (0 stands for irrelevant and 5 stands for very important). Then the weighted means have been calculated and based on the mean values, the first three important determinants are profitability of the firms, Volatility of the income, and growth opportunities of the firms having the mean 4.88, 4.64, and 4.10 respectively. Similarly, out of the 10 variables, the variables non-debt tax shield, financial flexibility, and expected GDP seem to be least important variables.

The results from the opinion survey of the managers are found to be different from empirical results in chapter 4 of this study in respect of growth opportunities and income volatility. Based on the survey result these two variables are on the top of the priority whereas the coefficients of these variables found from empirical study are very low and are not statistically significant.

The textbook view is that earnings are not diluted if a firm earns the required return on the new equity. Conversely, if funds are obtained by issuing debt, the number of shares remains constant and so earning per share can increase. However, the equity is levered and therefore more risky, so Modigliani and Miller's 'conservation of value' tells us that the stock price will not increase due to higher earnings per share. Nonetheless, Brealey and Myers (1996) indicate that there is a common belief among the executives that share issuance dilutes earnings per share (on p. 396, Brealey and Myers call this view a "fallacy").

Table 5.7

Survey responses on factors affecting capital structure

S.N	Factors	Rank assigned						Total responses	Weighted value	Mean weight	Overall rank
		0	1	2	3	4	5				
1	Profitability of the firms	0	0	0	0	24	162	186	906	4.8800	1
2	Volatility of the income	0	0	0	16	34	136	186	864	4.6452	2
3	Growth opportunities of the firm	0	0	0	58	52	76	186	762	4.0968	3
4	Assets' tangibility of the firm	0	0	19	71	64	32	186	667	3.5860	4
5	Liquidity of the firm	0	0	85	85	16	0	186	489	2.6290	5
6	Size of the firms	0	0	107	56	23	0	186	474	2.5484	6
7	Expected inflation	0	83	48	55	0	0	186	344	1.8495	7
8	Expected gross domestic product (GDP)	0	109	46	31	0	0	186	294	1.5806	8
9	Non debt tax shields	0	100	66	20	0	0	186	292	1.5699	9
10	Financial flexibility	0	123	44	19	0	0	186	268	1.4409	10

In order to examine this issue, the respondents are asked the question to rank the factors affecting decisions on issuing common stock specified in the questionnaire. The factors listed in the questionnaire have been selected from the previous studies and theories relating to the capital structure. Based on the responses provided by the respondents, the results have been presented in Table 5.8. Based on the weighted mean of the ranks given by the respondents, the first three important factors affecting the decision regarding the issuance of equity capital are dilution in the earning per share, the sufficiency of current profits to fund the available investment opportunities, and the maintaining target debt ratio.

The highest weighted means of the ranks given by the respondents to the three factors are found to be 4.91, 4.74, and 4.51. The least important factor among the listed factors is "common stock is cheapest source of funds" followed by "providing shares to employee bonus/stock option plans. The weighted means are estimated to be 0.77 and 2.92 respectively.

The finding reveals that the respondents seriously considered the earnings and earnings dilution is the most important factors affecting their decisions having weighted mean of 4.91 in Table 5.8. The popularity of this response either indicates that managers focus more than they should on earnings dilution, if the standard textbook view is correct, or that the standard textbook treatment misses an important aspect of earnings dilution. The result found in this study is consistent with previous study conducted by Graham and Harvey (1999) among the US executives.

Table 5.8

Survey responses on factors affecting firm's decisions on issuing common stock

S.N	Factors	Rank assigned						Total responses	Weighted value	Mean weight	Overall rank
		0	1	2	3	4	5				
1	Earnings per share dilution	0	0	0	0	17	169	186	913	4.9086	1
2	Whether our recent profits have been sufficient to fund our activities	0	0	0	0	49	137	186	881	4.7386	2
3	Maintaining target debt ratio	0	0	0	29	34	123	186	838	4.5054	3
4	The amount by which our stock is undervalued or overvalued by the market	0	0	0	27	47	112	186	829	4.4570	4
5	Stock is our "least risky" source of funds	0	0	19	41	55	71	186	736	3.9570	5
6	Diluting the holdings of certain shareholders	0	15	24	67	24	56	186	640	3.4409	6
7	Issuing stock gives investors a better impression of our firm's prospects than issuing debt	0	0	54	77	23	32	186	591	3.1774	7
8	Using a similar amount of equity as is used by other firms in our industry	0	0	54	77	41	14	186	573	3.0806	8
9	Inability to obtain funds using debt, convertibles, or other sources	0	15	55	64	33	19	186	544	2.9247	9
10	Providing shares to employee bonus/stock option plans	70	89	27	0	0	0	186	143	0.7688	10
11	Common stock is our cheapest source of fund	186	0	0	0	0	0	186	0	0	11

A large strand of literature considers the different roles played by sources of funds. One of the most obvious reasons inducing the firms to use debt capital is to take tax benefits. Because debt capital provides the firm with a tax shield in the form of interest deductibility, the firm may benefit by issuing debt. In addition to this fact, there are many other qualitative factors behind using the debt capital by the firms. In order to examine the opinions of the managers on debt policy of the firms, the respondents have been asked to rank the seven different debt related facts. The results of the responses have been presented in Table 5.9.

The result shows that the most important three factors, among the seven different factors given to them, having influencing power in determining the debt policy of the firms among the managers are sufficiency of internal funds, market interest rates of debt capital and under valuation of stock at the time of requirement of funds. Since the first preference of the managers is the internal funds and again, from the least preferred factors, the firms issue debt when they have substantial accumulated profits in the Table 5.9, the managers seem to use debt capital if the required funds cannot be arranged through internally. This supports the financial hierarchy as predicted by the pecking order they of capital structure. The weighted means for the most preferred factor and least preferred factors, based on the ranks given by the respondents, are found to be 4.59 and 0.56 respectively.

The respondents have been asked on the factors affecting the choice between short term and long term debt to finance the required funds. In this regards, the respondent are given seven different facts to rank. The results have been presented in Table 5.9. This consists seven different factors affecting the decision relating to choice of short term debt and

Table 5.9

Survey responses on choice between short term and long term debt

S.N	Factors	Rank assigned						Total responses	Weighted value	Mean weight	Overall rank
		0	1	2	3	4	5				
1	We issue long term debt to minimize the risk of having to refinance in "bad times"	0	0	0	3	36	147	186	888	4.7742	1
2	Matching the maturity of our debt with the life of our assets	0	0	8	27	35	116	186	817	4.3925	2
3	We issue short term debt when short term interest rates are low compared to long term rates	0	0	0	46	53	87	186	785	4.2204	3
4	We issue short term debt when we are waiting for long term market interest rates to decline	0	2	21	41	44	78	186	733	3.9409	4
5	We expect our credit rating to improve, so we borrow short term until it does	54	44	57	31	0	0	186	251	1.3495	5
6	Using short term debt reduces the chance that our firm will want to take on risky investments	78	48	36	24	0	0	186	192	1.0323	6
7	We use short term debt so that returns from new projects can be captured more fully by shareholders, rather than committing to pay long term profits as interest to debtholders	102	39	29	16	0	0	186	145	0.7796	7

long term debt capital of the firms. Among the seven different facts listed, the fact "We issue long term debt to minimize the risk of having to refinance in bad times" has received the highest weighted mean of 4.77. Matching the maturity of debt with the life of the assets and using the short term debt when short term interest rates are low compared to long term debt stand at second and third rank having weighted means of 4.39 and 4.22 respectively. Among the seven different facts, the fact "we use short term debt so that returns from new projects can be captured more fully by shareholders, rather than committing to pay long term profits as interest to debtholders" stands at last in the preference of the respondents having weighted mean of 0.78. Based on the results, the managers seem to use debt according to the life of the assets to be financed and the long term debts are used to minimize the risk of having to refinance in bad times.

In order to test the reliability in the responses collected, Cronbach's Alpha has been calculated for all the questions which are being asked the respondents to rank. For all the responses presented in Table 5.5 to Table 5.9 the values of Cronbach's Alpha have been observed in the range of 0.6 to 0.9. Hence, based on these values, the reliability in the responses is expected.

5.5 Concluding remarks

This study mainly aims at examining the determinants of capital structure, capital structure theories explaining the financing behavior of Nepalese firms, and incentives behind capital structure of managers through the questionnaire survey. For the purpose of the study, structured questionnaires have been distributed to the managers of various

capacities. Out of the questionnaires sent out to the respondents, 186 questionnaires collected after being duly filled by them. Based on the opinion survey, interestingly, Nepalese financial managers less likely to follow the academically prescribed factors and theories when determining capital structure. The survey evidence suggests managers follow the pecking order theory of capital structure in its weak form as their first choice of financing source is internal funds. While determining the appropriate amount of debt for their firms, the managers seem to pay their attention on volatility of earnings, tax advantage of interest and ability to manage the earnings per share. These three factors have received highest weighted mean among other listed on the questionnaire. The decisions of the managers are consistent with the view that the decisions are influenced by a desire to avoid getting the firm into financial distress.

Relating to capital structure determinants considered in this study and listed in the questionnaire to examine the preference of the managers, the first three most important factors found are: profitability of the firms, volatility of the earnings, and growth opportunities of the firms. But the results revealed by the empirical study in chapter 4 are totally different from the results shown by opinion survey of the managers. Based on the empirical study from chapter 3, the size of the firms, liquidity, and inflation were found to be most influential determinants of the capital structure. The coefficients of these three variables are statistically significant as well. These contradict results show that there are some other forces which make the managers compelled to manage the capital structure in different ways than they thought.

Another important facts found from this study are that the managers are more concerned with the earnings per share dilution, the sufficiency of profits to manage the required

funds, and the valuation of the shares in the market while issuing the common stock. These three factors have been ranked by the respondents as first three important factors having the mean values 4.75, 4.60, and 4.29 respectively. The respondents are asked the question to know the most important factor determining their debt policies. The internal funds generated by the firms found to be the most important factor in determining the debt policies. With this it can be concluded that the pecking order theory of capital structure supports the financing behavior of Nepalese firm in its weak form.

Regarding the choice of short term and long term debt, the managers are seem to use long term debt to minimize the risk of having to refinance in bad times and matching the maturity period of debt with life of the assets to be financed. Thus based on the opinion survey among the managers, they agree some of the facts of capital structure as predicted by the theories and some are mot. Most of the facts with which the managers are agreed or disagreed found to be consistent with the survey research conducted by Graham and Harvey (2001) in US market.

CHAPTER SIX

SUMMARY AND CONCLUSIONS

Even more than 50 years after Modigliani and Miller's (1958) path-breaking proposition, corporate finance still lacks a unifying capital structure theory and since then corporate capital structure has been a study of interest among the researchers and academicians. They provide a new perspective on optimal capital structure policy. Using arbitrage arguments, they prove that under very restrictive assumptions, capital structure decision does not matter on the valuation of the firm. Modigliani and Miller (1963) review their earlier proposition by incorporating the tax benefits from the use of debt capital and they propose that the firms should use as much debt capital as possible to maximize the value of the firm.

In order to explain how the firms determine their capital structure, several influential theories of capital structure have been proposed. Different theories of capital structure management have been developed since the publication of Modigliani and Miller's theory. However, there are conflicting conclusions of these theories. Many studies have tested these theories in developed countries but the results of those studies are found to be inconsistent. In addition, various firm specific variables and macroeconomic variables have been identified by the theories and previous studies affecting the capital structure of the firms. Based on the firm specific variables proposed by the theories as determinants of capital structure of the firms, different studies revealed different results and there are no consistent results. Hence, this study attempts to investigate these issues in the Nepalese manufacturing enterprises.

This study mainly aims at examining the various aspects of capital structure management in Nepalese manufacturing firms. The objective of this study has been to examine the capital structure management practices in Nepalese firms. The study has been designed to achieve different objectives. The first objective is to examine the capital structure management practices of Nepalese firms over a period of time. Second is to investigate the factors affecting the capital structure in Nepalese firms. In this regards, factors that have been identified by the various theories of capital structure as determinants of capital structure of the firms have been tested to know which of those factors affect significantly the capital structure of Nepalese firms. Third objective is to examine which of the two prominent capital structure theories, trade-off theory or pecking order theory, explains the capital structure practices in Nepalese firms. The forth objective is to know whether Nepalese firms have a target capital structure. If yes, what is the speed of adjustment to achieve the target? And the last objective is to examine the views of Nepalese practitioners on capital structure management based on the questionnaire survey.

For the purpose of this study, a sample of 25 Nepalese manufacturing firms (15 private firms listed in Nepal Stock Exchange and 10 public firms owned by the government of Nepal) have been used and analyzed using pooled and panel data analysis. The required data has been extracted from annual reports published by the concerned firms covering the period of 12 years from 2000 to 2011 as secondary source and through questionnaire survey as primary source. The multiple regression models have been used to examine the firm specific variables affecting the capital structure of Nepalese enterprises. In order to assess which capital structure, trade-off theory or pecking order theory, explains the capital structure management practices of Nepalese enterprises, multiple regression

models have been used. In addition, to assess the views of the finance managers of Nepalese firms, survey among the finance managers have been employed by distributing the structured questionnaire relating to capital structure management issues.

The following are the major findings of the study:

1. Firm size has been found to be negatively related to all short term debt, long term debt, and total debt ratios in both private and public firms. In this study the natural logarithm of sales is used as a proxy for the size of firms. Even from full sample consisting of both private and public firms, the results remain the same. The results are statistically significant. The results indicate that the bigger firms seem to use less amount of debt capital. Most of the previous studies have found the positive relationship between firm size and debt ratios. The studies conducted by Rajan and Zingales (1995), Krishnan and Moyer (1996), Booth et al. (2001), Bhaduri (2002), Frank and Goyal (2003), Nagano (2003), and Boateng (2004) have shown the positive relationship. The reason as argued by Nagano (2003) is being large firms generally seen as diversified entities. The diversification actually can protect them over time from demand downturns in business or product class, thus lowering the probability of income loss or in the extreme case insolvency. Therefore, large firms should be more levered, as they are less prone to bankruptcy. But the results observed in this study are inconsistent with most of the previous studies and the trade-off theory but the results are consistent with the pecking order theory and this theory claims that the larger firms exhibiting increasing preference for equity relative to debt.

2. The percentage change in the total assets has been used as proxy to measure the growth of the firm in this study. The relationships of growth with short term debt and total debt found to be negative and the same with long term debt ratio found to be positive but no one coefficient is statistically significant. Rajan and Zingales (1995) find a negative relationship between growth opportunities and debt ratios. They suggest that this may be due to firms issuing equity when stock prices are high. As mentioned by Hovakimian et al. (2001), large stock price increases are usually associated with improved growth opportunities, leading to a lower debt ratio. The results found in this study with respect to growth are inconsistent with the theories and previous studies. This indicates the Nepalese firms prefer to use long term debt capital to finance for the growth opportunities.

3. Based on the theories and previous research, the profitability of the firms has been considered as one of the most important firm specific variable determining the capital structure of the firms. In this study, based on Titman and Wessels (1988), the profitability has been measured as earnings before interest and tax and depreciation scaled by the total assets. Not consistent with the pecking order theory of capital structure, the study shows the positive relationship with all three debt ratios, short term, long term, and total debt. However, the coefficients are not statistically significant. The results found from Nepalese data as the positive association between profitability and debt ratios is consistent with the previous studies conducted by Baker (1973), Taub (1975), Long and Maltiez (1985), Jensen (1986), Peterson and Raghuram (1994), Roden and Lewellen (1995), Um (2001), and Hovakimian et al. (2001). The results of this study indicate that the

profitable Nepalese firms tend to use more debt. The results do not support the pecking order hypothesis.

4. Non-debt tax shields serve as a substitute for the interest expenses that are deductible in the calculation of the corporate tax. According to the MM theory, the main incentive behind using debt capital is to take advantage of interest tax shields or tax deductible of interest. The presence of other non-debt tax shields like depreciation and amortization reduces this incentive. So, this factor has been considered as one of the determinant of debt ratio in this study and the existence of non-debt tax shields should discourage leverage and a negative relationship between non-debt tax shields and leverage has been expected. In this study, non-debt tax shields have been measured as the total depreciation scaled by total assets. The study shows the negative relationship with short term debt and total debt and positive relationship with long term debt ratio. The result observed in this study with respect to long term debt ratio is statistically significant but it is inconsistent with the theory.

5. Another variable selected as determinant of capital structure in this study is assets tangibility. This variable has been measured as sum of inventories and fixed assets scaled by total assets. A significant negative relationship with short term debt has been observed. But with respect to long term debt, positive relationship has been observed and the results are statistically significant. Looking at the relationships of total debt, a significant negative relationship has been observed. According to the theory of capital structure, a negative relationship is expected between non-debt tax shield and debt ratio. The results of this study with respect

to short term debt and total debt are consistent with the theories and the previous studies which include Myers (1977), Marsh (1982), Williamson and Oliver (1988), Friend and Lang (1988), Wald (1999), Pandey (2002), Wiwattanakantang (1999), and Um (2001).

6. According to pecking order hypothesis, a negative relationship between debt ratio and liquidity is expected. In this study, current ratio has been taken as a proxy to measure the liquidity of the firms and a negative relationship with all the debt ratios short term debt, long term debt, and total debt have been observed. The result found with respect to liquidity is statistically significant. The negative relationship observed in this study is consistent with the previous studies namely, Ozkan (2000), Krenusz (2004), and Bhole and Mahakud (2004). The positive relationship has been noted by few previous studies which include Manos et al. (2001), and Anderson (2002). The positive relationship indicates that firm's capacity to take debt increases as liquidity increases.

7. In this study the volatility refers to the deviation in the operating profits. Earnings before interest and taxes and depreciation scaled by the total assets have been used as proxy to measure the volatility as used by Titman and Wessels (1988). Use of debt capital increases the volatility of the net profit. Firms that have high operating risk can lower the volatility of net profit by reducing the level of debt. A negative relationship between operating risk and leverage is expected from pecking order theory perspective. It is commonly argued in the literatures that when a company has higher volatility in earnings, the probability of bankruptcy increases and the company will have difficulties in arranging funds to service the

interest. As predicted by the theory, long term debt found to be negatively related to volatility. But the coefficients are not statistically significant. The positive relationships observed with short term debt and total debts are inconsistent with the theories but the coefficients are not statistically significant.

8. Financial flexibility is referred to the amount of cash and marketable securities in the current asset of a company. In this study, financial flexibility has been measured as total investment in the cash and marketable securities scaled by total assets. Studies typically show a negative relationship between financial flexibility and debt ratio and this is in line with the pecking order theory by Myers (1984). In this study, long term debt ratio and total debt ratio found to be negatively related to financial flexibility but are not statistically significant.

9. In addition the firm-specific factors, expected GDP has been considered as a significant factor determining the capital structure of the firm. In recent studies, the expected GDP have been found as a significant variable in explaining the leverage of the firms. The GDP of the following year has been used as a proxy to examine the effect in capital structure of Nepalese firms. In this study, positive relationships have been observed with short term, long term, and total debt ratios. But the coefficients are not statistically significant. The positive relationships found in this study are consistent with the studies of Booth et al. (2001), Hall and Jorgensen (2006), and Mateus (2006). This is because good economic climate provide healthy environment to expand the businesses and the risk of bankruptcy will be lower if the GDP is expected to rise and firms will be motivated to use debt capital.

10. Another macro-economic variable that has been considered in this study is the inflation. The previous studies have shown mixed results. Hatzinikolaou et al. (2002) conducted a study to test the effect of inflation on leverage decisions of the US firms. The author found the negative relationship between inflation rate and leverage of the firms. Whereas the studies conducted by Sener (1989) and Taggart (1995) have noted positive relation. In this study, positive relationship of expected inflation have been observed with all three types of debt ratios, short term debt, long term debt, and total debt ratios. But the results are statistically significant with the long term debt and total debt ratios.

In order to investigate whether trade-off theory of capital structure explains the financial behaviors of Nepalese firms, the symmetric partial adjustment model has been used in this study. The symmetric partial adjustment model of capital structure management of the firms assumes that each company has a desired target level of leverage ratio and that each company finding its actual leverage not equal to its desired level, attempts only a partial adjustment towards a desired level of leverage. The symmetric partial adjustment model is used to indicate the speed with which companies adjust their actual leverage ratio to desired leverage ratio. The capital structure or leverage adjustment process is a trade-off between the adjustment costs towards a target leverage ratio and the costs of being in disequilibrium. If the costs of being in disequilibrium are greater than the adjustment costs towards target leverage, then the estimated coefficient of lagged leverage, should be close to zero and the corresponding value of speed of adjustment towards target leverage, which is equal to $(1- \alpha_t)$, is close to one and vice versa. The results of symmetric partial adjustment model indicate that the capital structure of

selected firms is explained by the trade-off theory. The negative coefficients of previous debt ratios with change in current debt ratio support the theory. The model has been tested for short-term, long-term and total debt ratios and found the negative coefficients for all three debt ratios. Since the negative relationship between previous debt ratio and the change in current debt ratio indicates the firms adjust their debt capital based on the previous debt, this study has tested the speed of adjustment of debt capital. The study has observed the speed of adjustment of 26.6 percent, 27.6 percent, and 21.5 percent in short term, long term, and total debt ratio respectively. Based on the facts, it can be concluded that the capital structure of selected Nepalese firms is explained by the trade-off theory of capital structure.

Pecking order theory predicts that due to the information asymmetry between a firm and outside investors regarding the real value of both current operations and future prospects, external capital (debt and equity) will always be relatively costly compared to internal capital (retained earnings). Myers and Majluf (1984) argue that information asymmetry will lead to a mispricing of a firm's equity in the marketplace, causing a loss of wealth for existing shareholders.

In order to test the pecking order theory, Shyam-Sunder and Myers (1999) and Frank and Goyal (2003) estimate a firm's financing deficit and analyze whether it is fully covered by debt. A firm pays dividends, makes investment, finances changes in net working capital, and it generates cash from operating activities. The accumulation of these four variables results in the financing deficit and same model has been used in this study. According to the theory, if the pecking order theory holds, the financing deficit is fully covered by debt, which implies $\alpha = 0$ for the intercept term and the value of $\beta = 1$ for

sensitivity coefficient of the independent variable, capital deficiency. The result of this study show the values of intercept as 0.435 and the coefficient of capital deficiency as 0.652 which are slightly different from the prediction of the theory as zero and one. The coefficients observed for the variables capital deficiency is statistically significant. This indicates the existence of pecking order theory in weak form.

Another significant observation noted in this study is the relationship between change in debt ratio and capital deficiency which is the major factor determining the change on debt ratio according to pecking order hypothesis. In this respect significant positive relationships have been found in both private and public firms as predicted by the theory. The finding of this study is also consistent with the findings of Singh (1994) in 10 developing countries. Singh (1994) provided evidence suggesting that firms in those 10 developing countries rely heavily on external funds and particularly on new shares issues to finance their investment. Therefore, though the result does not support the validity of pecking order theory in its strong form, it can be concluded that the findings support the validity of pecking order theory in its weak form such as found by Shyam-Sunder and Myers (1999).

In addition, examining the various issues relating to capital structure management in Nepalese firms based on the numerical date collected from secondary sources, an attempt has been made to examine the issues relating to the capital structure based on the opinion survey among the managers working at different capacity having decision making capacity in the financial aspect of their concerned firms. The questionnaire that has been developed for this study consist eleven questions. Out of these, four questions are related to the personal information of the respondents and the rest seven questions are concerned

with the capital structure issues. Based on the responses from the respondents, the findings have been discussed in the following paragraph.

The respondents have been asked to rank for their preferred source of funds and as per responses internal source (retained earnings) found to be the most preferred source of funds among the managers which is consistent with the pecking order hypothesis. Among the 12 different factors affecting the use of debt capital in the firm, the volatility of earnings and cash flows, the tax advantages of interest deductibility, and ability to manage earnings per share found to be the first three important factors determining the use of debt capital. Out of the 10 different determinants considered, the first three important determinants observed are profitability of the firms, volatility of the income, and growth opportunities of the firms.

Regarding the factors affecting the use of equity capital, dilution in the earning per share, the sufficiency of current profits to fund the available investment opportunities, and the amount by which the stock prices would be overpriced or underpriced by the market have been observed as most important factors based on the responses received. In order to examine the opinions of the managers on debt policy of the firms, the respondents have been asked to rank the seven different debt related facts. The result shows that the most important three factors, among the seven different factors given to them, having influencing power in determining the debt policy among the managers are sufficiency of internal funds, market interest rates of debt capital and under valuation of stock as a result of issuance of stock.

6.1 Concluding remarks

The major conclusion of this study is that the size of the firms, liquidity of the firms, volatility of the operating profit, assets tangibility, and expected inflation in the economy have been found as significant factors in determining the capital structure of the Nepalese manufacturing enterprises. However, the significant negative relationship of size of the firms, measured in terms of sales of the firms, indicated that the firms having more sales tend to use less amount of debt capital in their capital structure which is inconsistent with the theory and findings of most of the previous studies. The rest variables have revealed the mix results and are not statistically significant. Based on these results it can be concluded that size of the firms, liquidity of the firms, assets tangibility, volatility, and expected inflation in the economy are the significant factors affecting the capital structure decisions in Nepalese manufacturing firms.

This study also concludes that the Nepalese firms have a practice of determining the target debt ratios for their firms and try to achieve the target debt ratio if the actual debt ratio happens to be more or less than the target ratio. However, the results show that the speed of adjustment toward to achieve the target ratio is very low as compared to the results from the developed countries. With this it can be concluded that the trade-off theory of capital structure explains the financing behavior to some extent but not fully. In addition, this study has also examined the explanatory power of pecking order theory and the results indicate that the pecking order theory explains the capital structure of Nepalese manufacturing enterprises in its weak form. Thus, the results indicate that the trade-off theory and pecking order theory are not mutually exclusive theory of capital structure management from the Nepalese data.

6.2 Recommendations

The major issue relating to capital structure management of the firm is that whether there exists an optimum capital structure. To answer this question various theories have been developed and those theories suggest that the proper management of capital structure reduce the overall cost of capital which results in increasing the value of the firm. Many empirical studies carried out in developed and developing countries have also confirmed it. In order to examine this issue, whether the Nepalese firms have been achieving these benefits through the proper management in the capital structure, this study has been carried out and based on the findings of this study, the following are some major recommendations.

1. The capital structure management in Nepalese enterprises, both in private and public sectors, found to be poor. Many enterprises have been running with excessive debt capital. Surprisingly, there are enterprises that have been running even with negative net worth. In order to achieve the benefit of the value maximization of the firm, the Nepalese enterprises should try to maintain the capital structure considering both the cost and benefits associated with debt capital. In general, the cost of debt capital is cheaper as compared to the cost of equity capital, but excessive use of debt increase the cost of debt capital even more that cost of equity and which results in reducing the value of the firm. Hence, it is recommended that the firms should have financial planning taking into account both the cost and benefits of debt capital in their capital structure.

2. With the significant negative relationship of the size of the firms, measured in term of sales, it clearly indicated that the larger firms tend to use less amount of debt capital in their capital structure. Theoretically and previous studies suggest that bigger firms should use more debt capital. In other words, the relationship of size of the firms with the leverage is expected to be positive. The reason as argued by Nagano (2003) was being large firms generally seen as diversified entity. The diversification actually can protect them over time from demand downturns in business or product class, thus lowering the probability of income loss or in the extreme case insolvency. Therefore, large firms should be more leveraged, as they were less prone to bankruptcy. But the result observed in this study totally inconsistent with the previous studies and theories. Based on the findings, it is recommended that the firms should try to use debt as expected by the theories to increase the value of the firms.

3. The results found in respect to the relationship between non debt tax shields, which is measured as the ratio of amount of depreciation to total assets, is inconsistent with the theory and previous empirical studies. One of the advantages of using debt capital is to reduce tax as interest is tax deductible expense. Non debt tax shields serve as a substitute for the interest expenses that are deductible in the calculation of the corporate tax. According to the MM theory, the main incentive to use debt capital is to take advantage of interest tax shields or tax deductible of interest. The presence of other non-debt tax shields like depreciation and amortization reduces this incentive. With this theories expect negative relationship between non debt tax shields and amount of debt used by the firms.

However the relationship found in this study is inconsistent with logic of the theory. This clearly indicates that there is lack of proper management of debt capital and lack of proper planning in respect of debt capital. Based on these facts, it is recommended that the Nepalese firms are required to give proper attention in this regards to increase the value of the firms.

4. Looking at the results revealed by the analysis, most of the firms found to be using more short term debt. There are some firms using no long term debt capital at all throughout the study period. In addition, the relationship of long term debt with most of the factors considered in this study as determinants of capital structure found to be insignificant. This indicates there is no proper long term debt management in Nepalese firms. This may be the results of lack of efficient bond markets in our economy. Yet the commercial banks and financial institutions are being the source of debt capital for the Nepalese enterprises. In general, the banks prefer the short term loans. Hence, in order to develop the capital structure management practices in the Nepalese enterprises, there should exist proper and efficient capital market for both debt and equity capital. With this, it is recommended that the concerned authority should do something to develop the capital market in our country.

5. The results revealed that the personnel serving in the Nepalese enterprises as finance officers have been found to be lack of proper knowledge in the field of financial management. In most of the Nepalese enterprises financial management practices seem to be weak. This is just because of lack of competent personnel to take the proper decision relating to financing matters. Hence, it is recommended

that the Nepalese enterprises are required to develop competent personnel so that the correct financing decision could be made to take the benefits of sound financial management.

6. One important benefit of using debt capital is to mitigate the agency problem in the firms. The agency problem in the firms is a serious problem and the firms are required to spend a lot of money to mitigate this problem. However, using the debt capital a firm can reduce the problem in a firm. But, just using the debt capital is not the solution to solve the agency problem, it should be managed properly. Based on the results of this study the Nepalese enterprises do not seem to be benefited from it. So, it is recommended to use the debt capital in a proper way to take this advantage of using the debt capital in the firms.

7. With reference to the results from the test of trade-off theory in the Nepalese manufacturing enterprises, they seem to have a target debt ratio and have been trying to achieve the target debt ratio if the actual debt ratio happens to be deviated from the target debt ratio. But the results revealed that the speed of adjustment towards achieving the target debt ratio is very low as compared to the speed of adjustment in developed countries. If the firms have a practice of having a target debt ratio, they are well advised to examine the reasons behind it to take the benefits that could be derived from being in a target debt ratio.

6.3 Recommendation for further research

This study has limited to only 25 manufacturing firms of Nepal and 12 years data from 2000 to 2011. Although there are many issues relating to capital structure, this study has limited to issues relating to determinants of capital structure, pecking order theory, trade off theory of capital structure, and opinion survey relating to the capital structure issues. In addition, all the models used in this study have been borrowed from the previous studies. Keeping in mind these facts and the limitation of this study, further research can be carried out to explore the other issues relating to the capital structure as follows.

1. The findings of this study are based on the data for the 12-year period from 2000 to 2011 and the number of enterprises considered is only 25. So, in order to provide more accurate results further researchers are recommended to cover longer period including more number of enterprises.

2. The findings of this study are based on the multiple regression models. There are many models like factor analysis, multivariate discriminant analysis, Regression models including dummy variables etc. The future researches should based on those mathematical tools rather than using simple regression models.

3. The primary data analysis is based on the responses of only 186 respondents. The more accurate result may be expected if the number of respondents is increased.

4. This survey is carried out with a very few assertions relating to capital structure management. So future researches are expected to cover more assertions to have more in depth views about the capital structure management in our country.

5. Among the several determinants of capital structure management, as suggested by the theories, only 10 variables are considered in this study. No doubt, the result is expected to be more accurate and reliable if the variables are increased.

6. The variables considered in this study are only those variables as indicated by the theories and previous studies carried out in developed countries. There may be some other variables that can be applied solely in such countries like ours where the capital market is very small and not efficient.

Annexure 1
Total assets of the selected enterprises for the period of 12 years from 2000 to 2011

(In million rupees)

S.N	Enterprises	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1	Arun Vanaspati Udyog Limited	269	312	349	344	543	499	398	291	143	153	138	84
2	Bhrikuti Pulp and Paper Nepal Limited	1,322	1,248	1,207	1,167	1,050	1,001	941	857	775	790	651	412
3	Bottlers Nepal Balaju Limited	730	743	923	926	774	863	760	1,105	948	1,119	1,325	1,677
4	Bottlers Nepal Terai Limited	529	612	688	655	572	619	419	522	435	595	856	236
5	Fleur Himalayan Limited	56	53	50	56	59	55	56	55	65	66	205	290
6	Birat Shoe Limited	55	77	78	80	91	85	88	87	88	88	88	88
7	Himalayan Distillery Limited	557	554	532	507	558	546	579	573	538	678	654	672
8	Jyoti spinning Mills Limited	866	846	780	766	755	742	714	636	667	658	669	657
9	Nepal Bitumin and Barrel Udyog Limited	113	105	99	108	94	99	131	142	217	205	290	249
10	Nepal Khadya Udhyog Limited	1,121	1,096	1,168	1,088	1,067	1,188	1,205	1,305	990	1,268	1,303	1,619
11	Nepal Lube Oil Limited	123	114	126	161	134	144	161	156	165	173	169	171
12	Nepal Vanaspati Ghee	182	231	216	191	119	114	107	106	106	103	98	100
13	Raghupati Jute Mills	83	292	312	303	307	325	458	475	486	471	612	542
14	Shree Ram sugar mills	1,135	348	1,056	1,130	1,038	984	921	1,013	825	691	708	700
15	Unilever Nepal	766	797	736	858	1,017	886	789	879	914	912	894	903
16	Agriculture Input	1,330	1,355	1,306	1,405	1,468	1,261	1,260	1,139	1,747	1,462	1,535	1,498
17	Butwal Spinning Mills Limited	379	350	306	268	276	335	366	145	152	133	142	137
18	Dairy development	728	665	737	771	770	725	698	830	926	878	902	890
19	Gorakhkali Rubber Udhyog Limited	906	839	812	703	660	622	604	586	564	664	734	699
20	Hetauda Cement	848	780	731	763	756	791	792	763	771	784	255	520
21	Jadibuti	62	64	51	60	66	71	74	72	70	82	94	88
22	Nepal Aushadi	140	131	123	133	154	105	96	129	83	107	75	91
23	Nepal Foundry Company Ltd.	36	36	36	36	36	36	36	36	40	44	44	44
24	Nepal Orind Magnesite	443	449	423	424	819	426	428	429	436	431	427	450
25	Udayapur Cement	2,246	2,139	2,080	1,957	1,950	1,933	4,449	4,414	4,394	4,351	4,165	4,519

Annexure 2

Short term debt of the selected enterprises for the period of 12 years from 2000 to 2011

(In million rupees)

S.N	Enterprises	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1	Arun Vanaspati Udyog Limited	236	277	308	307	505	407	328	367	76	92	84	49
2	Bhrikuti Pulp and Paper Nepal Limited	336	448	783	862	923	717	818	739	788	544	912	663
3	Bottlers Nepal Balaju Limited	192	285	340	333	174	229	276	808	416	602	787	1,058
4	Bottlers Nepal Terai Limited	212	272	305	272	197	236	156	316	213	378	535	137
5	Fleur Himalayan Limited	28	35	77	90	97	102	111	119	130	137	293	477
6	Birat Shoe Limited	23	45	39	40	30	41	27	47	40	47	56	58
7	Himalayan Distillery Limited	102	131	131	182	223	262	320	377	350	421	332	353
8	Jyoti spinning Mills Limited	724	729	339	290	238	154	74	77	104	175	159	139
9	Nepal Bitumin and Barrel Udyog Limited	48	73	81	80	75	71	114	123	168	141	225	204
10	Nepal Khadya Udhyog Limited	565	624	985	1,038	1,061	1,139	1,224	1,293	985	1,261	1,627	2,173
11	Nepal Lube Oil Limited	49	44	74	105	76	87	106	100	106	129	114	122
12	Nepal Vanaspati Ghee	397	682	676	699	649	682	724	743	753	764	765	785
13	Raghupati Jute Mills	27	38	58	45	59	67	259	251	282	291	384	361
14	Shree Ram sugar mills	380	493	477	606	570	497	634	965	812	738	710	783
15	Unilever Nepal	444	505	638	719	989	803	439	532	592	710	783	774
16	Agriculture Input	1,080	1,023	1,104	1,075	1,140	915	1,077	622	1,272	1,158	1,231	1,200
17	Butwal Spinning Mills Limited	24	35	35	67	91	123	150	96	394	450	423	602
18	Dairy development	406	398	388	347	359	345	413	510	613	546	571	569
19	Gorakhkali Rubber Udhyog Limited	53	392	421	412	466	516	579	635	708	739	618	768
20	Hetauda Cement	809	863	890	914	926	954	936	911	951	999	336	706
21	Jadibuti	57	78	56	67	76	81	101	121	110	125	150	148
22	Nepal Aushadi	40	43	101	117	86	76	70	105	303	306	275	435
23	Nepal Foundry Company Ltd.	9	13	35	15	12	8	12	7	5	10	10	8
24	Nepal Orind Magnesite	1,588	1,632	1,654	1,708	5,563	1,823	1,887	1,941	2,016	2,085	2,135	2,218
25	Udayapur Cement	386	421	441	485	593	638	925	1,130	1,125	1,084	1,091	1,157

Annexure 3

Long term debt of the selected enterprises for the period of 12 years from 2000 to 2011

(In million rupees)

S.N	Enterprises	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1	Arun Vanaspati Udyog Limited	111	110	105	100	100	210	254	261	443	468	492	273
2	Bhrikuti Pulp and Paper Nepal Limited	1,026	951	1,003	976	651	1,011	1,032	1,081	1,083	1,079	1,074	733
3	Bottlers Nepal Balaju Limited	-	-	-	-	-	-	72	-	200	133	66	-
4	Bottlers Nepal Terai Limited	-	-	-	-	-	-	-	-	-	-	-	-
5	Fleur Himalayan Limited	31	31	-	-	-	-	-	-	-	-	-	-
6	Birat Shoe Limited	43	62	62	64	48	63	47	75	67	72	70	72
7	Himalayan Distillery Limited	208	215	238	202	219	172	150	105	80	134	278	258
8	Jyoti spinning Mills Limited	409	393	529	574	614	584	602	598	545	528	569	593
9	Nepal Bitumin and Barrel Udyog Limited	90	88	90	91	99	100	144	180	285	280	381	345
10	Nepal Khadya Udhyog Limited	546	466	-	-	-	-	-	-	-	-	-	-
11	Nepal Lube Oil Limited	35	36	-	-	-	-	-	-	-	-	-	-
12	Nepal Vanaspati Ghee	223	-	-	9	9	5	2	-	-	-	-	-
13	Raghupati Jute Mills	83	83	77	77	59	64	23	41	30	19	82	128
14	Shree Ram sugar mills	521	497	488	463	410	336	294	248	257	319	240	306
15	Unilever Nepal	-	-	-	-	-	-	-	-	-	-	-	-
16	Agriculture Input	-	-	-	-	-	-	-	-	-	-	-	-
17	Butwal Spinning Mills Limited	1,115	1,119	1,122	848	580	668	605	450	575	569	570	571
18	Dairy development	157	156	156	86	84	83	79	7	4	37	16	19
19	Gorakhkali Rubber Udhyog Limited	758	557	564	532	527	511	512	516	522	588	573	603
20	Hetauda Cement	59	9	-	-	-	-	-	-	-	-	-	-
21	Jadibuti	48	62	42	45	46	47	51	51	52	53	66	59
22	Nepal Aushadi	50	55	71	102	104	217	241	184	86	182	180	225
23	Nepal Foundry Company Ltd.	-	-	-	2	2	2	2	2	2	2	2	2
24	Nepal Orind Magnesite	1,023	1,070	1,092	1,085	1,171	1,076	1,086	1,066	1,077	1,095	978	998
25	Udayapur Cement	2,082	2,047	1,966	1,910	1,880	1,855	1,748	1,739	1,740	1,741	1,724	1,821

Annexure 4
Total debt of the selected enterprises for the period of 12 years from 2000 to 2011

(In million rupees)

S.N	Enterprises	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1	Arun Vanaspati Udyog Limited	347	387	412	407	605	617	582	628	520	560	576	322
2	Bhrikuti Pulp and Paper Nepal Limited	1,362	1,399	1,786	1,837	1,575	1,729	1,850	1,820	1,871	1,622	1,986	1,395
3	Bottlers Nepal Balaju Limited	192	285	340	333	174	229	347	808	616	735	854	1,058
4	Bottlers Nepal Terai Limited	212	272	305	272	197	236	156	316	213	378	535	137
5	Fleur Himalayan Limited	59	66	77	90	97	102	111	119	130	137	293	477
6	Birat Shoe Limited	66	107	101	105	79	103	74	122	107	120	126	130
7	Himalayan Distillery Limited	311	346	368	385	442	434	471	482	430	555	610	611
8	Jyoti spinning Mills Limited	1,133	1,122	868	863	853	739	677	675	648	703	728	732
9	Nepal Bitumin and Barrel Udyog Limited	137	161	171	171	174	171	258	302	453	421	606	548
10	Nepal Khadya Udhyog Limited	1,111	1,089	985	1,038	1,061	1,139	1,224	1,293	985	1,261	1,627	2,173
11	Nepal Lube Oil Limited	83	80	74	105	76	87	106	100	106	129	114	122
12	Nepal Vanaspati Ghee	255	682	676	708	658	688	726	743	753	764	765	785
13	Raghupati Jute Mills	110	121	135	121	118	131	282	292	312	309	466	489
14	Shree Ram sugar mills	902	990	965	1,069	980	833	928	1,214	1,069	1,057	950	1,088
15	Unilever Nepal	444	505	638	719	989	803	439	532	592	710	783	774
16	Agriculture Input	1,080	1,023	1,104	1,075	1,140	915	1,077	622	1,272	1,158	1,231	1,200
17	Butwal Spinning Mills Limited	1,139	1,154	1,158	914	671	791	756	546	968	1,018	993	1,172
18	Dairy development	563	554	543	433	443	427	492	517	616	583	587	588
19	Gorakhkali Rubber Udhyog Limited	810	948	985	944	993	1,027	1,090	1,151	1,231	1,328	1,191	1,372
20	Hetauda Cement	868	873	890	914	926	954	936	911	951	999	336	706
21	Jadibuti	105	141	98	112	122	128	152	172	162	178	216	208
22	Nepal Aushadi	90	98	172	218	190	293	311	289	389	488	455	660
23	Nepal Foundry Company Ltd.	9	13	35	17	14	10	14	9	7	12	12	11
24	Nepal Orind Magnesite	2,611	2,702	2,746	2,794	6,734	2,900	2,972	3,007	3,093	3,180	3,113	3,217
25	Udayapur Cement	2,468	2,468	2,407	2,395	2,473	2,491	2,674	2,869	2,865	2,824	2,815	2,978

Annexure 5

Sales of the selected enterprises for the period of 12 years from 2000 to 2011

(In million rupees)

S.N	Enterprises	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1	Arun Vanaspati Udyog Limited	287	363	648	511	644	606	459	328	131	32	38	75
2	Bhrikuti Pulp and Paper Nepal Limited	489	654	578	701	614	619	633	737	702	853	719	869
3	Bottlers Nepal Balaju Limited	373	415	535	610	632	615	622	634	747	1,003	1,588	1,852
4	Bottlers Nepal Terai Limited	442	533	461	465	432	401	354	485	475	621	845	916
5	Fleur Himalayan Limited	14	20	13	24	19	15	30	36	42	43	238	393
6	Birat Shoe Limited	36	45	33	17	7	49	84	19	21	21	65	33
7	Himalayan Distillery Limited	75	95	204	315	454	530	657	641	643	1,003	1,298	1,634
8	Jyoti spinning Mills Limited	648	673	647	725	719	855	731	772	1,163	1,765	714	600
9	Nepal Bitumin and Barrel Udyog Limited	22	29	25	33	30	29	40	43	50	56	133	97
10	Nepal Khadya Udhyog Limited	578	401	463	369	393	332	490	615	615	668	799	875
11	Nepal Lube Oil Limited	107	72	136	119	85	118	149	184	168	233	342	507
12	Nepal Vanaspati Ghee	140	247	423	226	112	77	79	18	41	99	118	78
13	Raghupati Jute Mills	261	295	422	367	382	482	478	654	596	671	1,053	749
14	Shree Ram sugar mills	457	655	524	537	611	423	641	565	746	533	753	669
15	Unilever Nepal	346	440	1,245	1,525	1,485	1,470	1,819	2,145	2,626	3,055	3,557	3,056
16	Agriculture Input	186	249	1,115	357	644	306	489	161	132	1,561	2,328	783
17	Butwal Spinning Mills Limited	96	104	83	12	3	155	238	11	11	11	18	13
18	Dairy development	1,485	1,548	1,609	1,593	1,644	1,680	1,801	2,193	2,628	2,929	3,267	3,645
19	Gorakhkali Rubber Udhyog Limited	390	408	381	401	352	341	403	364	305	473	589	638
20	Hetauda Cement	438	598	416	655	659	656	706	681	693	687	690	927
21	Jatibuti	34	43	48	46	47	54	54	53	60	73	74	94
22	Nepal Aushadi	47	82	60	66	52	50	53	35	21	9	4	13
23	Nepal Foundry Company Ltd.	10	11	13	15	13	16	15	15	20	24	25	31
24	Nepal Orind Magnesite	16	25	11	16	12	17	21	22	23	16	3	7
25	Udayapur Cement	495	518	719	515	473	546	710	506	553	675	716	918

Annexure 6

Earnings before interest and taxes of the selected enterprises for the period of 12 years from 2000 to 2011

(In million rupees)

S.N	Enterprises	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1	Arun Vanaspati Udyog Limited	63	72	91	88	253	163	108	138	40	49	21	21
2	Bhrikuti Pulp and Paper Nepal Limited	153	295	320	347	314	325	367	320	277	338	288	193
3	Bottlers Nepal Balaju Limited	196	231	288	340	300	345	305	310	275	344	448	497
4	Bottlers Nepal Terai Limited	120	186	218	179	160	186	225	188	154	129	186	62
5	Fleur Himalayan Limited	11	7	7	9	13	11	14	14	21	23	67	37
6	Birat Shoe Limited	11	20	18	19	14	19	13	22	19	22	26	29
7	Himalayan Distillery Limited	75	100	94	82	95	115	128	144	103	151	163	161
8	Jyoti spinning Mills Limited	266	265	217	224	237	269	251	267	239	210	186	176
9	Nepal Bitumin and Barrel Udyog Limited	23	30	33	32	32	32	51	53	87	88	116	92
10	Nepal Khadya Udhyog Limited	57	44	2	(67)	19	93	(17)	65	32	27	50	37
11	Nepal Lube Oil Limited	26	32	22	35	36	41	42	51	37	36	43	36
12	Nepal Vanaspati Ghee	68	142	125	77	26	24	22	21	21	25	24	24
13	Raghupati Jute Mills	52	60	52	78	80	86	108	106	117	125	57	63
14	Shree Ram sugar mills	249	171	185	269	172	94	352	448	289	223	263	244
15	Unilever Nepal	181	208	192	286	465	441	235	454	478	466	433	369
16	Agriculture Input	201	158	337	102	210	163	147	289	726	389	320	261
17	Butwal Spinning Mills Limited	67	72	58	48	75	89	92	48	46	11	28	29
18	Dairy development	287	229	164	229	164	237	196	347	355	317	349	335
19	Gorakhkali Rubber Udhyog Limited	296	276	289	221	225	221	215	213	200	192	281	(208)
20	Hetauda Cement	375	329	314	309	288	273	312	282	307	336	118	258
21	Jadibuti	41	42	27	38	41	45	47	45	40	51	57	47
22	Nepal Aushadi	54	54	52	57	47	35	38	43	33	31	30	35
23	Nepal Foundry Company Ltd.	5	4	6	5	4	5	8	9	8	9	9	9
24	Nepal Orind Magnesite	89	79	73	74	78	74	75	77	84	82	80	83
25	Udayapur Cement	567	589	619	581	571	636	876	1,088	1,074	1,211	1,235	1,234

Note: Figures in parentheses indicate operating losses.

Annexure 7

Depreciation expenses of the selected enterprises for the period of 12 years from 2000 to 2011

(In million rupees)

S.N	Enterprises	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1	Arun Vanaspati Udyog Limited	5	5	12	13	8	8	8	9	9	9	3	4
2	Bhrikuti Pulp and Paper Nepal Limited	13	82	82	82	82	82	81	71	71	71	72	50
3	Bottlers Nepal Balaju Limited	37	44	52	56	57	49	64	60	65	68	72	80
4	Bottlers Nepal Terai Limited	13	17	20	22	23	18	58	44	40	30	50	16
5	Fleur Himalayan Limited	2	2	1	1	1	1	1	1	1	1	4	3
6	Birat Shoe Limited	3	5	4	5	3	5	3	5	5	5	6	7
7	Himalayan Distillery Limited	21	23	23	20	23	22	24	26	20	28	35	35
8	Jyoti spinning Mills Limited	38	40	40	41	41	42	43	44	39	37	43	45
9	Nepal Bitumin and Barrel Udyog Limited	5	7	8	8	7	8	11	12	19	19	25	22
10	Nepal Khadya Udhyog Limited	13	12	11	12	10	9	8	8	7	7	8	8
11	Nepal Lube Oil Limited	1	2	2	2	2	2	2	2	2	1	2	2
12	Nepal Vanaspati Ghee	0.43	0.39	1	1	3	3	2	2	2	4	3	3
13	Raghupati Jute Mills	2	11	2	12	13	14	14	18	21	22	23	21
14	Shree Ram sugar mills	25	23	23	29	23	14	116	101	89	80	76	78
15	Unilever Nepal	25	18	13	19	25	14	11	13	19	17	19	20
16	Agriculture Input	29	39	37	46	47	44	28	30	23	26	31	30
17	Butwal Spinning Mills Limited	21	21	21	21	21	21	21	21	21	13	11	10
18	Dairy development	32	30	29	30	29	34	36	37	37	40	39	38
19	Gorakhkali Rubber Udhyog Limited	49	44	41	38	35	32	29	27	23	22	22	21
20	Hetauda Cement	39	35	31	27	24	22	19	20	20	20	7	14
21	Jatibuti	2	2	1	1	1	1	1	1	1	1	1	1
22	Nepal Aushadi	2	2	1	1	2	2	2	2	1	1	1	2
23	Nepal Foundry Company Ltd.	0.04	0.04	0.07	0.06	0.05	0.05	0.04	0.04	0.06	0.06	0.06	0.06
24	Nepal Orind Magnesite	2	2	2	1	1	1	1	1	0.43	0.35	0.35	0.36
25	Udayapur Cement	111	111	111	109	87	87	200	225	225	225	230	238

Annexure 8
Inventories of the selected enterprises for the period of 12 years from 2000 to 2011

(In million rupees)

S.N	Enterprises	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1	Arun Vanaspati Udyog Limited	54	61	68	61	237	146	91	119	21	31	15	21
2	Bhrikuti Pulp and Paper Nepal Limited	128	132	156	183	149	160	204	177	135	195	143	98
3	Bottlers Nepal Balaju Limited	121	143	185	227	185	246	177	189	144	209	304	337
4	Bottlers Nepal Terai Limited	94	151	178	134	114	151	108	100	75	69	86	127
5	Fleur Himalayan Limited	11	7	7	9	13	11	14	13	21	22	66	36
6	Birat Shoe Limited	37	36	36	36	19	35	17	27	41	46	39	34
7	Himalayan Distillery Limited	41	59	51	7	59	46	69	105	68	86	81	105
8	Jyoti spinning Mills Limited	190	186	136	142	155	185	166	180	151	132	75	109
9	Nepal Bitumin and Barrel Udyog Limited	91	82	74	86	73	77	107	116	176	159	234	205
10	Nepal Khadya Udhyog Limited	315	327	314	265	287	420	413	561	396	674	732	813
11	Nepal Lube Oil Limited	23	29	19	31	32	36	38	48	34	33	41	47
12	Nepal Vanaspati Ghee	67	141	124	76	20	19	18	18	18	18	18	18
13	Raghupati Jute Mills	32	39	48	54	55	59	80	70	75	81	12	17
14	Shree Ram sugar mills	200	125	136	210	103	65	120	245	97	62	44	47
15	Unilever Nepal	141	155	111	254	481	405	170	440	469	424	401	331
16	Agriculture Input	71	59	205	113	220	130	148	31	365	100	115	222
17	Butwal Spinning Mills Limited	24	29	15	5	32	46	49	5	5	5	5	5
18	Dairy development	223	169	105	169	105	169	123	273	281	254	285	266
19	Gorakhkali Rubber Udhyog Limited	197	187	207	145	155	156	157	159	154	149	238	229
20	Hetauda Cement	298	259	252	255	240	230	274	234	203	173	126	14
21	Jatibuti	37	43	22	33	36	41	45	42	36	57	50	50
22	Nepal Aushadi	52	51	49	54	43	31	35	38	31	28	28	39
23	Nepal Foundry Company Ltd.	1	1	3	5	3	4	4	6	9	10	9	9
24	Nepal Orind Magnesite	38	29	21	23	49	24	26	28	35	33	31	36
25	Udayapur Cement	345	367	396	362	397	462	477	639	624	761	775	947

Annexure 9
Current assets of the selected enterprises for the period of 12 years from 2000 to 2011

(In million rupees)

S.N	Enterprises	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1	Arun Vanaspati Udyog Limited	184	230	249	244	435	398	292	194	56	69	54	61
2	Bhrikuti Pulp and Paper Nepal Limited	210	217	251	287	246	278	298	277	258	342	275	308
3	Bottlers Nepal Balaju Limited	369	394	506	544	448	553	436	511	390	505	681	857
4	Bottlers Nepal Terai Limited	406	490	561	506	443	479	225	353	285	404	576	490
5	Fleur Himalayan Limited	22	20	20	29	33	31	34	34	42	44	197	278
6	Birat Shoe Limited	41	42	41	42	54	48	51	50	50	50	50	50
7	Himalayan Distillery Limited	138	129	120	111	175	162	197	206	183	225	197	211
8	Jyoti spinning Mills Limited	280	281	240	264	279	291	278	225	251	238	245	241
9	Nepal Bitumin and Barrel Udyog Limited	99	90	85	96	83	88	120	133	208	197	278	238
10	Nepal Khadya Udhyog Limited	906	893	976	904	898	1,024	1,050	1,155	854	1,135	1,131	1,435
11	Nepal Lube Oil Limited	105	97	111	143	115	127	145	141	151	161	156	159
12	Nepal Vanaspati Ghee	162	212	194	154	84	82	77	78	79	76	75	75
13	Raghupati Jute Mills	60	60	81	76	80	101	137	126	141	137	252	195
14	Shree Ram sugar mills	259	174	195	291	197	129	180	348	230	127	129	128
15	Unilever Nepal	623	657	590	724	891	742	640	744	792	759	746	752
16	Agriculture Input	530	551	509	593	637	441	458	349	966	703	778	741
17	Butwal Spinning Mills Limited	63	56	33	16	46	125	178	20	48	32	39	35
18	Dairy development	412	376	451	466	496	471	463	584	681	632	657	645
19	Gorakhkali Rubber Udhyog Limited	344	307	313	242	227	225	225	252	246	352	442	397
20	Hetauda Cement	451	414	394	452	471	527	540	506	517	528	533	264
21	Jatibuti	47	49	35	44	51	57	60	59	57	70	71	70
22	Nepal Aushadi	105	96	89	100	122	75	68	102	58	83	52	68
23	Nepal Foundry Company Ltd.	9	9	9	9	9	9	9	9	14	14	14	14
24	Nepal Orind Magnesite	119	128	103	106	502	109	111	114	120	116	112	136
25	Udayapur Cement	524	526	575	558	636	705	850	1,029	1,009	1,183	1,212	1,383

Annexure 10
Cash balance of the selected enterprises for the period of 12 years from 2000 to 2011

(In million rupees)

S.N	Enterprises	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1	Arun Vanaspati Udyog Limited	5	6	7	6	24	15	9	12	2	3	2	1
2	Bhrikuti Pulp and Paper Nepal Limited	13	13	16	18	15	16	20	18	13	20	14	9
3	Bottlers Nepal Balaju Limited	12	14	19	23	18	25	18	19	14	21	30	34
4	Bottlers Nepal Terai Limited	9	15	18	13	11	15	11	10	7	7	9	3
5	Fleur Himalayan Limited	1	1	1	1	1	1	1	1	2	2	7	4
6	Birat Shoe Limited	1	1	1	1	1	1	1	1	1	1	1	2
7	Himalayan Distillery Limited	3	6	5	4	5	7	8	9	6	9	9	9
8	Jyoti spinning Mills Limited	19	19	14	14	15	18	17	18	16	14	15	18
9	Nepal Bitumin and Barrel Udyog Limited	1	2	2	2	2	2	3	3	5	5	7	5
10	Nepal Khadya Udhyog Limited	31	33	31	27	29	42	41	56	40	67	73	104
11	Nepal Lube Oil Limited	2	3	2	3	3	4	4	5	3	3	4	4
12	Nepal Vanaspati Ghee	7	14	12	8	2	2	2	2	2	2	2	2
13	Raghupati Jute Mills	3	4	5	5	5	6	8	7	7	8	1	2
14	Shree Ram sugar mills	20	13	14	21	13	7	12	25	11	6	11	14
15	Unilever Nepal	13	17	17	25	41	41	21	43	44	43	39	33
16	Agriculture Input	14	8	26	1	12	8	9	23	68	34	26	28
17	Butwal Spinning Mills Limited	2	3	1	1	3	5	5	1	1	1	1	1
18	Dairy development	22	17	10	17	10	17	12	27	28	24	27	26
19	Gorakhkali Rubber Udhyog Limited	20	19	21	14	16	16	16	16	15	15	24	19
20	Hetauda Cement	30	26	25	25	24	23	27	24	25	26	9	18
21	Jatibuti	4	4	2	3	4	4	4	4	4	5	5	5
22	Nepal Aushadi	4	5	5	5	4	3	3	4	3	3	3	3
23	Nepal Foundry Company Ltd.	1	1	0.32	0.47	0.36	1	1	1	1	1	1	1
24	Nepal Orind Magnesite	9	8	7	7	8	7	7	8	8	8	8	8
25	Udayapur Cement	35	37	40	36	40	46	48	64	62	76	77	76

Annexure 11
Fixed assets of the selected enterprises for the period of 12 years from 2000 to 2011

(In million rupees)

S.N	Variables	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1	Arun Vanaspati Udyog Limited	85	82	101	100	108	102	106	97	87	84	84	84
2	Bhrikuti Pulp and Paper Nepal Limited	1,112	1,031	955	881	804	723	642	580	517	448	376	412
3	Bottlers Nepal Balaju Limited	361	349	417	382	326	309	324	594	559	614	643	820
4	Bottlers Nepal Terai Limited	123	122	126	149	129	140	194	169	150	191	280	236
5	Fleur Himalayan Limited	34	33	30	28	26	24	22	21	22	22	8	12
6	Birat Shoe Limited	14	35	36	38	37	37	37	37	38	38	38	38
7	Himalayan Distillery Limited	419	425	412	396	383	384	382	367	356	454	457	461
8	Jyoti spinning Mills Limited	586	565	540	502	476	450	436	412	416	420	424	416
9	Nepal Bitumin and Barrel Udyog Limited	14	15	14	13	11	11	11	10	9	8	12	12
10	Nepal Khadya Udhyog Limited	215	203	192	184	169	164	155	150	136	133	172	185
11	Nepal Lube Oil Limited	18	17	15	17	19	17	15	15	14	12	13	13
12	Nepal Vanaspati Ghee	20	20	22	36	35	32	29	28	26	27	24	25
13	Raghupati Jute Mills	23	232	231	227	227	225	321	349	345	334	360	347
14	Shree Ram sugar mills	876	174	860	839	841	855	741	665	595	564	580	572
15	Unilever Nepal	143	140	146	133	126	144	149	135	122	153	148	151
16	Agriculture Input	800	804	796	812	830	821	801	790	781	759	756	758
17	Butwal Spinning Mills Limited	315	294	273	252	230	209	188	125	104	101	103	102
18	Dairy development	315	288	286	305	274	254	234	247	245	246	246	246
19	Gorakhkali Rubber Udhyog Limited	562	532	500	461	433	397	379	334	317	312	292	302
20	Hetauda Cement	397	366	337	311	285	264	251	258	254	256	255	256
21	Jatibuti	15	15	15	16	15	14	14	13	13	12	23	18
22	Nepal Aushadi	35	36	35	33	32	30	29	27	25	24	23	24
23	Nepal Foundry Company Ltd.	27	27	27	27	27	27	27	27	26	29	30	30
24	Nepal Orind Magnesite	323	321	319	318	317	317	316	316	316	316	315	314
25	Udayapur Cement	1,721	1,613	1,505	1,399	1,314	1,228	3,599	3,385	3,385	3,169	2,953	3,136

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Questionnaire

Dear sir / Madam

I, Pradeep Rajopadhyay, am Ph. D. scholar doing research for my Ph. D. degree in finance at Tribhuvan University. The purpose of this research is to investigate the current practice of corporate finance and incentive behind decision making with particular focus on capital structure management in Nepalese firms. I have thus selected to send out a questionnaire to you and believe that this method of investigating will be more time effective for you as manager. This questionnaire consists of 11 questions and will take approximately half an hour to fill in.

I want to point out that this questionnaire is of great importance for the thesis and I am utterly grateful for your participation in this survey. I humbly request you to send it back after being duly answered. The information provided by you will exclusively be used only for academic purpose and will be kept as confidential.

Thanking you and with warm regards,

Truly Yours'

_____

Pradeep Rajopadhyay

1. Name of your company?

   ---

2. Your designation?

   ---

3. Number of years that you have been in this firm at current capacity?

   ---

4. Your education?

   * Bachelor Degree ☐
   * Masters Degree ☐
   * MBA ☐
   * Professional Degree CA / CWA / CPA / ACCA / CFA

5. Which of the following do you include when you measure the level of debt for capital structure management purposes for your firm? (Check all that apply)

   - Long-term debt maturing after one year ☐
   - Long-term debt maturing within one year ☐
   - Short-term debt ☐
   - Accounts Payable ☐
   - Other current liabilities ☐
   - Capital lease obligation ☐
   - Pension liabilities ☐

6. Rank the following sources of long term funds in order of preference for financing new investments. [1 = first choice, and 6 = last choice]

   - Internal equity (Retained Earnings) ☐
   - External common equity ☐
   - Straight debt ☐
   - Convertible debt ☐
   - Straight preferred stock ☐
   - Convertible preferred stock ☐

7. What factors affect how you choose the appropriate amount of debt for your firm? Please rate on a scale of zero (irrelevant) to five (very important). Please make a tick mark that best reflects your choice.

Factors	0	1	2	3	4	5
• The tax advantage of interest deductibility						
• The potential cost of bankruptcy or financial distress						
• The debt levels of other firms in our industry						
• The willingness of our employees to work for a highly indebted firm						
• The volatility of our earnings and cash flows						
• Transaction costs and fees associated with debt issues						
• Debt is used to signal to our competitors that we will compete aggressively						
• High debt signals to the market that we are a high quality firm						
• We limit debt so our customers/suppliers are not worried about our firm going out of business						
• Financial flexibility (we restrict debt so we have enough internal funds available to pursue new investment when they come along						
• To ensure that upper management works hard and efficiently, we use sufficient debt to make sure that large portion of our cash flows are committed to interest payments						
• Ability to manage Earning per share						

8. How do you assess the following factors as determinants of capital structure? Please rate on a scale of zero (irrelevant) to five (very important). Please make a tick mark that best reflects your choice.

Capital structure determinants	0	1	2	3	4	5
• Size of the firms						
• Growth opportunities of the firm						
• Non debt tax shields						
• Profitability of the firms						
• Liquidity of the firm						
• Assets' tangibility of the firm						
• Financial flexibility						
• Volatility of the income						
• Expected gross domestic product (GDP)						
• Expected inflation						

9. Has your firm seriously considered issuing common stock? If "yes," what factors affect your firm's decisions about issuing common stock? Please rate on a scale of zero (irrelevant) to five (very important). Please make a tick mark that best reflects your choice.

Factors	0	1	2	3	4	5
• Stock is our "least risky" source of funds						
• Maintaining a target debt- to-equity ratio						
• Common stock is our cheapest source of fund						
• Providing shares to employee bonus/stock option plans						
• Using a similar amount of equity as is used by other firms in our industry						
• Whether our recent profits have been sufficient to fund our activities						
• Issuing stock gives investors a better impression of our firm's prospects than issuing debt						
• Earnings per share dilution						
• The amount by which our stock is undervalued or overvalued by the market						
• Diluting the holdings of certain shareholders						
• Inability to obtain funds using debt, convertibles, or other sources						

10. What other factors affect your firm's debt policy? Please rate on a scale of zero (irrelevant) to five (very important). Please make a tick mark that best reflects your choice.

Factors	0	1	2	3	4	5
• We use debt when our recent profits (internal funds) are not sufficient to fund our activities						
• Using debt gives investors a better impression of our firm's prospects than issuing common stock						
• We issue debt when interest rates are particularly low						
• We use debt when our equity is undervalued by the market						
• We delay issuing debt because of transactions costs and fees						
• Changes in the price of our common stock						
• We issue debt when we have substantial accumulated profits						

11. What factors affect your firm's choice between short and long term debt? Please rate on a scale of zero (irrelevant) to five (very important). Please make a tick mark that best reflects your choice.

Factors	0	1	2	3	4	5
• We issue short term debt when short term interest rates are low compared to long term rates						
• Matching the maturity of our debt with the life of our assets						
• We issue short term debt when we are waiting for long term market interest rates to decline						
• We use short term debt so that returns from new projects can be captured more fully by shareholders, rather than committing to pay long term profits as interest to debtholders						
• We expect our credit rating to improve, so we borrow short term until it does						
• Using short term debt reduces the chance that our firm will want to take on risky investments						
• We issue long term debt to minimize the risk of having to refinance in "bad times"						

Thank you very much for your valuable inputs and cooperation!